



United States Department of Agriculture

Minnesota Timber Industry: An Assessment of Timber Product Output and Use, 2010

Brian F. Walters, Steve Vongroven, and Ronald J. Piva



Abstract

In 2010, there were 417 active primary wood-using mills in Minnesota. These mills processed 238.8 million cubic feet of industrial roundwood. There was 226.1 million cubic feet of industrial roundwood harvested from Minnesota forests. The majority of roundwood harvested was pulpwood, accounting for 61 percent of the total. The harvesting of industrial roundwood products generated 110.6 million cubic feet of harvest residues. Primary wood-processing mills generated 1.5 million green tons of mill residues.

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Cover Photo

Aspen pulp logs, Minnesota. Photo by Rocky Mountain Research Station - Forest Pathology, USDA Forest Service, Bugwood.org.

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INTRODUCTION

The wood products manufacturing industry¹ in Minnesota employs more than 28,000 people and has an output of more than \$8.7 billion, according to the most recent economic census of the United States (U.S. Census Bureau 2007). Given the importance of this industry to the economy of Minnesota, this resource bulletin reports the results of a study of all primary wood-using mills in 2010. The study was conducted to determine the amount and source of wood receipts, industrial roundwood production, interstate movement of industrial roundwood, and mill residue disposition. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, economic research, forest resource management, and forest industry development.

The last published report of timber product output and use in Minnesota (Haugen and Jacobson 2012) covered a 2007 study and is used here for comparison. When new studies are completed, errors and omissions from previous studies are corrected. As a result of our ongoing efforts to improve the efficiency and reliability of timber product output (TPO) studies, changes may have been made to data from previous studies. All comparisons and analysis in this report are based on the reprocessed data from earlier studies, which may or may not match earlier published data. Rows and columns of the supporting data tables may not sum due to rounding, but data in each cell are accurately displayed.

This TPO study is a complement to the Forest Inventory and Analysis (FIA) annual inventory of forest resources (Miles and Aunan 2011). More information about the forest resources of Minnesota is available at the Northern Research Station (NRS) FIA website: <http://www.nrs.fs.fed.us/fia/data-tools/state-reports/MN>.

STUDY METHODS

This study was a cooperative effort between the Minnesota Department of Natural Resources (MN-DNR) and the NRS-FIA unit of the U.S. Forest Service. The FIA program is responsible for providing forest resource statistics, including timber product outputs, for all land ownerships across the United States.

MN-DNR personnel surveyed all known primary wood-using mills, using questionnaires supplied by NRS-FIA. Primary mills are those that process roundwood in log or bolt form or as chipped roundwood. The questionnaires are 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 mill residues remaining after processing. Completed questionnaires were sent to NRS-FIA for analysis. As part of this analysis, all industrial roundwood volumes reported on the questionnaires were converted to standard units of measure using regional conversion factors. 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 (Smith 1991). To provide a complete assessment of Minnesota's timber product output, this report includes data on roundwood volume processed by in-state and out-of-state mills known to be harvested from Minnesota forests.

¹ North American Industry Classification System (NAICS) 321 – wood product manufacturing and NAICS 322 – paper manufacturing

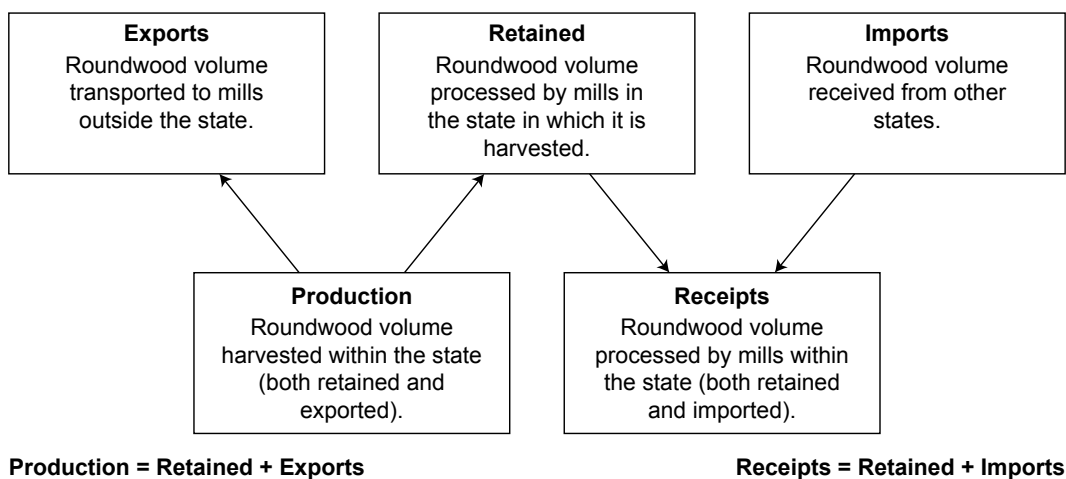


Figure 1.—The movement of industrial roundwood.

Certain terms used in this report have specialized meanings and relationships unique to timber product output studies conducted by FIA. Figure 1 displays the relationships and definitions of terms related to the flow of harvested roundwood. See the glossary for definitions of other terms used in this publication.

PRIMARY TIMBER INDUSTRY IN MINNESOTA

Industrial Roundwood

- The primary wood-using industry in Minnesota consisted of 362 sawmills, 3 veneer mills, 5 pulp mills, 4 engineered wood product mills, 3 post, pole, and piling mills, and 40 mills producing other wood products ([Table 1](#), Fig. 2)(Tables begin on page 17.).
- Receipts of industrial roundwood at Minnesota primary wood-using mills totaled 238.8 million cubic feet in 2010, an increase of 3 percent over the 231.9 million cubic feet received at mills in 2007; however, it is still much less than the 317.7 million cubic feet received in 2004 ([Table 2](#)).
- Eighty-seven percent of the industrial roundwood processed by Minnesota mills was harvested from forests within the State. Wisconsin was the largest supplier of imported roundwood, supplying 10 percent of the total amount of industrial roundwood processed ([Table 3](#)).
- Seventy-one percent of industrial roundwood processed by Minnesota mills was made up of hardwood species. Aspen alone accounted for 50 percent of the total volume processed.
- Industrial roundwood production in Minnesota increased slightly from 221.3 million cubic feet in 2007 to 226.1 million cubic feet in 2010, an increase of 2.1 percent ([Table 4](#), Fig. 3). This increase was largely due to a nearly 11 percent increase in softwood production despite a small decrease in hardwood production.
- Ninety-two percent of the industrial roundwood harvest in Minnesota was retained for processing by primary wood-using mills in the State. Mills in Wisconsin, Iowa, and Canada received most of Minnesota's industrial roundwood exports ([Table 5](#)).

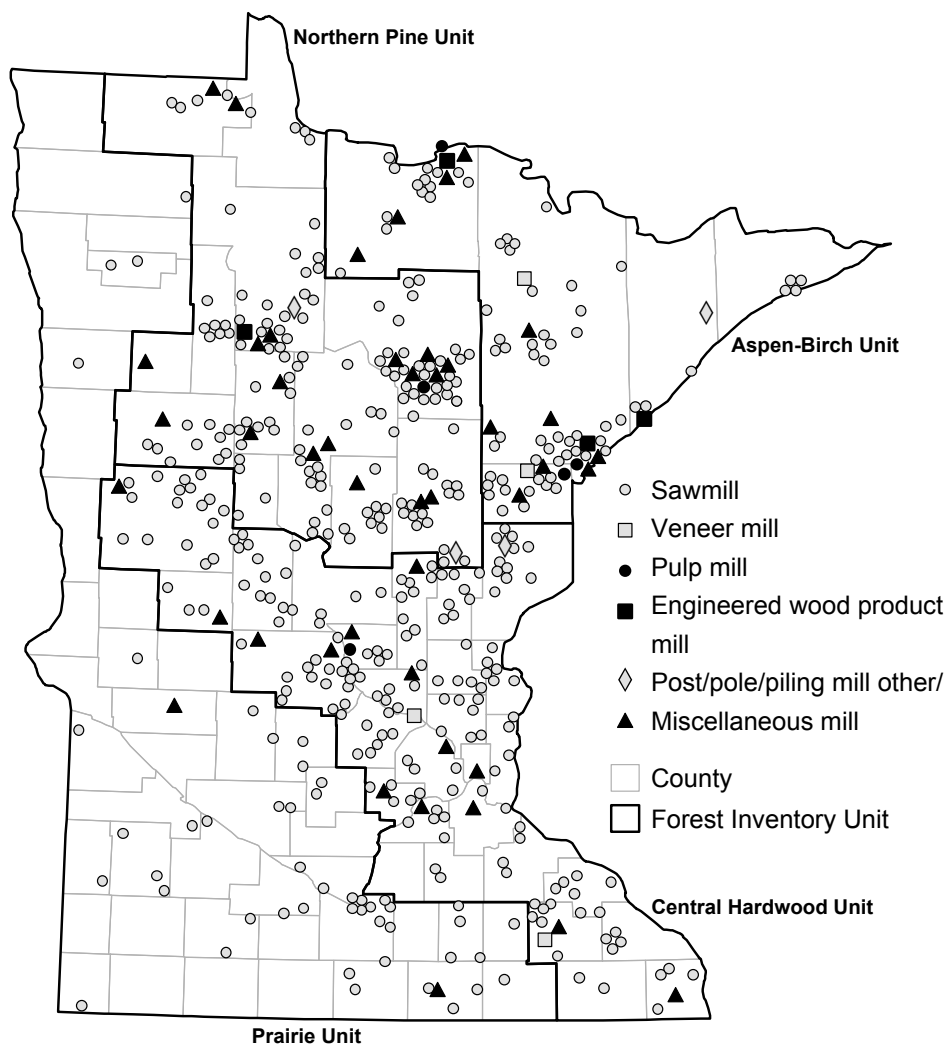


Figure 2.—Minnesota Forest Inventory Units and the approximate locations of primary wood-using mills, 2010.

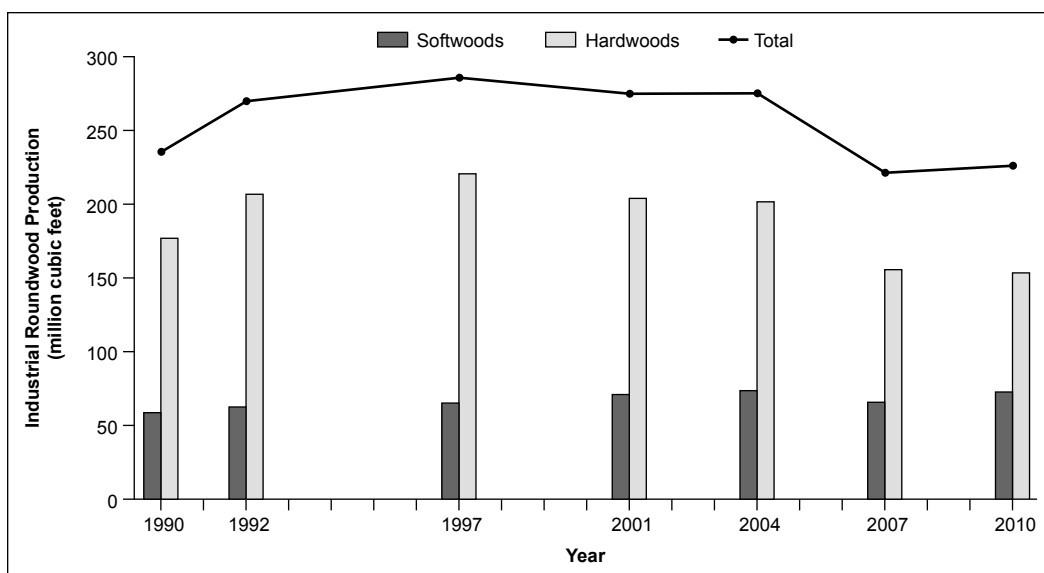


Figure 3.—Minnesota industrial roundwood production by major species group and survey year (Hackett and Dahlman 1993, Hackett and Dahlman 1997, Reading and Krantz 2002, Reading and Jacobson 2008, Haugen and Jacobson 2012).

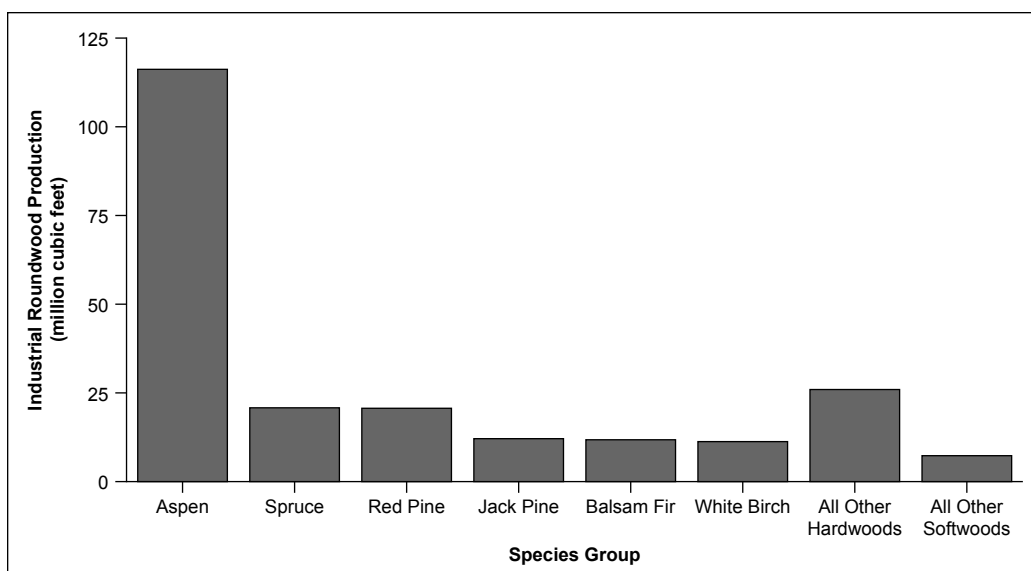


Figure 4.—Industrial roundwood production by species group, Minnesota, 2010.

- Fifty-one percent of the industrial roundwood production volume was from the aspen species group. Spruce (9 percent), red pine (9 percent), jack pine, balsam fir, and white birch (5 percent each) were other major species groups harvested ([Table 6](#), Fig. 4).
- The heavily forested Northern Pine and Aspen-Birch Forest Inventory Units were the origin of most of the State’s roundwood production, at 51 percent and 39 percent of the total, respectively. The Central Hardwood Unit had 10 percent of total production and the Prairie Unit produced less than 1 percent. (See Fig. 1 for inventory unit boundaries.)
- Pulpwood harvests accounted for 61 percent of the total industrial roundwood production. Sawmills (18 percent) and engineered wood product mills (15 percent) were the next largest consumers of Minnesota’s industrial roundwood production ([Table 7](#), Fig. 5).

Saw Logs

- Receipts at Minnesota sawmills totaled 227.0 million board feet in 2010, a decrease of 5.3 percent from the 239.5 million board feet received in 2007 ([Table 8](#)).
- Saw log production decreased by 2.4 percent between 2007 and 2010, from 233.8 million board feet to 228.3 million board feet.
- Red pine accounted for 38 percent of the total volume of saw log production in Minnesota. Jack pine (17 percent), aspen (11 percent), and red oak (10 percent) were the only other species groups that had more than 10 percent of total saw log production (Fig. 6).
- Ninety-three percent of receipts at Minnesota sawmills was from saw logs harvested in Minnesota. Most saw log imports into the State were from Wisconsin and Canada ([Table 9](#)).
- Exports of Minnesota saw logs went to Iowa, North Dakota, Wisconsin, and Canada. Seventy-four percent of exported saw logs was made up of hardwood species that went to Iowa and Wisconsin. Softwood saw logs were exported to North Dakota, Wisconsin, and Canada ([Table 10](#)).

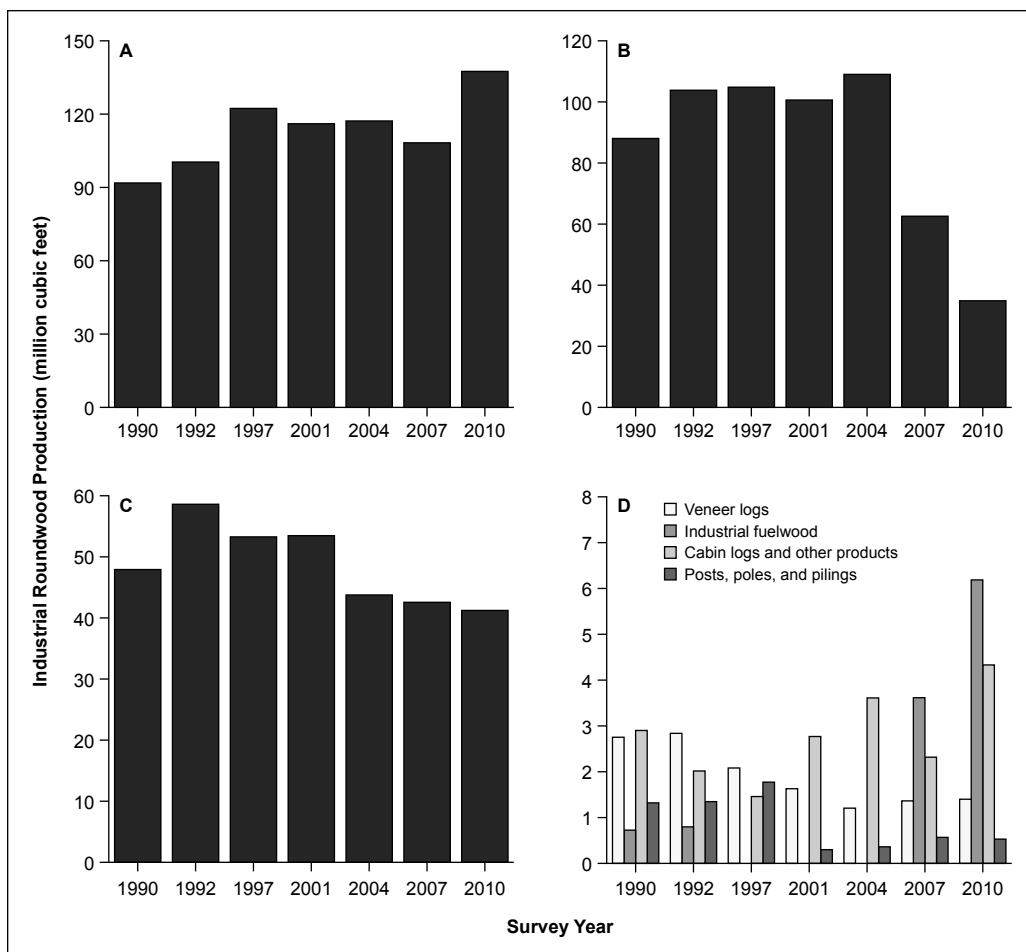


Figure 5.—Minnesota industrial roundwood production by survey year and (A) pulpwood, (B) engineered wood products, (C) saw logs, (D) other products (Hackett and Dahlman 1993, Hackett and Dahlman 1997, Reading and Krantz 2002, Reading and Jacobson 2008, Haugen and Jacobson 2012).

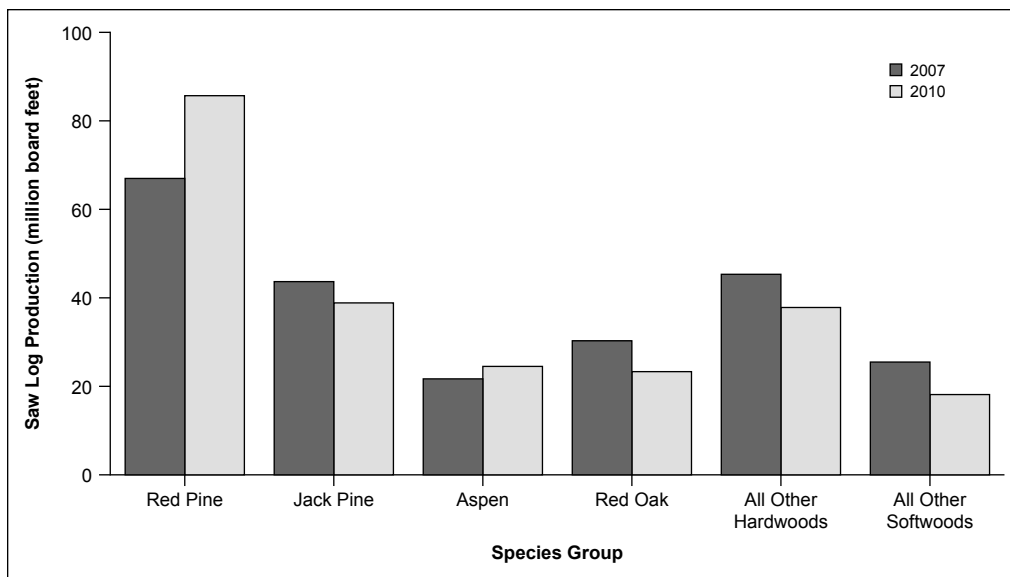


Figure 6.—Saw log production by species group, Minnesota, 2007 and 2010 (Haugen and Jacobson 2012).

Other Products

- Pulpwood, at 137.5 million cubic feet, was the most harvested product from Minnesota forests in 2010, an increase of 27 percent over the 108 million cubic feet harvested in 2007 (Table 4). Aspen was by far the largest species group harvested for pulpwood with 81 million cubic feet harvested, or 59 percent of the total. Spruce was the largest softwood species group harvested at nearly 19 million cubic feet, or 13.7 percent of the total (Table 7).
- Industrial roundwood production for engineered wood products amounted to slightly less than 35 million cubic feet in 2010, a decrease of 44 percent from the 62 million cubic feet harvested in 2007. Aspen was again the leading species group harvested, comprising 78 percent of total engineered wood product production.
- Receipts at Minnesota pulp mills and engineered wood product mills in 2010 were 2 million standard cords and 425,000 standard cords, respectively. The vast majority of receipts at pulp and engineered wood product mills were from roundwood, with small percentages (4 percent for pulp mills and less than 1 percent for engineered wood product mills) coming from mill residues (Table 11).
- Most of the production of pulpwood and roundwood for engineered wood products was consumed at Minnesota mills with small amounts of both roundwood and mill residues exported to mills in Wisconsin and Canada (Table 12).
- Production of industrial fuelwood increased 71 percent, with harvests of 6.2 million cubic feet in 2010 over 3.6 million cubic feet in 2007. The aspen, tamarack, and ash species groups were the most harvested groups for industrial fuelwood with about 20 percent of the total harvest each (Table 7).
- The remainder of Minnesota roundwood production was veneer logs, cabin logs, posts, poles, and other miscellaneous products. All combined, roundwood production for these products amounted to slightly less than 2 percent of total production.

Timber Removals

- The harvest of industrial roundwood from Minnesota's forests in 2010 resulted in 336.6 million cubic feet of total wood material cut with 226.1 million cubic feet (67 percent) used for primary wood products and 110.6 million cubic feet (33 percent) left on the ground as harvest residues (Table 13, Fig. 7).
- Growing-stock sources, at 225.1 million cubic feet, were the largest component of removals for industrial roundwood production. Ninety-four percent of the growing stock removed was used for products with the remaining 6 percent left as logging residue. Two-thirds of the growing-stock removals used for products were sawtimber-sized trees.
- Non-growing-stock sources of industrial roundwood production accounted for 111.6 million cubic feet of wood material removed. Twelve percent of this material was used for products; the remainder was left on site as logging slash. Fifty-six percent of the non-growing-stock material used for products came from cull trees and 41 percent came from the limbs of growing-stock trees; the rest of the volume used came from saplings and dead trees.

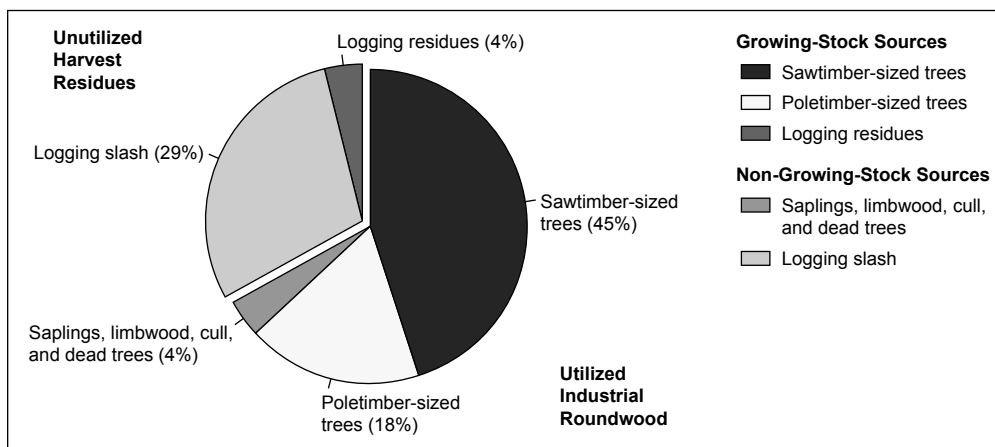


Figure 7.—Distribution of timber removals for industrial roundwood by source of material, Minnesota, 2010.

- Nearly 52 percent of the total growing-stock material removed from Minnesota's timberland came from the Northern Pine Forest Inventory Unit. Thirty-eight percent came from the Aspen-Birch Unit, 10 percent from the Central Hardwood Unit, and less than 1 percent came from the Prairie Unit ([Table 14](#)).
- More than 673.3 million board feet of sawtimber was removed from Minnesota's timberland. Softwoods accounted for 36 percent of total sawtimber removals and hardwoods for 64 percent. Aspen was by far the most harvested species group at 328.7 million board feet, or 49 percent of all sawtimber removal volume ([Table 15](#)).
- Fifty-one percent of the harvest residue in Minnesota was produced in the Northern Pine Forest Inventory Unit. The Aspen-Birch Unit produced 37 percent of the harvest residue total, the Central Hardwood Unit produced 11 percent, and the Prairie Unit produced less than 1 percent ([Table 16](#)).

Harvest Intensity

- In 2010, there was nearly 17.3 million acres of forest land in Minnesota (Miles and Aunan 2011). The net volume in live trees on forest land was 18.4 billion cubic feet. Slightly less than 2 percent of that total live tree volume, or 336.7 million cubic feet, was removed due to harvesting in the State ([Table 13](#)).
- Most counties in Minnesota had harvest intensities of less than 15 cubic feet removed per acre of forest land ([Fig. 8](#)). Two counties in which primary wood-using mills reported receiving roundwood had 0 acres of forest land as estimated by the FIA inventory. Therefore, harvest intensity was unable to be calculated for those counties.
- The Northern Pine Forest Inventory Unit had the greatest harvest intensity of the units, with 27 cubic feet of total wood material removed per acre of forest land, followed by the Aspen-Birch Unit (17 cubic feet per acre), the Central Hardwood Unit (12 cubic feet per acre), and the Prairie unit (3 cubic feet per acre).

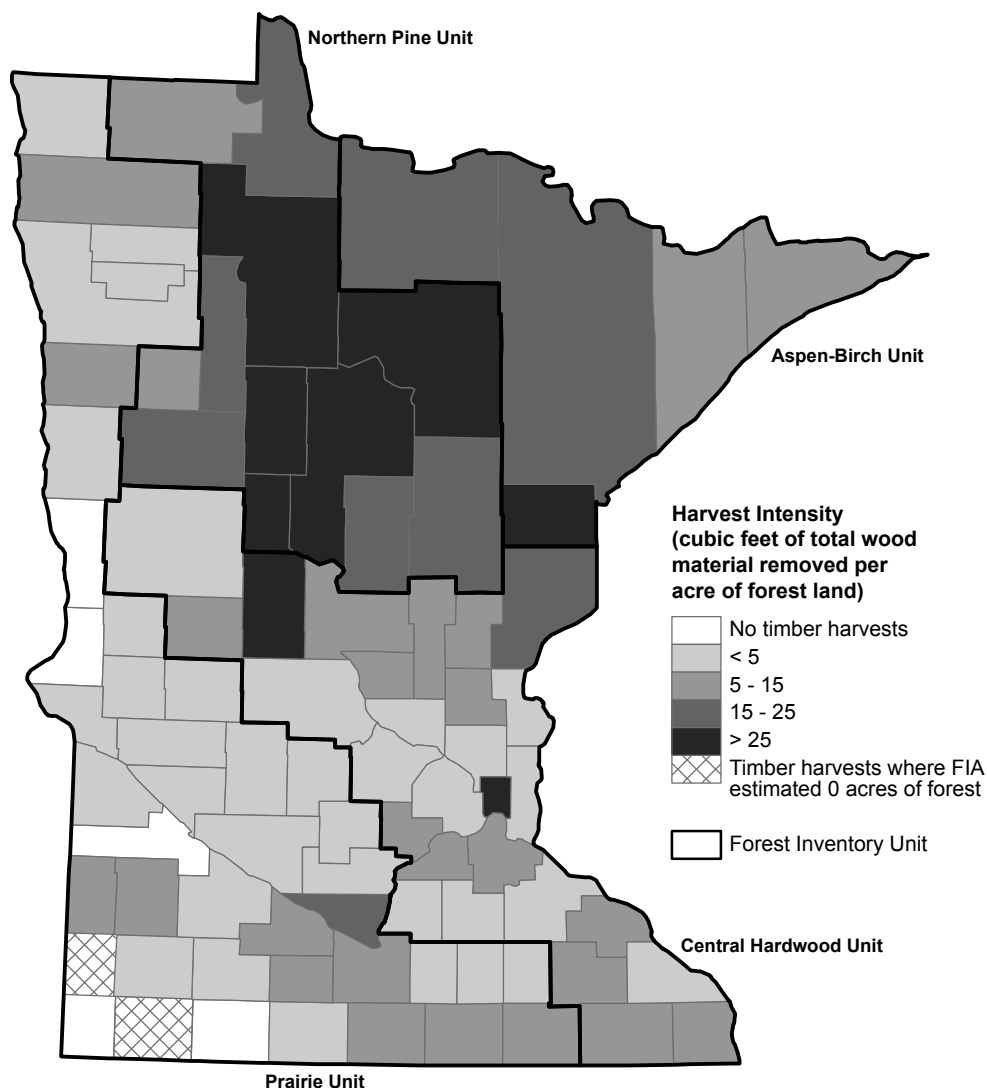


Figure 8.—Harvest intensity of industrial roundwood by county, Minnesota, 2010.

Primary Mill Residues

- In converting industrial roundwood into products, Minnesota's primary wood-using industries generated 1.5 million green tons of coarse wood residue (slabs, edgings, and veneer cores), fine wood residues (sawdust and veneer clippings), and bark residue ([Table 17](#), Fig. 9).
- Sixty-nine percent of mill residues generated was used as industrial fuel. Mulch was the second largest use of mill residues at 13 percent of the total. Only 0.5 percent of mill residues went unused (Fig. 10).
- The top use of coarse wood residues was mulch with 50 percent of total coarse wood residues going for that purpose. Industrial fuel was the top use of both fine wood residues and bark residues, at 71 percent and 92 percent of the totals, respectively.

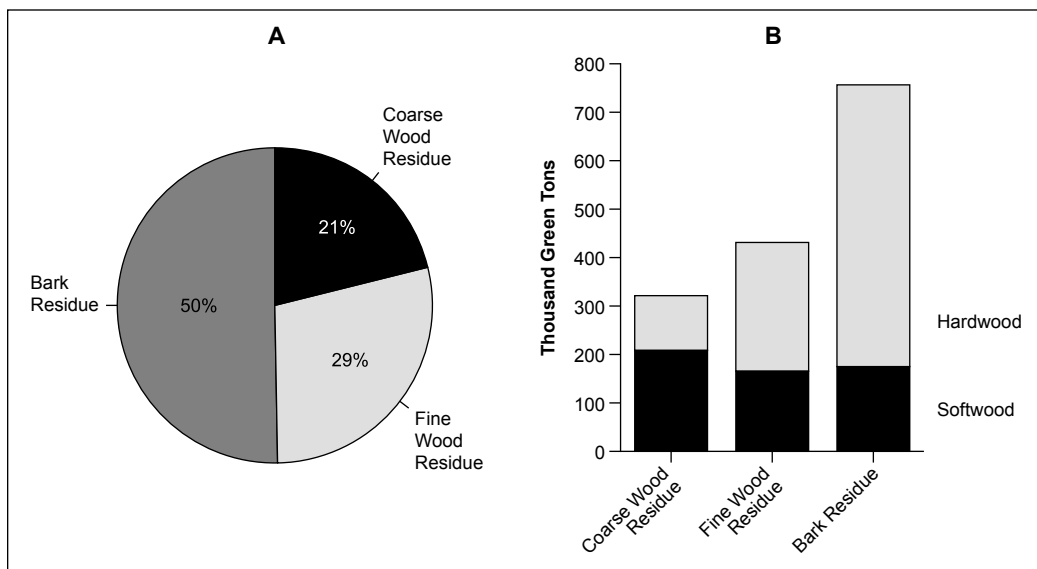


Figure 9.—Residues generated by primary wood-using mills by (A) type of residue and (B) major species group, Minnesota, 2010.

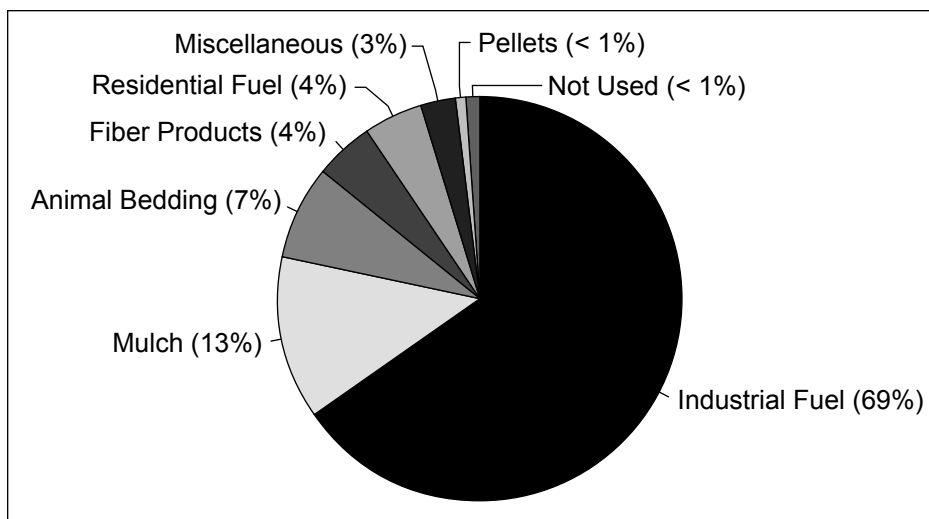


Figure 10.—Disposal of mill residue by use of residue, Minnesota, 2010.

ACKNOWLEDGMENTS

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GLOSSARY

Board foot. Unit of measure for lumber cut from roundwood. One board foot is equivalent to a board that is 1 foot long, 1 foot wide, and 1 inch thick.

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.

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.

Engineered wood product. Also called a composite product. A derivative wood product that is manufactured by binding the fibers, strands, or particles of wood together with adhesives. Can be made from industrial roundwood or mill residues. Common products include oriented strand board (OSB), particleboard, wafer board, hardboard, and medium density fiberboard (MDF).

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, engineered wood products 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 ¼-inch rule. A log rule or formula for estimating the board-foot volume of logs, allowing ½ inch of taper for each 4-foot length and assuming ¼ inch of kerf. This rule is used as the U.S. Forest Service standard log rule in the eastern United States.

Limewood 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 U.S. Census Bureau 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, and pulp.

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 and retained in a geographic area plus all roundwood material harvested and exported to other geographical areas.

Pulpwood. Industrial roundwood used for processing into wood pulp.

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 (includes forks, sweep and crook, and large branches or knots), 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.

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 10, 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 12, 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 ¼-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 (at breast height or root collar, depending on the species) of 3 in. (7.6 cm) and a minimum height of 15 ft (4.6 m) 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.

APPENDIX 1

Common and Scientific Names of Tree Species in Minnesota by TPO Species Group

Softwoods

Baldcypress	<i>Taxodium distichum</i>
Eastern redcedar	<i>Juniperus virginiana</i>
Northern white-cedar	<i>Thuja occidentalis</i>
Balsam fir	<i>Abies balsamea</i>
Jack pine	<i>Pinus banksiana</i>
Red pine	<i>Pinus resinosa</i>
White pine	
Eastern white pine	<i>Pinus strobus</i>
Other pine	
Scotch pine	<i>Pinus sylvestris</i>
Other <i>pinus</i>	<i>Pinus</i> spp.
Spruce	
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>
Tamarack	<i>Larix laricina</i>

Hardwoods

Ash	
White ash	<i>Fraxinus americana</i>
Black ash	<i>Fraxinus nigra</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Aspen	
Bigtooth aspen	<i>Populus grandidentata</i>
Quaking aspen	<i>Populus tremuloides</i>
Balsam poplar	<i>Populus balsamifera</i>
Basswood	
American basswood (Linden)	<i>Tilia americana</i>
White (paper) birch	<i>Betula papyrifera</i>
Yellow birch	<i>Betula alleghaniensis</i>
Black cherry	<i>Prunus serotina</i>
Black walnut	<i>Juglans nigra</i>
Cottonwood	
Eastern cottonwood	<i>Populus deltoides</i>
Elm	
American elm	<i>Ulmus americana</i>
Siberian elm	<i>Ulmus pumila</i>
Slippery elm	<i>Ulmus rubra</i>

Rock elm	<i>Ulmus thomasi</i>
Hickory	
Bitternut hickory	<i>Carya cordiformis</i>
Shagbark hickory	<i>Carya ovata</i>
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>
Red oak	
Northern pin oak	<i>Quercus ellipsoidalis</i>
Northern red oak	<i>Quercus rubra</i>
Black oak	<i>Quercus velutina</i>
White oak	
White oak	<i>Quercus alba</i>
Bur oak	<i>Quercus macrocarpa</i>
Other hardwoods	
Hackberry	<i>Celtis occidentalis</i>
Black willow	<i>Salix nigra</i>
Black locust	<i>Robinia pseudoacacia</i>

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Table 1.—Number of active primary wood-using mills by mill type and survey year, Minnesota

	Survey Year						
	1990	1992	1997	2001	2004	2007	2010
Sawmills ^a							
Large (greater than 5 million board feet)	15	15	12	11	9	8	7
Medium (1 million to 5 million board feet)	53	44	41	35	26	23	19
Small (less than 1 million board feet)	449	509	275	267	335	335	336
Total	517	568	328	313	370	366	362
Veneer mills	1	1	8	3	2	2	3
Pulp mills	7	7	7	6	6	6	5
Engineered wood product mills	8	9	9	8	8	7	4
Post, pole, piling mills	6	2	5	2	4	4	3
Other mills ^b	12	9	34	14	25	29	40
Grand Total	551	596	391	346	415	414	417

^a Classified by annual lumber production in million board feet, International ¼ inch rule.

^b Other mills include mills producing cabin logs, industrial fuelwood, excelsior/shavings, cooperage or other miscellaneous products.

Table 2.—Industrial roundwood receipts, in thousand cubic feet, by mill type, survey year, and softwoods and hardwoods, Minnesota

	Year						
	1990	1992	1997	2001	2004	2007	2010
ALL SPECIES							
Saw logs	56,764	60,106	56,502	54,439	45,379	43,371	40,929
Veneer logs	3,305	1,735	1,870	1,472	738	739	932
Pulp mills	86,783	95,638	114,286	133,891	148,200	114,540	152,151
Engineered wood product mills	85,871	102,338	101,010	109,341	118,370	66,166	33,209
Post, pole, piling mills	3,811	1,231	1,774	420	782	580	432
Other mills ^a	3,804	2,953	1,354	3,375	4,268	6,458	11,108
Total	240,338	264,001	276,796	302,939	317,738	231,854	238,761
SOFTWOODS							
Saw logs	18,289	27,289	27,884	29,195	29,407	27,777	27,662
Pulp mills	36,649	30,751	29,448	33,740	35,119	31,976	33,911
Particleboard mills	918	3,133	1,226	4,312	10,755	6,014	2,643
Post, pole, piling mills	3,811	1,231	1,774	420	782	579	432
Other mills ^a	1,164	486	151	384	1,256	2,462	4,022
Total	60,831	62,890	60,483	68,051	77,318	68,808	68,670
HARDWOODS							
Saw logs	38,474	32,817	28,618	25,244	15,973	15,594	13,267
Veneer logs	3,305	1,735	1,870	1,472	738	739	932
Pulp mills	50,135	64,887	84,838	100,151	113,081	82,564	118,240
Engineered wood product mills	84,954	99,205	99,783	105,030	107,615	60,151	30,566
Post, pole, piling mills	--	--	--	--	--	1	--
Other mills ^a	2,640	2,467	1,203	2,991	3,013	3,996	7,086
Total	179,507	201,111	216,313	234,889	240,420	163,046	170,091

^a Other mills include mills producing cabin logs, industrial fuelwood, excelsior/shavings, cooperage or other miscellaneous products.

Table 3.—Industrial roundwood receipts, in thousand cubic feet, by species group and place of origin, Minnesota, 2010

	Total	U.S. State or Country of origin							
		Iowa	Michigan	Minnesota	North Dakota	South Dakota	Wisconsin	Other States ^a	Canada
Softwoods									
Baldcypress	1	--	--	--	--	--	--	1	--
Eastern redcedar	16	--	--	16	--	--	0	--	--
Northern white-cedar	449	--	--	444	--	--	3	--	2
Balsam fir	13,624	--	6	11,580	--	--	2,029	--	9
Jack pine	11,421	--	--	10,165	--	--	681	--	576
Red pine	20,100	--	--	19,050	1	--	1,039	--	10
White pine	1,341	--	--	1,316	--	--	25	--	1
Other pine	906	--	--	789	--	--	117	--	--
Spruce	16,900	--	--	16,463	--	--	187	--	250
Tamarack	3,911	--	--	3,815	--	--	52	--	44
Total	68,670	--	6	63,638	1	--	4,133	1	891
Hardwoods									
Ash	3,775	1	70	3,268	0	1	417	1	16
Aspen	119,282	--	176	112,479	1	--	5,030	--	1,595
Basswood	2,055	--	13	1,898	4	--	136	--	4
White birch	11,031	--	--	10,565	--	--	453	--	13
Yellow birch	73	--	--	71	--	--	1	--	--
Black cherry	23	--	--	22	--	--	1	1	--
Black walnut	89	1	--	85	--	1	1	1	--
Cottonwood	2,172	1	--	2,163	0	2	4	2	--
Elm	258	--	--	246	--	--	11	--	0
Hickory	33	0	--	32	--	--	0	1	--
Hard maple	24,710	23	4,370	7,885	--	1	12,428	1	2
Soft maple	1,181	1	--	1,100	--	--	77	--	4
Red oak	3,821	17	--	3,697	--	--	107	--	1
White oak	1,556	111	--	1,239	0	--	204	--	1
Other hardwoods	34	--	--	33	--	--	1	--	0
Total	170,091	155	4,629	144,784	6	4	18,872	5	1,636
State total	238,761	155	4,635	208,422	7	4	23,004	7	2,527

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 cubic feet. Columns and rows may not add to their totals due to rounding.

^a Other States includes Florida, Illinois, and Nebraska.

Table 4.—Industrial roundwood production, in thousand cubic feet, by product, softwoods and hardwoods, and survey year, Minnesota

	Survey Year						
	1990	1992	1997	2001	2004	2007	2010
ALL SPECIES							
Saw logs	47,925	58,609	53,272	53,466	43,763	42,562	41,230
Veneer logs	2,753	2,838	2,082	1,629	1,206	1,364	1,400
Pulp mills	91,837	100,397	122,339	116,081	117,202	108,281	137,488
Engineered wood product mills	88,038	103,819	104,820	100,619	109,016	62,585	34,904
Cabin logs	--	34	73	64	168	341	101
Industrial fuelwood	725	797	--	--	--	3,616	6,187
Pilings	528	297	--	--	--	--	--
Poles	371	200	1,687	300	362	377	157
Posts	422	851	86	--	--	191	372
Other products ^a	2,901	1,983	1,386	2,706	3,443	1,977	4,229
Total	235,500	269,825	285,744	274,865	275,161	221,295	226,068
SOFTWOODS							
Saw logs	14,818	23,447	22,891	26,828	26,832	25,474	26,169
Veneer logs	2	--	--	--	--	--	--
Pulp mills	40,411	34,187	39,360	39,449	34,761	31,965	39,540
Engineered wood product mills	924	3,038	981	3,978	10,441	5,307	2,469
Cabin logs	--	34	73	5	168	339	101
Industrial fuelwood	--	--	--	--	--	891	1,905
Pilings	528	297	--	--	--	--	--
Poles	371	200	1,687	300	362	377	157
Posts	422	851	86	--	--	190	372
Other products ^a	1,145	453	78	379	1,001	1,160	1,942
Total	58,622	62,506	65,156	70,939	73,566	65,702	72,656
HARDWOODS							
Saw logs	33,106	35,163	30,381	26,638	16,931	17,089	15,060
Veneer logs	2,751	2,838	2,082	1,629	1,206	1,364	1,400
Pulp mills	51,427	66,210	82,979	76,633	82,441	76,316	97,947
Engineered wood product mills	87,114	100,782	103,839	96,641	98,575	57,278	32,435
Cabin logs	--	--	--	59	--	2	0
Industrial fuelwood	725	797	--	--	--	2,725	4,282
Posts	--	--	--	--	--	1	--
Other products ^a	1,756	1,530	1,307	2,326	2,442	817	2,287
Total	176,878	207,319	220,588	203,926	201,595	155,593	153,412

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 cubic feet. Columns and rows may not add to their totals due to rounding.

^a Other products includes excelsior/shavings, handles, cooperage, and other miscellaneous products.

Table 5.—Industrial roundwood production, in thousand cubic feet, by species group and location of mill, Minnesota, 2010

	Total	U.S. State or Country of mill								
		Iowa	Michigan	Minnesota	North Dakota	Ohio	South Dakota	Wisconsin	Canada	Other Countries
Softwoods										
Eastern redcedar	16	--	--	16	--	--	--	--	--	--
Northern white-cedar	445	--	--	444	1	--	--	--	--	--
Balsam fir	11,792	--	--	11,580	--	--	--	102	109	--
Jack pine	12,097	--	--	10,165	--	--	--	1,039	893	--
Red pine	20,666	--	--	19,050	--	--	1	1,491	124	--
White pine	1,607	--	--	1,316	--	--	1	290	--	--
Other pine	789	--	--	789	--	--	--	0	--	--
Spruce	20,800	--	--	16,463	--	--	--	4,129	208	--
Tamarack	4,444	--	--	3,815	--	--	--	63	566	--
Total	72,656	--	--	63,638	1	--	1	7,115	1,901	--
Hardwoods										
Ash	3,758	3	0	3,268	--	0	--	473	--	14
Aspen	116,191	10	--	112,479	--	--	--	1,915	1,787	--
Basswood	2,132	9	--	1,898	--	--	--	205	--	19
Beech	0	--	--	--	--	--	--	0	--	--
White birch	11,270	--	--	10,565	--	--	--	680	--	25
Yellow birch	125	--	0	71	--	--	--	53	--	--
Black cherry	71	9	--	22	--	14	--	26	--	0
Black walnut	304	3	0	85	--	7	--	174	--	35
Cottonwood	2,201	22	--	2,163	--	--	--	13	--	3
Elm	260	6	--	246	--	--	--	8	--	0
Hickory	94	13	--	32	--	--	--	49	--	0
Hard maple	8,750	15	1	7,885	--	30	--	810	--	8
Soft maple	1,840	14	--	1,100	--	--	--	726	--	--
Red oak	4,802	391	2	3,697	--	--	--	686	--	25
White oak	1,558	129	1	1,239	--	--	--	174	--	15
Other hardwoods	58	--	--	33	--	--	--	25	--	--
Total	153,412	624	5	144,784	--	51	--	6,016	1,787	145
State total	226,068	624	5	208,422	1	51	1	13,131	3,688	145

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table 6.—Industrial roundwood production, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Minnesota, 2010

Forest Survey Unit and County	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Aspen-Birch											
Carlton	8,936	--	29	198	163	909	56	220	192	63	1,830
Cook	3,307	--	2	111	287	561	44	--	569	0	1,575
Koochiching	23,557	--	229	2,352	732	845	55	--	6,531	1,115	11,858
Lake	7,692	--	12	690	560	497	65	2	1,739	92	3,658
St. Louis	43,659	--	98	3,162	2,535	2,475	547	143	5,535	948	15,443
Unit Total	87,150	--	370	6,513	4,278	5,288	766	365	14,566	2,217	34,363
Northern Pine											
Aitkin	11,938	--	17	412	238	532	53	83	318	156	1,810
Becker	3,689	--	--	268	299	460	5	--	69	69	1,171
Beltrami	17,135	--	17	778	511	1,307	88	12	811	424	3,949
Cass	17,026	--	13	370	1,278	3,534	99	28	151	229	5,702
Clearwater	4,817	--	--	160	33	145	8	--	136	8	490
Crow Wing	5,886	--	1	38	466	898	44	63	42	13	1,566
Hubbard	10,109	--	--	264	1,038	2,392	9	2	151	122	3,978
Itasca	33,500	--	23	2,560	1,635	3,674	314	36	3,290	656	12,188
Lake of the Woods	6,575	--	2	252	712	257	1	--	915	348	2,487
Mahnomen	505	--	--	2	12	9	2	--	19	--	44
Roseau	2,069	--	--	110	307	67	--	--	163	59	706
Wadena	2,372	--	--	7	881	914	1	--	0	--	1,803
Unit Total	115,622	--	73	5,221	7,411	14,190	624	225	6,064	2,084	35,892
Central Hardwood											
Anoka	127	0	--	--	--	20	8	0	0	1	30
Benton	191	0	--	1	--	31	1	16	16	0	65
Carver	42	1	--	--	--	--	--	--	0	--	1
Chisago	240	0	--	--	--	11	9	1	0	0	21
Dakota	141	0	--	--	1	6	6	--	2	--	16
Douglas	462	--	--	--	238	--	--	--	--	--	238
Fillmore	870	--	--	--	--	0	1	--	1	--	2
Goodhue	213	--	2	--	--	2	2	--	0	--	6
Hennepin	64	1	--	--	--	5	2	0	0	1	9
Houston	1,165	--	--	--	--	1	--	--	--	--	1
Isanti	430	1	--	--	1	29	3	3	8	4	49
Kanabec	1,385	--	--	4	1	31	6	0	6	24	71
Le Sueur	50	1	--	--	--	--	--	--	--	--	1
Mille Lacs	1,382	--	--	--	46	122	42	13	2	17	242
Morrison	1,584	2	--	6	1	16	15	3	4	7	54
Olmsted	284	0	--	--	--	1	1	--	1	--	4
Otter Tail	570	--	--	1	--	11	1	--	1	67	82
Pine	7,992	--	--	47	108	687	48	161	108	16	1,173

continued

Table 6.—continued

Forest Survey Unit and County	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Central Hardwood continued											
Ramsey	51	0	--	--	--	5	9	0	6	1	22
Rice	12	--	--	--	--	--	--	--	--	--	--
Scott	101	2	--	--	--	--	--	--	--	--	2
Sherburne	243	1	--	--	1	71	7	2	1	--	83
Stearns	121	1	--	--	--	2	1	--	0	0	4
Todd	2,482	--	--	--	2	18	1	--	--	--	21
Wabasha	704	--	--	--	10	74	32	--	1	--	116
Washington	91	0	--	--	--	22	3	--	6	0	31
Winona	711	0	--	--	--	20	14	--	1	--	35
Wright	85	0	--	--	--	0	0	--	--	--	1
Unit Total	21,790	11	2	58	408	1,187	210	199	165	139	2,379
Prairie											
Big Stone	8	0	--	--	--	--	--	--	--	--	0
Blue Earth	87	1	--	--	--	--	--	--	--	--	1
Brown	55	0	--	--	--	0	0	--	--	--	0
Chippewa	7	--	--	--	--	--	--	--	--	--	--
Clay	16	--	--	--	--	--	--	--	--	--	--
Cottonwood	6	--	--	--	--	--	--	--	--	--	--
Dodge	58	--	--	--	0	0	0	--	--	--	0
Faribault	43	--	--	--	--	--	--	--	1	--	1
Freeborn	26	--	--	--	--	--	2	--	1	--	3
Grant	1	--	--	--	--	--	--	--	--	--	--
Kandiyohi	12	1	--	--	--	--	--	--	--	--	1
Kittson	8	--	--	--	--	--	--	--	--	--	--
Lac Qui Parle	5	0	--	--	--	--	--	--	--	--	0
Lincoln	7	--	--	--	--	--	--	--	--	--	--
Lyon	6	--	--	--	--	--	--	--	0	--	0
Marshall	573	--	--	--	--	--	--	--	--	4	4
Martin	1	--	--	--	--	--	--	--	--	--	--
McLeod	3	0	--	--	--	--	--	--	--	--	0
Meeker	3	0	--	--	--	--	--	--	--	--	0
Mower	21	0	--	--	--	--	3	--	1	--	4
Murray	3	--	--	--	--	--	--	--	0	--	0
Nicollet	113	1	--	--	--	0	--	--	0	--	1
Nobles	2	--	--	--	--	--	--	--	--	--	--
Norman	84	--	--	--	--	--	--	--	--	--	--
Pennington	68	--	--	--	--	--	--	--	1	--	1
Pipestone	3	--	--	--	--	--	--	--	--	--	--
Polk	85	--	--	--	--	--	--	--	--	--	--
Pope	44	--	--	--	--	1	--	--	--	--	1

continued

Table 6.—continued

Forest Survey Unit and County	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Prairie continued											
Red Lake	70	--	--	--	--	--	--	--	--	--	--
Redwood	9	--	--	--	--	--	--	--	0	--	0
Renville	9	0	--	--	--	0	0	--	0	--	1
Rock	5	--	--	--	--	--	--	--	--	--	--
Sibley	8	--	--	--	--	--	--	--	--	--	--
Steele	13	--	--	--	--	0	1	--	0	--	1
Stevens	0	--	--	--	--	--	--	--	--	--	--
Swift	6	--	--	--	--	--	--	--	--	--	--
Waseca	13	1	--	--	--	--	--	--	0	--	1
Watonwan	23	--	--	--	--	--	--	--	--	--	--
Unit Total	1,506	5	--	--	0	1	7	--	4	4	22
State total	226,068	16	445	11,792	12,097	20,666	1,607	789	20,800	4,444	72,656

continued

Table 6.—continued

Forest Survey Unit and County	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Aspen-Birch											
Carlton	238	5,099	71	--	637	10	--	--	--	3	--
Cook	19	1,607	--	--	56	1	--	--	--	--	--
Koochiching	551	10,246	82	--	685	1	--	--	--	9	--
Lake	221	2,426	44	--	603	10	--	--	--	0	--
St. Louis	632	22,658	184	--	2,697	50	0	--	--	8	--
Unit Total	1,662	42,036	382	--	4,678	72	0	--	--	20	--
Northern Pine											
Aitkin	326	6,765	300	--	475	5	0	--	--	14	2
Becker	5	2,038	42	--	302	0	--	--	0	5	--
Beltrami	239	11,312	105	--	939	--	--	--	1	3	--
Cass	146	8,928	147	--	1,051	1	--	--	1	6	1
Clearwater	4	3,801	18	--	376	--	--	--	0	1	--
Crow Wing	58	3,514	70	--	262	1	--	--	1	7	1
Hubbard	11	5,327	16	--	535	--	--	--	1	2	--
Itasca	535	17,471	342	--	1,507	27	--	--	--	5	1
Lake of the Woods	66	3,869	--	--	148	0	--	--	--	--	--
Mahnomen	2	435	2	--	7	--	--	--	0	1	--
Roseau	20	1,296	0	--	46	--	--	--	--	0	--
Wadena	0	545	1	--	6	--	0	--	--	0	--
Unit Total	1,412	65,302	1,043	--	5,654	35	0	--	5	43	5
Central Hardwood											
Anoka	23	9	2	--	2	--	1	0	1	10	--
Benton	7	39	16	--	1	--	1	0	0	1	--
Carver	1	0	--	--	--	--	--	1	19	5	--
Chisago	20	13	13	0	4	2	1	--	6	3	1
Dakota	13	5	6	--	1	--	1	0	39	7	0
Douglas	7	7	22	--	0	--	--	0	143	4	--
Fillmore	7	2	79	--	1	--	11	67	4	25	13
Goodhue	6	31	9	--	0	--	5	13	5	7	3
Hennepin	11	5	2	--	0	--	1	2	1	5	--
Houston	7	18	20	--	0	--	15	55	13	13	29
Isanti	41	115	10	--	87	--	1	--	6	7	1
Kanabec	78	780	89	--	39	2	0	--	0	13	2
Le Sueur	3	--	1	--	--	--	--	1	25	5	--
Mille Lacs	67	599	67	--	49	1	--	--	2	8	1
Morrison	24	1,194	25	--	39	--	0	--	4	4	--
Olmsted	4	3	22	--	--	--	6	6	2	5	5
Otter Tail	8	261	32	--	2	--	--	--	89	--	--
Pine	158	4,080	169	0	693	12	1	--	0	8	2
Ramsey	8	5	1	--	0	--	0	0	5	0	--

continued

Table 6.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Aspen-Birch						
Carlton	923	69	42	14	0	7,107
Cook	21	28	--	--	--	1,732
Koochiching	68	42	2	13	0	11,699
Lake	589	140	--	0	0	4,034
St. Louis	1,504	409	52	18	2	28,216
Unit Total	3,105	687	97	46	2	52,787
Northern Pine						
Aitkin	1,357	159	617	103	5	10,129
Becker	8	78	29	10	--	2,518
Beltrami	540	1	17	30	0	13,187
Cass	534	114	301	92	1	11,324
Clearwater	40	1	7	80	--	4,328
Crow Wing	136	52	166	49	2	4,320
Hubbard	148	68	15	8	--	6,131
Itasca	1,062	136	171	55	1	21,313
Lake of the Woods	2	3	1	0	--	4,088
Mahnomen	1	0	1	11	--	461
Roseau	--	0	--	1	--	1,363
Wadena	--	1	6	10	--	569
Unit Total	3,828	613	1,330	450	9	79,730
Central Hardwood						
Anoka	1	8	32	8	0	97
Benton	4	1	36	14	5	126
Carver	3	--	5	7	--	41
Chisago	52	20	61	24	1	218
Dakota	0	6	35	11	1	125
Douglas	3	1	32	6	0	224
Fillmore	61	11	531	55	--	868
Goodhue	19	11	63	34	--	207
Hennepin	4	1	14	10	0	55
Houston	52	77	672	189	3	1,164
Isanti	8	35	47	19	6	381
Kanabec	57	58	136	55	4	1,313
Le Sueur	0	0	7	6	--	49
Mille Lacs	51	55	183	56	2	1,140
Morrison	27	5	159	47	1	1,530
Olmsted	12	8	168	37	3	281
Otter Tail	6	3	72	14	--	488
Pine	1,331	136	183	44	1	6,818
Ramsey	1	1	6	1	0	29

continued

Table 6.—continued

Forest Survey Unit and County	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Central Hardwood continued											
Rice	0	--	1	--	--	--	--	2	--	--	0
Scott	8	4	1	--	0	--	1	0	39	12	0
Sherburne	21	36	3	--	2	--	1	0	5	7	--
Stearns	13	22	8	--	1	--	0	0	3	2	--
Todd	10	672	10	--	8	--	0	--	1,546	2	--
Wabasha	5	30	46	--	1	--	7	19	58	4	4
Washington	11	11	--	--	0	--	0	0	--	--	1
Winona	6	46	13	--	2	--	8	42	28	14	23
Wright	11	2	4	--	--	--	--	2	18	5	3
Unit Total	580	7,989	671	0	930	17	61	213	2,060	178	86
Prairie											
Big Stone	1	--	--	--	--	--	--	--	7	0	--
Blue Earth	22	--	2	--	--	--	0	16	28	1	--
Brown	9	--	1	--	--	--	3	6	26	1	--
Chippewa	3	--	--	--	--	--	--	0	4	1	--
Clay	2	5	2	--	1	--	--	--	0	1	--
Cottonwood	1	--	0	--	--	--	--	3	--	0	--
Dodge	2	0	6	--	--	--	1	12	--	--	0
Faribault	0	--	6	--	--	--	0	5	--	6	2
Freeborn	5	--	--	--	--	--	1	0	5	--	--
Grant	--	--	0	--	--	--	--	0	--	--	--
Kandiyohi	3	0	3	--	--	--	0	0	1	0	--
Kittson	--	5	--	--	--	--	--	--	--	0	--
Lac Qui Parle	0	--	--	--	--	--	--	--	4	0	--
Lincoln	2	--	--	--	--	--	--	0	4	--	--
Lyon	2	0	--	--	--	--	--	1	2	0	--
Marshall	0	569	--	--	--	--	--	--	--	0	--
Martin	0	--	--	--	--	--	--	0	--	0	--
McLeod	0	--	0	--	--	--	0	--	--	0	--
Meeker	1	--	0	--	--	--	0	0	--	0	--
Mower	4	--	--	--	--	--	0	2	4	0	--
Murray	1	0	--	--	--	--	--	--	2	--	--
Nicollet	25	--	8	--	--	--	3	24	32	5	--
Nobles	0	--	--	--	0	--	--	--	--	--	--
Norman	2	73	2	--	1	--	--	--	0	1	--
Pennington	--	67	--	--	--	--	--	--	--	--	--
Pipestone	1	--	--	--	--	--	--	--	2	--	--
Polk	2	68	2	--	5	--	--	--	0	1	--
Pope	5	5	0	--	--	--	0	0	--	0	--
Red Lake	0	69	--	--	--	--	--	--	0	--	--

continued

Table 6.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Central Hardwood continued						
Rice	2	--	4	3	0	12
Scott	1	3	16	11	3	99
Sherburne	0	18	41	23	4	161
Stearns	4	1	46	17	0	117
Todd	3	0	156	53	0	2,460
Wabasha	24	60	194	134	3	588
Washington	0	1	24	7	3	60
Winona	60	9	334	90	2	676
Wright	0	--	18	19	2	84
Unit Total	1,787	528	3,274	992	44	19,411
Prairie						
Big Stone	0	--	--	--	--	8
Blue Earth	0	3	4	9	0	86
Brown	0	--	3	7	--	55
Chippewa	--	--	--	0	--	7
Clay	1	0	1	3	--	16
Cottonwood	0	0	0	1	--	6
Dodge	6	--	29	1	--	58
Faribault	12	--	8	2	--	42
Freeborn	--	1	6	6	--	23
Grant	--	--	0	0	--	1
Kandiyohi	--	1	0	2	0	12
Kittson	2	0	--	1	--	8
Lac Qui Parle	--	--	--	--	--	4
Lincoln	--	--	--	1	--	7
Lyon	--	0	--	0	--	6
Marshall	--	0	--	1	--	570
Martin	--	--	0	0	--	1
McLeod	--	0	1	1	0	3
Meeker	--	--	0	1	--	3
Mower	--	1	4	2	--	17
Murray	--	--	--	0	--	3
Nicollet	4	3	4	5	--	112
Nobles	--	--	1	--	--	2
Norman	1	0	1	3	--	84
Pennington	--	--	--	0	--	68
Pipestone	--	--	--	0	--	3
Polk	1	0	1	4	--	85
Pope	--	1	27	3	2	44
Red Lake	--	--	--	0	0	70

continued

Table 6.—continued

Forest Survey Unit and County	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Prairie continued											
Redwood	1	0	0	--	--	--	--	0	6	0	--
Renville	2	--	0	--	--	--	--	0	3	--	--
Rock	1	--	--	--	--	--	--	1	2	--	--
Sibley	0	--	--	--	--	--	--	5	--	--	--
Steele	2	0	1	--	--	--	0	1	2	--	--
Stevens	0	--	--	--	--	--	--	0	--	--	--
Swift	3	--	0	--	--	--	--	--	1	0	--
Waseca	0	--	1	--	--	--	--	1	1	2	--
Watonwan	3	0	--	--	--	--	--	13	0	0	--
Unit Total	105	864	35	--	7	--	9	91	136	20	3
State total	3,758	116,191	2,132	0	11,270	125	71	304	2,201	260	94

continued

Table 6.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Prairie continued						
Redwood	--	0	0	1	--	9
Renville	--	--	1	0	--	8
Rock	1	--	--	--	--	5
Sibley	2	--	--	--	--	8
Steele	--	0	3	3	--	11
Stevens	--	0	--	--	--	0
Swift	--	1	--	0	0	6
Waseca	--	--	2	5	--	11
Watsonwan	0	--	1	6	--	23
Unit Total	29	12	101	70	3	1,485
State total	8,750	1,840	4,802	1,558	58	153,412

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table 7.—Industrial roundwood production by Forest Inventory Unit, species group, and type of product, Minnesota, 2010

ALL UNITS									
	All products	Type of product							
		Saw logs		Veneer logs		Pulp mills		EWP ^a mills	
		MCF ^c	MBF ^d	MCF ^c	MBF ^d	MCF ^c	Standard cords	MCF ^c	Standard cords
Softwoods									
Eastern redcedar	16	43	9	--	--	--	--	--	--
Northern white-cedar	445	1,326	268	--	--	969	76	--	--
Balsam fir	11,792	3,445	696	--	--	138,403	10,851	2,234	175
Jack pine	12,097	38,855	7,849	--	--	46,823	3,671	5,058	397
Red pine	20,666	85,684	14,772	--	--	31,385	2,473	16,848	1,328
White pine	1,607	3,927	677	--	--	8,413	663	--	--
Other pine	789	3	1	--	--	9,861	773	--	--
Spruce	20,800	8,896	1,797	--	--	240,945	18,890	--	--
Tamarack	4,444	501	101	--	--	27,341	2,144	7,264	569
Total	72,656	142,681	26,169	--	--	504,139	39,540	31,404	2,469
Hardwoods									
Ash	3,758	4,787	784	98	16	22,844	1,800	1,126	89
Aspen	116,191	24,504	4,413	1,904	310	1,034,138	81,387	345,456	27,190
Basswood	2,132	6,010	984	143	23	6,362	501	3,185	251
Beech	0	2	0	--	--	--	--	--	--
White birch	11,270	7,125	1,167	3,788	617	64,335	5,070	44,142	3,478
Yellow birch	125	221	36	0	0	889	70	--	--
Black cherry	71	270	44	126	20	--	--	--	--
Black walnut	304	1,600	262	257	42	--	--	--	--
Cottonwood	2,201	2,323	380	16	3	22,554	1,777	--	--
Elm	260	1,293	212	2	0	--	--	--	--
Hickory	94	389	64	175	28	--	--	--	--
Hard maple	8,750	4,262	698	649	106	85,573	6,743	12,379	975
Soft maple	1,840	2,669	437	--	--	7,444	587	5,723	451
Red oak	4,802	23,321	4,310	1,179	192	139	11	--	--
White oak	1,558	6,809	1,258	112	18	20	2	--	--
Other hardwoods	58	59	10	152	25	--	--	--	--
Total	153,412	85,643	15,060	8,601	1,400	1,244,298	97,947	412,012	32,435
State total	226,068	228,324	41,230	8,601	1,400	1,748,437	137,488	443,416	34,904

continued

Table 7.—continued

	ALL UNITS, continued							
	Type of product							
	Cabin logs	Industrial fuelwood		Poles		Posts		Other products ^b
	MCF ^c	Standard cords	MCF ^c	Pieces	MCF ^c	M pieces ^e	MCF ^c	MCF ^c
Softwoods								
Eastern redcedar	--	95	7	--	--	0	0	1
Northern white-cedar	19	1,047	73	438	2	9	7	--
Balsam fir	--	996	70	--	--	--	--	--
Jack pine	0	1,507	106	--	--	--	--	75
Red pine	65	4,622	324	25,275	152	448	358	1,195
White pine	17	1,892	132	540	3	8	6	108
Other pine	--	122	9	--	--	--	--	7
Spruce	--	1,515	106	--	--	--	--	7
Tamarack	--	15,417	1,079	--	--	1	0	550
Total	101	27,212	1,905	26,252	157	466	372	1,942
Hardwoods								
Ash	--	14,529	1,017	--	--	--	--	52
Aspen	--	17,131	1,199	--	--	--	--	1,692
Basswood	--	3,175	222	--	--	--	--	149
Beech	--	--	--	--	--	--	--	--
White birch	--	10,851	760	--	--	--	--	179
Yellow birch	--	262	18	--	--	--	--	--
Black cherry	--	74	5	--	--	--	--	1
Black walnut	--	--	--	--	--	--	--	--
Cottonwood	--	345	24	--	--	--	--	16
Elm	--	630	44	--	--	--	--	4
Hickory	--	23	2	--	--	--	--	--
Hard maple	--	3,158	221	--	--	--	--	6
Soft maple	--	4,764	333	--	--	--	--	32
Red oak	0	3,475	243	--	--	--	--	46
White oak	0	2,447	171	--	--	--	--	108
Other hardwoods	--	312	22	--	--	--	--	2
Total	0	61,176	4,282	--	--	--	--	2,287
State total	101	88,388	6,187	26,252	157	466	372	4,229

continued

Table 7.—continued

ASPEN-BIRCH UNIT									
	Type of product								
	All products	Saw logs		Veneer logs		Pulp mills		EWP ^a mills	
	MCF ^c	MBF ^d	MCF ^c	MBF ^d	MCF ^c	Standard cords	MCF ^c	Standard cords	MCF ^c
Softwoods									
Northern white-cedar	370	1,186	240	--	--	660	52	--	--
Balsam fir	6,513	900	182	--	--	78,511	6,155	1,835	144
Jack pine	4,278	8,466	1,710	--	--	31,734	2,488	278	22
Red pine	5,288	22,028	3,798	--	--	14,590	1,150	1,149	91
White pine	766	1,578	272	--	--	4,912	387	--	--
Other pine	365	--	--	--	--	4,651	365	--	--
Spruce	14,566	5,051	1,020	--	--	171,910	13,478	--	--
Tamarack	2,217	160	32	--	--	16,280	1,276	70	6
Total	34,363	39,370	7,254	--	--	323,249	25,351	3,331	262
Hardwoods									
Ash	1,662	885	145	13	2	11,843	933	645	51
Aspen	42,036	5,641	1,016	1,586	258	419,666	33,028	87,341	6,876
Basswood	382	439	72	9	1	960	76	1,573	124
White birch	4,678	1,229	201	3,351	546	32,679	2,575	10,334	814
Yellow birch	72	102	17	--	--	507	40	--	--
Black cherry	0	1	0	--	--	--	--	--	--
Elm	20	37	6	--	--	--	--	--	--
Hard maple	3,105	585	96	162	26	29,816	2,349	6,330	499
Soft maple	687	122	20	--	--	4,846	382	1,482	117
Red oak	97	410	76	3	1	--	--	--	--
White oak	46	99	18	2	0	--	--	--	--
Other hardwoods	2	0	0	--	--	--	--	--	--
Total	52,787	9,549	1,667	5,127	835	500,317	39,383	107,706	8,481
Unit total	87,150	48,919	8,921	5,127	835	823,566	64,734	111,037	8,743

continued

Table 7.—continued

ASPEN-BIRCH UNIT, continued								
	Type of product							
	Cabin logs	Industrial fuelwood		Poles		Posts		Other products ^b
	MCF ^c	Standard cords	MCF ^c	Pieces	MCF ^c	M pieces ^e	MCF ^c	MCF ^c
Softwoods								
Northern white-cedar	15	763	53	438	2	9	7	--
Balsam fir	--	452	32	--	--	--	--	--
Jack pine	--	838	59	--	--	--	--	--
Red pine	26	1,621	113	11,159	67	54	44	--
White pine	12	1,318	92	172	1	2	2	--
Other pine	--	8	1	--	--	--	--	--
Spruce	--	936	66	--	--	--	--	2
Tamarack	--	9,768	684	--	--	--	--	219
Total	54	15,704	1,099	11,769	70	66	52	221
Hardwoods								
Ash	--	7,579	531	--	--	--	--	--
Aspen	--	9,856	690	--	--	--	--	168
Basswood	--	1,220	85	--	--	--	--	24
White birch	--	7,064	494	--	--	--	--	47
Yellow birch	--	221	15	--	--	--	--	--
Black cherry	--	--	--	--	--	--	--	--
Elm	--	201	14	--	--	--	--	0
Hard maple	--	1,919	134	--	--	--	--	0
Soft maple	--	2,405	168	--	--	--	--	--
Red oak	--	287	20	--	--	--	--	--
White oak	--	396	28	--	--	--	--	--
Other hardwoods	--	18	1	--	--	--	--	1
Total	--	31,166	2,182	--	--	--	--	240
Unit total	54	46,869	3,281	11,769	70	66	52	461

continued

Table 7.—continued

NORTHERN PINE UNIT									
	All products	Type of product							
		Saw logs		Veneer logs		Pulp mills		EWP ^a mills	
		MCF ^c	MBF ^d	MCF ^c	MBF ^d	MCF ^c	Standard cords	MCF ^c	Standard cords
Softwoods									
Northern white-cedar	73	139	28	--	--	285	22	--	--
Balsam fir	5,221	2,534	512	--	--	59,704	4,681	--	--
Jack pine	7,411	29,031	5,864	--	--	13,772	1,080	4,781	375
Red pine	14,190	60,846	10,490	--	--	13,168	1,038	14,996	1,182
White pine	624	1,791	309	--	--	2,936	231	--	--
Other pine	225	--	--	--	--	2,872	225	--	--
Spruce	6,064	3,732	754	--	--	67,436	5,287	--	--
Tamarack	2,084	287	58	--	--	11,061	867	6,412	503
Total	35,892	98,360	18,015	--	--	171,233	13,431	26,189	2,059
Hardwoods									
Ash	1,412	2,115	346	23	4	10,154	800	--	--
Aspen	65,302	16,098	2,899	275	45	553,639	43,571	226,797	17,849
Basswood	1,043	2,809	460	27	4	4,711	371	618	49
White birch	5,654	4,914	805	336	55	25,813	2,034	31,508	2,483
Yellow birch	35	34	5	0	0	351	28	--	--
Black cherry	0	0	0	--	--	--	--	--	--
Cottonwood	5	9	1	--	--	--	--	--	--
Elm	43	226	37	--	--	--	--	--	--
Hickory	5	32	5	--	--	--	--	--	--
Hard maple	3,828	1,124	184	151	25	40,934	3,226	4,422	348
Soft maple	613	808	132	--	--	1,829	144	3,486	275
Red oak	1,330	6,906	1,276	133	22	--	--	--	--
White oak	450	2,267	419	23	4	--	--	--	--
Other hardwoods	9	35	6	14	2	--	--	--	--
Total	79,730	37,375	6,577	982	160	637,431	50,174	266,831	21,004
Unit total	115,622	135,736	24,592	982	160	808,664	63,605	293,020	23,063

continued

Table 7.—continued

NORTHERN PINE UNIT, continued								
	Type of product							
	Cabin logs	Industrial fuelwood		Poles		Posts		Other products ^b
	MCF ^c	Standard cords	MCF ^c	Pieces	MCF ^c	M pieces ^e	MCF ^c	MCF ^c
Softwoods								
Northern white-cedar	3	284	20	--	--	--	--	--
Balsam fir	--	402	28	--	--	--	--	--
Jack pine	--	470	33	--	--	--	--	59
Red pine	34	1,952	137	10,629	64	330	264	983
White pine	4	380	27	67	0	--	--	53
Other pine	--	--	--	--	--	--	--	--
Spruce	--	285	20	--	--	--	--	3
Tamarack	--	4,677	327	--	--	--	--	328
Total	41	8,450	591	10,696	64	330	264	1,427
Hardwoods								
Ash	--	3,680	258	--	--	--	--	4
Aspen	--	4,498	315	--	--	--	--	623
Basswood	--	867	61	--	--	--	--	98
White birch	--	3,310	232	--	--	--	--	46
Yellow birch	--	30	2	--	--	--	--	--
Black cherry	--	1	0	--	--	--	--	--
Cottonwood	--	50	3	--	--	--	--	--
Elm	--	82	6	--	--	--	--	0
Hickory	--	--	--	--	--	--	--	--
Hard maple	--	630	44	--	--	--	--	1
Soft maple	--	668	47	--	--	--	--	15
Red oak	--	417	29	--	--	--	--	3
White oak	--	361	25	--	--	--	--	2
Other hardwoods	--	13	1	--	--	--	--	--
Total	--	14,605	1,022	--	--	--	--	792
Unit total	41	23,055	1,614	10,696	64	330	264	2,219

continued

Table 7.—continued

CENTRAL HARDWOOD UNIT									
	All products	Type of product							
		Saw logs		Veneer logs		Pulp mills		EWP ^a mills	
		MCF ^c	MBF ^d	MCF ^c	MBF ^d	MCF ^c	Standard cords	MCF ^c	Standard cords
Softwoods									
Eastern redcedar	11	17	3	--	--	--	--	--	--
Northern white-cedar	2	--	--	--	--	24	2	--	--
Balsam fir	58	11	2	--	--	188	15	400	31
Jack pine	408	1,358	274	--	--	1,317	103	--	--
Red pine	1,187	2,808	484	--	--	3,628	286	696	55
White pine	210	518	89	--	--	564	44	--	--
Other pine	199	3	1	--	--	2,337	183	--	--
Spruce	165	95	19	--	--	1,590	125	--	--
Tamarack	139	51	10	--	--	--	--	745	58
Total	2,379	4,860	883	--	--	9,648	758	1,841	145
Hardwoods									
Ash	580	1,236	203	27	4	847	67	481	38
Aspen	7,989	2,584	465	42	7	60,273	4,743	21,387	1,683
Basswood	671	2,595	425	76	12	690	54	993	78
Beech	0	2	0	--	--	--	--	--	--
White birch	930	963	158	101	17	5,842	460	2,246	177
Yellow birch	17	86	14	0	0	32	2	--	--
Black cherry	61	219	36	120	20	--	--	--	--
Black walnut	213	1,223	200	76	12	--	--	--	--
Cottonwood	2,060	1,505	247	--	--	22,554	1,777	--	--
Elm	178	915	150	1	0	--	--	--	--
Hickory	86	343	56	173	28	--	--	--	--
Hard maple	1,787	2,440	400	271	44	14,823	1,168	1,628	128
Soft maple	528	1,683	276	--	--	770	61	756	60
Red oak	3,274	15,468	2,858	1,033	168	139	11	--	--
White oak	992	4,100	758	78	13	20	2	--	--
Other hardwoods	44	20	3	138	22	--	--	--	--
Total	19,411	35,381	6,249	2,136	348	105,989	8,346	27,491	2,164
Unit total	21,790	40,242	7,132	2,136	348	115,637	9,104	29,332	2,309

continued

Table 7.—continued

CENTRAL HARDWOOD UNIT, continued								
	Type of product							
	Cabin logs	Industrial fuelwood		Poles		Posts		Other products ^b
	MCF ^c	Standard cords	MCF ^c	Pieces	MCF ^c	M pieces ^e	MCF ^c	MCF ^c
Softwoods								
Eastern redcedar	--	95	7	--	--	0	0	1
Northern white-cedar	--	--	--	--	--	--	--	--
Balsam fir	--	142	10	--	--	--	--	--
Jack pine	0	200	14	--	--	--	--	16
Red pine	5	1,049	73	3,487	21	64	51	212
White pine	1	195	14	301	2	6	5	55
Other pine	--	113	8	--	--	--	--	7
Spruce	--	293	21	--	--	--	--	1
Tamarack	--	973	68	--	--	--	--	3
Total	6	3,059	214	3,787	23	70	56	294
Hardwoods								
Ash	--	3,147	220	--	--	--	--	48
Aspen	--	2,700	189	--	--	--	--	901
Basswood	--	1,050	73	--	--	--	--	28
Beech	--	--	--	--	--	--	--	--
White birch	--	477	33	--	--	--	--	85
Yellow birch	--	11	1	--	--	--	--	--
Black cherry	--	74	5	--	--	--	--	1
Black walnut	--	--	--	--	--	--	--	--
Cottonwood	--	282	20	--	--	--	--	16
Elm	--	336	23	--	--	--	--	4
Hickory	--	23	2	--	--	--	--	--
Hard maple	--	609	43	--	--	--	--	5
Soft maple	--	1,646	115	--	--	--	--	17
Red oak	0	2,771	194	--	--	--	--	42
White oak	0	1,622	114	--	--	--	--	107
Other hardwoods	--	248	17	--	--	--	--	1
Total	0	14,994	1,050	--	--	--	--	1,255
Unit total	6	18,052	1,264	3,787	23	70	56	1,549

continued

Table 7.—continued

PRAIRIE									
	All products	Type of product							
		Saw logs		Veneer logs		Pulp mills		EWP ^a mills	
		MCF ^c	MBF ^d	MCF ^c	MBF ^d	MCF ^c	Standard cords	MCF ^c	Standard cords
Softwoods									
Eastern redcedar	5	26	5	--	--	--	--	--	--
Jack pine	0	0	0	--	--	--	--	--	--
Red pine	1	3	0	--	--	--	--	7	1
White pine	7	40	7	--	--	--	--	--	--
Spruce	4	19	4	--	--	8	1	--	--
Tamarack	4	3	1	--	--	--	--	37	3
Total	22	91	17	--	--	8	1	43	3
Hardwoods									
Ash	105	551	90	35	6	--	--	--	--
Aspen	864	182	33	--	--	560	44	9,930	781
Basswood	35	168	27	32	5	--	--	--	--
White birch	7	19	3	--	--	--	--	53	4
Black cherry	9	50	8	5	1	--	--	--	--
Black walnut	91	377	62	181	29	--	--	--	--
Cottonwood	136	808	132	16	3	--	--	--	--
Elm	20	115	19	1	0	--	--	--	--
Hickory	3	14	2	1	0	--	--	--	--
Hard maple	29	114	19	65	11	--	--	--	--
Soft maple	12	56	9	--	--	--	--	--	--
Red oak	101	536	99	10	2	--	--	--	--
White oak	70	343	63	9	1	--	--	--	--
Other hardwoods	3	4	1	--	--	--	--	--	--
Total	1,485	3,337	568	356	58	560	44	9,983	786
Unit total	1,506	3,428	585	356	58	569	45	10,027	789

continued

Table 7.—continued

PRAIRIE, continued								
	Type of product							
	Cabin logs	Industrial fuelwood		Poles		Posts		Other products ^b
	MCF ^c	Standard cords	MCF ^c	Pieces	MCF ^c	M pieces ^e	MCF ^c	MCF ^c
Softwoods								
Eastern redcedar	--	--	--	--	--	--	--	--
Jack pine	--	--	--	--	--	--	--	--
Red pine	--	--	--	--	--	--	--	--
White pine	--	--	--	--	--	--	--	--
Spruce	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	1	0	--
Total	--	--	--	--	--	1	0	--
Hardwoods								
Ash	--	124	9	--	--	--	--	--
Aspen	--	77	5	--	--	--	--	--
Basswood	--	39	3	--	--	--	--	--
White birch	--	--	--	--	--	--	--	--
Black cherry	--	1	0	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Cottonwood	--	13	1	--	--	--	--	--
Elm	--	12	1	--	--	--	--	--
Hickory	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--
Soft maple	--	46	3	--	--	--	--	--
Red oak	--	0	0	--	--	--	--	--
White oak	--	69	5	--	--	--	--	--
Other hardwoods	--	33	2	--	--	--	--	--
Total	--	412	29	--	--	--	--	--
Unit total	--	412	29	--	--	1	0	--

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1 unit.

Columns and rows may not add to their totals due to rounding.

^aEngineered wood product.

^bIncludes handles, mine timbers, excelsior/shavings, cooperage, and other miscellaneous products.

^cThousand cubic feet.

^dThousand board feet, International ¼-inch rule.

^eThousand pieces.

Table 8.—Saw log receipts and production, in thousand board feet (International ¼-inch rule), by species group, Minnesota, 2007 and 2010

Species group	Receipts			Production		
	2007	2010	Percent Change	2007	2010	Percent Change
Softwoods						
Baldcypress	8	8	0%	--	--	--
Eastern redcedar	104	43	-58%	104	43	-58%
Northern white-cedar	2,554	1,321	-48%	2,554	1,326	-48%
Balsam fir	5,546	3,246	-41%	5,661	3,445	-39%
Jack pine	48,825	43,983	-10%	43,665	38,855	-11%
Red pine	74,262	89,711	21%	67,371	85,684	27%
White pine	4,417	3,885	-12%	3,708	3,927	6%
Other pine	5	3	-50%	5	3	-50%
Spruce	13,274	8,799	-34%	12,242	8,896	-27%
Tamarack	1,213	501	-59%	1,213	501	-59%
Total	150,206	151,499	1%	136,523	142,681	5%
Hardwoods						
Ash	4,120	4,538	10%	4,295	4,787	11%
Aspen	24,352	24,907	2%	21,689	24,504	13%
Basswood	9,772	5,732	-41%	10,060	6,010	-40%
Beech	--	--	--	87	2	-97%
White birch	10,771	7,104	-34%	10,679	7,125	-33%
Yellow birch	2	45	2,182%	2	221	11,099%
Black cherry	71	102	44%	207	270	30%
Black walnut	1,392	540	-61%	1,422	1,600	12%
Cottonwood	5,015	2,232	-55%	4,725	2,323	-51%
Elm	658	1,259	91%	765	1,293	69%
Hickory	215	189	-12%	474	389	-18%
Hard maple	2,484	2,568	3%	3,177	4,262	34%
Soft maple	1,229	1,874	52%	1,508	2,669	77%
Red oak	23,155	18,954	-18%	30,289	23,321	-23%
White oak	5,898	5,319	-10%	7,690	6,809	-11%
Other hardwoods	223	60	-73%	228	59	-74%
Total	89,357	75,423	-16%	97,299	85,643	-12%
State total	239,564	226,921	-5%	233,822	228,324	-2%

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 board feet. Columns and rows may not add to their totals due to rounding.

Table 9.—Saw log receipts, in thousand board feet (International ¼-inch rule), by species group and place of origin, Minnesota, 2010

	Total	U.S. State or Country of origin								
		Florida	Illinois	Iowa	Minnesota	Nebraska	North Dakota	South Dakota	Wisconsin	Canada
Softwoods										
Baldcypress	8	8	--	--	--	--	--	--	--	--
Eastern redcedar	43	--	--	--	43	--	--	--	--	--
Northern white-cedar	1,321	--	--	--	1,321	--	--	--	--	--
Balsam fir	3,246	--	--	--	3,246	--	--	--	--	--
Jack pine	43,983	--	--	--	37,227	--	--	--	3,227	3,528
Red pine	89,711	--	--	--	83,855	--	4	--	5,851	--
White pine	3,885	--	--	--	3,774	--	--	--	111	--
Other pine	3	--	--	--	3	--	--	--	--	--
Spruce	8,799	--	--	--	8,183	--	--	--	--	617
Tamarack	501	--	--	--	501	--	--	--	--	--
Total	151,499	8	--	--	138,153	--	4	--	9,189	4,145
Hardwoods										
Ash	4,538	--	--	6	4,352	6	2	6	166	--
Aspen	24,907	--	--	--	24,158	--	8	--	479	263
Basswood	5,732	--	--	--	5,627	--	23	--	83	--
White birch	7,104	--	--	--	6,841	--	--	--	263	--
Yellow birch	45	--	--	--	45	--	--	--	--	--
Black cherry	102	--	5	--	95	--	--	--	2	--
Black walnut	540	--	--	6	521	5	--	5	4	--
Cottonwood	2,232	--	--	10	2,181	10	0	10	22	--
Elm	1,259	--	--	--	1,209	--	--	--	49	--
Hickory	189	--	4	2	183	--	--	--	--	--
Hard maple	2,568	--	--	141	2,376	4	--	4	43	--
Soft maple	1,874	--	--	4	1,755	--	--	--	115	--
Red oak	18,954	--	--	95	18,439	--	--	--	420	--
White oak	5,319	--	--	29	5,192	--	3	--	96	--
Other hardwoods	60	--	--	--	58	--	--	--	2	--
Total	75,423	--	9	292	73,031	25	35	25	1,743	263
State total	226,921	8	9	292	211,185	25	39	25	10,933	4,408

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 board feet. Columns and rows may not add to their totals due to rounding.

Table 10.—Saw log production, in thousand board feet (International ¼-inch rule), by species group and location of mill, Minnesota, 2010

	Total	U.S. State or Country of mill				
		Iowa	Minnesota	North Dakota	Wisconsin	Canada
Softwoods						
Eastern redcedar	43	--	43	--	--	--
Northern white-cedar	1,326	--	1,321	5	--	--
Balsam fir	3,445	--	3,246	--	--	199
Jack pine	38,855	--	37,227	--	18	1,610
Red pine	85,684	--	83,855	--	1,107	722
White pine	3,927	--	3,774	--	153	--
Other pine	3	--	3	--	--	--
Spruce	8,896	--	8,183	--	41	672
Tamarack	501	--	501	--	--	--
Total	142,681	--	138,153	5	1,319	3,203
Hardwoods						
Ash	4,787	16	4,352	--	419	--
Aspen	24,504	54	24,158	--	293	--
Basswood	6,010	56	5,627	--	326	--
Beech	2	--	--	--	2	--
White birch	7,125	--	6,841	--	284	--
Yellow birch	221	--	45	--	176	--
Black cherry	270	56	95	--	118	--
Black walnut	1,600	19	521	--	1,060	--
Cottonwood	2,323	136	2,181	--	6	--
Elm	1,293	36	1,209	--	47	--
Hickory	389	77	183	--	129	--
Hard maple	4,262	94	2,376	--	1,792	--
Soft maple	2,669	86	1,755	--	828	--
Red oak	23,321	2,118	18,439	--	2,764	--
White oak	6,809	697	5,192	--	920	--
Other hardwoods	59	--	58	--	1	--
Total	85,643	3,445	73,031	--	9,166	
State total	228,324	3,445	211,185	5	10,485	3,203

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 board feet. Columns and rows may not add to their totals due to rounding.

Table 11.—Pulpwood and engineered wood product roundwood and mill residue receipts, in standard cords, by species group and place of origin, Minnesota, 2010

	U.S. State or Country of origin									
	Total		Michigan		Minnesota		Wisconsin		Canada	
	Pulpwood	EWP ^a	Pulpwood	EWP ^a	Pulpwood	EWP ^a	Pulpwood	EWP ^a	Pulpwood	EWP ^a
Softwood Roundwood										
Northern White-Cedar	996	--	--	--	969	--	27	--	--	--
Balsam Fir	160,833	3,518	74	--	136,220	2,234	24,443	1,283	97	--
Jack Pine	26,567	5,058	--	--	26,374	5,058	--	--	193	--
Red Pine	16,552	17,270	--	--	16,538	16,848	14	422	--	--
Eastern White Pine	5,161	--	--	--	5,161	--	--	--	--	--
Pine	11,118	228	--	--	9,856	--	1,262	228	--	--
Spruce	191,447	277	--	--	187,462	--	2,080	277	1,905	--
Tamarack	19,592	7,264	--	--	19,324	7,264	--	--	268	--
Total	432,266	33,614	74	--	401,905	31,404	27,825	2,210	2,463	--
Hardwood Roundwood										
Ash	22,651	1,126	890	--	17,732	1,126	4,028	--	--	--
Aspen	1,099,106	317,974	2,226	--	1,033,121	300,603	57,252	4,375	6,508	12,996
Basswood	7,734	1,574	165	--	6,151	1,574	1,418	--	--	--
Paper Birch	58,356	46,917	--	--	56,842	44,142	1,506	2,775	7	--
Yellow Birch	580	--	--	--	580	--	--	--	--	--
Cottonwood	22,554	--	--	--	22,554	--	--	--	--	--
Hard Maple	290,119	14,441	55,313	--	79,865	12,379	154,941	2,062	--	--
Soft Maple	--	6,148	--	--	--	5,723	--	425	--	--
Total	1,501,100	388,180	58,594	--	1,216,846	365,548	219,145	9,636	6,515	12,996
State Roundwood Total	1,933,366	421,794	58,668	--	1,618,750	396,953	246,970	11,846	8,978	12,996
Mill Residues										
Softwoods	64,923	798	--	--	64,923	56	--	741	--	--
Hardwoods	9,891	2,803	--	--	9,891	610	--	2,193	--	--
Total	74,814	3,600	--	--	74,814	666	--	2,934	--	--
State Total - All Receipts	2,008,180	425,394	58,668	--	1,693,565	397,619	246,970	14,780	8,978	12,996

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1 standard cord. Columns and rows may not add to their totals due to rounding.

^a Engineered wood product

Table 12.—Pulpwood and engineered wood product roundwood and mill residue production, in standard cords, by species group and place of mill, Minnesota, 2010

	U.S. State or Country of mill							
	Total		Minnesota		Wisconsin		Canada	
	Pulpwood	EWP ^a	Pulpwood	EWP ^a	Pulpwood	EWP ^a	Pulpwood	EWP ^a
Softwood Roundwood								
Northern white-cedar	969	--	969	--	--	--	--	--
Balsam fir	138,403	2,234	136,220	2,234	1,303	--	880	--
Jack pine	46,823	5,058	26,374	5,058	13,206	--	7,242	--
Red pine	31,385	16,848	16,538	16,848	14,847	--	--	--
White pine	8,413	--	5,161	--	3,251	--	--	--
Other pine	9,861	--	9,856	--	5	--	--	--
Spruce	240,945	--	187,462	--	52,561	--	922	--
Tamarack	27,341	7,264	19,324	7,264	798	--	7,219	--
Total	504,139	31,404	401,905	31,404	85,971	--	16,263	--
Hardwood Roundwood								
Ash	22,844	1,126	17,732	1,126	5,112	--	--	--
Aspen	1,034,138	345,456	1,033,121	300,603	1,017	22,147	--	22,706
Basswood	6,362	3,185	6,151	1,574	211	1,611	--	--
White birch	64,335	44,142	56,842	44,142	7,492	--	--	--
Yellow birch	889	--	580	--	309	--	--	--
Cottonwood	22,554	--	22,554	--	--	--	--	--
Hard maple	85,573	12,379	79,865	12,379	5,708	--	--	--
Soft maple	7,444	5,723	--	5,723	7,444	--	--	--
Red oak	139	--	--	--	139	--	--	--
White oak	20	--	--	--	20	--	--	--
Total	1,244,298	412,012	1,216,846	365,548	27,452	23,757	--	22,706
State Roundwood Total	1,748,437	443,416	1,618,750	396,953	113,424	23,757	16,263	22,706
Mill Residues								
Softwoods	97,286	56	64,923	56	--	--	32,363	--
Hardwoods	14,324	610	9,891	610	3,855	--	578	--
Total	111,610	666	74,814	666	3,855	--	32,941	--
State Total - All Production	1,860,047	444,082	1,693,565	397,619	117,279	23,757	49,204	22,706

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1 standard cord. Columns and rows may not add to their totals due to rounding.

^a Engineered wood product

Table 13.—Wood material harvested for industrial roundwood, in thousand cubic feet, by source of material and species group, Minnesota, 2010^a

Species group	Source of material												
	Growing stock				Non-growing stock								
	Used for products		Logging residue ^b (not used)	Total growing stock	Used for products			Logging slash ^b (not used)	Total non-growing stock	Total wood material used	Total wood material not used	Total wood material harvested	
	Sawtimber	Pole-timber			Limb-wood ^b	Saplings ^b	Cull trees ^b						Dead trees ^b
Softwoods													
Eastern redcedar	10	4	1	14	2	0	1	0	5	9	16	6	23
Northern white-cedar	318	81	26	425	29	0	12	5	205	251	445	231	676
Balsam fir	7,506	3,835	284	11,625	424	0	15	11	5,731	6,181	11,792	6,015	17,806
Jack pine	9,526	2,074	755	12,356	276	0	96	124	6,460	6,956	12,097	7,215	19,312
Red pine	18,105	1,788	705	20,598	342	13	301	117	7,443	8,216	20,666	8,148	28,814
White pine	1,224	259	49	1,532	63	1	42	19	553	676	1,607	602	2,209
Other pine	488	269	17	775	30	0	1	0	375	406	789	392	1,181
Spruce	13,395	6,616	538	20,548	730	0	30	28	10,164	10,953	20,800	10,702	31,502
Tamarack	2,327	1,565	149	4,041	437	3	109	2	1,455	2,006	4,444	1,603	6,047
Total	52,901	16,491	2,523	71,915	2,334	18	605	306	32,391	35,655	72,656	34,914	107,570
Hardwoods													
Ash	1,693	1,473	262	3,429	375	3	213	--	1,453	2,044	3,758	1,715	5,472
Aspen	79,995	30,930	6,510	117,435	1,475	13	3,770	8	47,456	52,723	116,191	53,967	170,158
Basswood	1,336	610	296	2,242	96	1	89	--	948	1,133	2,132	1,243	3,375
Beech	0	0	0	0	0	--	0	--	0	0	0	0	1
White birch	5,161	5,066	721	10,948	478	4	562	0	5,230	6,273	11,270	5,951	17,221
Yellow birch	63	48	11	121	8	0	6	--	57	71	125	67	192
Black cherry	59	6	14	79	2	0	4	--	31	36	71	44	115
Black walnut	269	21	67	357	2	--	12	--	156	170	304	222	526
Cottonwood	1,038	1,010	154	2,202	57	0	95	--	1,120	1,272	2,201	1,274	3,475
Elm	200	34	49	284	15	0	11	--	118	144	260	168	428
Hickory	82	6	19	107	1	0	5	--	44	49	94	63	156
Hard maple	3,732	4,331	452	8,515	280	1	406	--	4,372	5,059	8,750	4,825	13,574
Soft maple	881	729	145	1,755	135	1	94	--	788	1,018	1,840	933	2,773
Red oak	3,177	128	978	4,283	154	1	1,324	19	3,017	4,514	4,802	3,995	8,797
White oak	996	75	292	1,363	81	0	400	5	894	1,381	1,558	1,186	2,744
Other hardwoods	37	9	7	53	7	0	5	--	14	26	58	21	79
Total	98,718	44,476	9,978	153,172	3,166	24	6,996	33	65,696	75,914	153,412	75,674	229,087
State Total	151,619	60,967	12,501	225,087	5,500	41	7,602	339	98,087	111,569	226,068	110,588	336,656

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 cubic feet. Columns and rows may not add to their totals due to rounding.

^a Estimates are based on factors obtained from regional utilization studies applied to roundwood received

^b Estimates

Table 14.—Growing-stock removals from timberland for industrial roundwood, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Minnesota, 2010

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Aspen-Birch											
Carlton	8,836	--	29	194	161	906	53	217	189	37	1,786
Cook	3,330	--	2	110	292	556	43	--	574	0	1,577
Koochiching	23,136	--	225	2,316	733	834	54	--	6,433	1,058	11,653
Lake	7,509	--	11	680	572	498	63	2	1,721	54	3,601
St. Louis	42,978	--	90	3,112	2,535	2,411	493	141	5,461	797	15,040
Unit Total	85,789	--	357	6,411	4,293	5,205	706	359	14,378	1,947	33,657
Northern Pine											
Aitkin	11,918	--	16	405	244	535	57	82	314	123	1,776
Becker	3,722	--	--	266	315	458	5	--	68	68	1,180
Beltrami	17,215	--	17	767	523	1,331	85	12	804	415	3,954
Cass	17,134	--	11	366	1,328	3,545	94	28	151	229	5,753
Clearwater	4,845	--	--	159	33	142	8	--	139	8	489
Crow Wing	5,961	--	1	37	490	917	49	62	41	8	1,605
Hubbard	10,210	--	--	262	1,078	2,433	9	2	151	120	4,055
Itasca	33,485	--	19	2,530	1,676	3,627	299	36	3,256	619	12,062
Lake of the Woods	6,592	--	2	248	721	257	1	--	904	338	2,470
Mahnomen	511	--	--	2	12	9	2	--	18	--	43
Roseau	2,063	--	--	111	308	58	--	--	163	51	690
Wadena	2,457	--	--	7	921	915	1	--	0	--	1,843
Unit Total	116,112	--	66	5,160	7,648	14,225	610	222	6,009	1,979	35,920
Central Hardwood											
Anoka	115	0	--	--	--	20	8	0	0	1	30
Benton	145	0	--	1	--	25	1	13	15	1	55
Carver	46	1	--	--	--	--	--	--	0	--	1
Chisago	234	0	--	--	--	11	8	1	0	0	20
Dakota	128	0	--	--	1	6	5	--	2	--	14
Douglas	468	--	--	--	248	--	--	--	--	--	248
Fillmore	865	--	--	--	--	0	1	--	1	--	2
Goodhue	217	--	2	--	--	2	2	--	0	--	6
Hennepin	72	1	--	--	--	6	2	0	0	1	10
Houston	1,141	--	--	--	--	1	--	--	--	--	1
Isanti	385	0	--	--	1	22	4	3	6	3	38
Kanabec	1,336	--	--	3	1	28	5	0	4	14	55
Le Sueur	55	1	--	--	--	--	--	--	--	--	1
Mille Lacs	1,443	--	--	--	44	139	48	14	1	10	256
Morrison	1,615	1	--	4	1	16	13	3	3	4	44
Olmsted	278	0	--	--	--	1	1	--	2	--	4
Otter Tail	571	--	--	1	--	11	1	--	1	67	81
Pine	7,911	--	--	45	106	669	45	158	106	9	1,138

continued

Table 14.—continued

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Central Hardwood, continued											
Ramsey	59	0	--	--	--	5	9	0	7	1	23
Rice	12	--	--	--	--	--	--	--	--	--	--
Scott	93	1	--	--	--	--	--	--	--	--	1
Sherburne	193	0	--	--	1	70	8	1	1	--	81
Stearns	112	1	--	--	--	2	1	--	0	0	4
Todd	2,519	--	--	--	2	17	2	--	--	--	20
Wabasha	722	--	--	--	10	72	31	--	1	--	114
Washington	78	0	--	--	--	21	2	--	6	0	30
Winona	720	0	--	--	--	21	14	--	1	--	36
Wright	89	0	--	--	--	0	0	--	--	--	1
Unit Total	21,623	9	2	54	415	1,167	210	194	156	111	2,316
Prairie											
Big Stone	10	0	--	--	--	--	--	--	--	--	0
Blue Earth	98	1	--	--	--	--	--	--	--	--	1
Brown	63	0	--	--	--	0	0	--	--	--	0
Chippewa	9	--	--	--	--	--	--	--	--	--	--
Clay	17	--	--	--	--	--	--	--	--	--	--
Cottonwood	6	--	--	--	--	--	--	--	--	--	--
Dodge	60	--	--	--	0	0	0	--	--	--	0
Faribault	48	--	--	--	--	--	--	--	1	--	1
Freeborn	27	--	--	--	--	--	2	--	1	--	3
Grant	1	--	--	--	--	--	--	--	--	--	--
Kandiyohi	10	1	--	--	--	--	--	--	--	--	1
Kittson	5	--	--	--	--	--	--	--	--	--	--
Lac Qui Parle	6	0	--	--	--	--	--	--	--	--	0
Lincoln	8	--	--	--	--	--	--	--	--	--	--
Lyon	7	--	--	--	--	--	--	--	0	--	0
Marshall	579	--	--	--	--	--	--	--	--	4	4
Martin	2	--	--	--	--	--	--	--	--	--	--
McLeod	3	0	--	--	--	--	--	--	--	--	0
Meeker	3	0	--	--	--	--	--	--	--	--	0
Mower	23	0	--	--	--	--	3	--	1	--	5
Murray	4	--	--	--	--	--	--	--	0	--	0
Nicollet	129	1	--	--	--	0	--	--	0	--	1
Nobles	2	--	--	--	--	--	--	--	--	--	--
Norman	86	--	--	--	--	--	--	--	--	--	--
Pennington	69	--	--	--	--	--	--	--	1	--	1
Pipestone	3	--	--	--	--	--	--	--	--	--	--
Polk	87	--	--	--	--	--	--	--	--	--	--
Pope	38	--	--	--	--	0	--	--	--	--	0

continued

Table 14.—continued

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Prairie, continued											
Red Lake	72	--	--	--	--	--	--	--	--	--	--
Redwood	11	--	--	--	--	--	--	--	0	--	0
Renville	10	0	--	--	--	0	0	--	0	--	1
Rock	6	--	--	--	--	--	--	--	--	--	--
Sibley	8	--	--	--	--	--	--	--	--	--	--
Steele	13	--	--	--	--	0	1	--	0	--	2
Stevens	0	--	--	--	--	--	--	--	--	--	--
Swift	4	--	--	--	--	--	--	--	--	--	--
Waseca	13	1	--	--	--	--	--	--	0	--	1
Watonwan	26	--	--	--	--	--	--	--	--	--	--
Unit Total	1,563	6	--	--	0	1	7	--	5	4	22
State total	225,087	14	425	11,605	12,193	20,538	1,532	775	20,480	4,041	71,603

Table 14.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Basswood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Aspen-Birch											
Carlton	199	5,151	70	--	618	11	--	--	--	3	--
Cook	18	1,631	--	--	57	1	--	--	--	--	--
Koochiching	499	10,181	71	--	621	1	--	--	--	5	--
Lake	183	2,410	42	--	576	8	--	--	--	0	--
St. Louis	533	22,772	177	--	2,559	46	0	--	--	7	--
Unit Total	1,432	42,145	359	--	4,431	67	0	--	--	15	--
Northern Pine											
Aitkin	312	6,856	321	--	493	6	0	--	--	16	3
Becker	6	2,068	51	--	292	0	--	--	0	6	--
Beltrami	230	11,448	105	--	912	--	--	--	1	3	--
Cass	143	9,026	164	--	1,060	1	--	--	1	7	1
Clearwater	4	3,851	19	--	362	--	--	--	0	1	--
Crow Wing	56	3,555	78	--	268	2	--	--	0	8	2
Hubbard	8	5,377	20	--	518	--	--	--	1	2	--
Itasca	500	17,720	356	--	1,458	26	--	--	--	5	1
Lake of the Woods	61	3,915	--	--	140	0	--	--	--	--	--
Mahnomen	2	442	2	--	7	--	--	--	0	1	--
Roseau	20	1,308	0	--	45	--	--	--	--	0	--
Wadena	0	593	1	--	6	--	0	--	--	0	--
Unit Total	1,342	66,161	1,117	--	5,561	34	0	--	4	48	6
Central Hardwood											
Anoka	21	8	2	--	2	--	1	0	1	11	--
Benton	4	31	11	--	0	--	0	0	0	1	--
Carver	2	0	--	--	--	--	--	1	22	6	--
Chisago	17	11	13	0	3	2	1	--	7	3	1
Dakota	9	3	7	--	1	--	1	0	42	7	0
Douglas	8	7	25	--	0	--	--	0	137	4	--
Fillmore	8	3	94	--	1	--	13	80	5	30	15
Goodhue	7	32	11	--	0	--	6	15	6	8	4
Hennepin	14	6	2	--	0	--	1	3	1	6	--
Houston	8	19	24	--	0	--	18	66	15	16	33
Isanti	31	106	10	--	107	--	1	--	7	6	1
Kanabec	70	784	90	--	41	2	0	--	0	14	2
Le Sueur	3	--	1	--	--	--	--	2	29	7	--
Mille Lacs	68	646	73	--	52	1	--	--	3	10	1
Morrison	19	1,264	26	--	41	--	0	--	3	4	--
Olmsted	5	3	26	--	--	--	6	7	3	7	5
Otter Tail	10	266	39	--	2	--	--	--	85	--	--
Pine	144	4,124	170	0	682	14	1	--	0	8	2
Ramsey	11	6	2	--	0	--	0	0	5	0	--

continued

Table 14.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Basswood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Central Hardwood, continued											
Rice	0	--	1	--	--	--	--	2	--	--	0
Scott	7	3	1	--	0	--	0	0	45	12	0
Sherburne	14	29	3	--	1	--	1	0	3	6	--
Stearns	12	22	8	--	1	--	0	0	3	2	--
Todd	12	786	12	--	9	--	0	--	1,489	2	--
Wabasha	7	36	54	--	1	--	8	22	70	5	5
Washington	7	9	--	--	0	--	0	0	--	--	1
Winona	7	53	15	--	2	--	9	50	34	16	26
Wright	14	2	5	--	--	--	--	2	21	6	3
Unit Total	536	8,256	725	0	948	20	68	252	2,038	197	98
Prairie											
Big Stone	1	--	--	--	--	--	--	--	9	0	--
Blue Earth	26	--	3	--	--	--	0	19	33	1	--
Brown	11	--	1	--	--	--	3	7	31	1	--
Chippewa	3	--	--	--	--	--	--	0	4	1	--
Clay	2	6	2	--	1	--	--	--	0	1	--
Cottonwood	1	--	0	--	--	--	--	3	--	0	--
Dodge	2	0	7	--	--	--	2	15	--	--	0
Faribault	1	--	7	--	--	--	1	6	--	7	3
Freeborn	6	--	--	--	--	--	1	0	6	--	--
Grant	--	--	0	--	--	--	--	0	--	--	--
Kandiyohi	2	0	2	--	--	--	0	0	1	0	--
Kittson	--	3	--	--	--	--	--	--	--	0	--
Lac Qui Parle	0	--	--	--	--	--	--	--	5	0	--
Lincoln	2	--	--	--	--	--	--	0	4	--	--
Lyon	2	0	--	--	--	--	--	1	3	0	--
Marshall	0	575	--	--	--	--	--	--	--	0	--
Martin	0	--	--	--	--	--	--	0	--	0	--
McLeod	0	--	0	--	--	--	0	--	--	0	--
Meeker	1	--	0	--	--	--	0	0	--	0	--
Mower	4	--	--	--	--	--	0	2	4	0	--
Murray	1	0	--	--	--	--	--	--	2	--	--
Nicollet	29	--	9	--	--	--	3	26	38	6	--
Nobles	1	--	--	--	0	--	--	--	--	--	--
Norman	2	74	2	--	1	--	--	--	0	1	--
Pennington	--	68	--	--	--	--	--	--	--	--	--
Pipestone	1	--	--	--	--	--	--	--	2	--	--
Polk	2	69	3	--	5	--	--	--	0	1	--
Pope	4	5	0	--	--	--	0	0	--	0	--
Red Lake	0	70	--	--	--	--	--	--	0	--	--

continued

Table 14.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Basswood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Prairie, continued											
Redwood	1	0	0	--	--	--	--	0	8	0	--
Renville	3	--	0	--	--	--	--	0	4	--	--
Rock	2	--	--	--	--	--	--	1	2	--	--
Sibley	0	--	--	--	--	--	--	6	--	--	--
Steele	2	0	1	--	--	--	0	1	2	--	--
Stevens	0	--	--	--	--	--	--	0	--	--	--
Swift	2	--	0	--	--	--	--	--	0	0	--
Waseca	1	--	1	--	--	--	--	1	1	2	--
Watonwan	3	0	--	--	--	--	--	15	0	0	--
Unit Total	119	872	40	--	8	--	11	105	161	23	3
State total	3,429	117,435	2,242	0	10,948	121	79	357	2,202	284	107

Table 14.—continued

Forest Survey Unit and County	Hardwoods, continued					
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	Total hardwoods
Aspen-Birch						
Carlton	889	60	36	12	0	7,050
Cook	20	26	--	--	--	1,753
Koochiching	64	30	2	8	0	11,483
Lake	558	132	--	0	0	3,908
St. Louis	1,433	354	43	13	1	27,938
Unit Total	2,964	602	80	33	2	52,132
Northern Pine						
Aitkin	1,323	164	552	91	5	10,143
Becker	8	75	26	9	--	2,542
Beltrami	521	1	15	25	0	13,260
Cass	516	112	268	81	1	11,381
Clearwater	39	1	6	72	--	4,355
Crow Wing	135	55	151	44	3	4,356
Hubbard	143	66	14	7	--	6,155
Itasca	1,029	130	151	47	1	21,423
Lake of the Woods	2	3	1	0	--	4,122
Mahnomen	1	0	1	10	--	468
Roseau	--	0	--	1	--	1,373
Wadena	--	0	5	9	--	614
Unit Total	3,715	607	1,189	397	10	80,192
Central Hardwood						
Anoka	1	5	27	6	0	85
Benton	4	1	25	10	3	90
Carver	4	--	5	6	--	46

continued

Table 14.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Central Hardwood, continued						
Chisago	60	22	54	20	0	214
Dakota	0	6	28	8	0	113
Douglas	3	1	29	5	0	220
Fillmore	72	13	479	51	--	863
Goodhue	22	13	57	31	--	212
Hennepin	5	1	14	10	0	61
Houston	61	92	612	173	4	1,140
Isanti	7	22	34	13	4	347
Kanabec	56	53	120	45	4	1,281
Le Sueur	0	0	7	5	--	54
Mille Lacs	52	57	168	52	2	1,186
Morrison	27	5	141	39	1	1,571
Olmsted	14	10	152	33	3	274
Otter Tail	8	3	65	12	--	490
Pine	1,296	133	159	37	1	6,773
Ramsey	1	1	7	1	0	36
Rice	3	--	3	2	0	12
Scott	1	2	12	8	2	92
Sherburne	0	11	28	15	3	112
Stearns	4	1	40	15	0	108
Todd	3	0	139	47	0	2,498
Wabasha	28	71	176	122	3	607
Washington	0	2	20	5	4	48
Winona	71	11	306	82	2	685
Wright	0	--	16	17	2	89
Unit Total	1,802	533	2,922	872	39	19,307
Prairie						
Big Stone	0	--	--	--	--	9
Blue Earth	1	3	4	8	0	97
Brown	0	--	3	6	--	62
Chippewa	--	--	--	0	--	9
Clay	1	0	1	3	--	17
Cottonwood	0	0	0	1	--	6
Dodge	7	--	27	1	--	60
Faribault	14	--	7	2	--	47
Freeborn	--	1	5	5	--	24
Grant	--	--	0	0	--	1
Kandiyohi	--	1	0	2	0	9
Kittson	2	0	--	0	--	5
Lac Qui Parle	--	--	--	--	--	5

continued

Table 14.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Prairie, continued						
Lincoln	--	--	--	1	--	8
Lyon	--	0	--	0	--	7
Marshall	--	0	--	0	--	576
Martin	--	--	0	0	--	2
McLeod	--	0	1	1	0	3
Meeker	--	--	0	1	--	3
Mower	--	1	4	2	--	18
Murray	--	--	--	0	--	3
Nicollet	4	3	4	5	--	127
Nobles	--	--	1	--	--	2
Norman	1	0	1	3	--	86
Pennington	--	--	--	0	--	68
Pipestone	--	--	--	0	--	3
Polk	1	1	1	3	--	87
Pope	--	0	25	2	1	38
Red Lake	--	--	--	0	0	72
Redwood	--	0	0	1	--	10
Renville	--	--	1	0	--	9
Rock	1	--	--	--	--	6
Sibley	2	--	--	--	--	8
Steele	--	0	2	2	--	12
Stevens	--	0	--	--	--	0
Swift	--	1	--	0	0	4
Waseca	--	--	2	5	--	12
Watsonwan	0	--	1	5	--	26
Unit Total	34	13	91	61	2	1,541
State total	8,515	1,755	4,283	1,363	53	153,172

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table 15.—Sawtimber removals from timberland for industrial roundwood, in thousand board feet (International ¼-inch rule), by Forest Inventory Unit, county, and species group, Minnesota, 2010

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Aspen-Birch											
Carlton	25,334	--	69	459	376	4,666	206	506	471	64	6,816
Cook	10,932	--	10	282	1,016	2,720	170	--	1,810	1	6,008
Koochiching	61,062	--	932	5,514	2,188	3,993	271	--	15,335	2,585	30,817
Lake	21,432	--	42	1,620	2,044	2,583	281	4	4,427	92	11,094
St. Louis	119,250	--	282	7,461	7,972	11,522	1,875	329	13,644	1,795	44,880
Unit Total	238,009	--	1,335	15,335	13,596	25,484	2,803	839	35,686	4,536	99,615
Northern Pine											
Aitkin	35,459	--	37	1,021	904	2,671	247	191	839	297	6,206
Becker	11,481	--	--	689	1,273	2,317	27	--	158	165	4,629
Beltrami	47,790	--	63	1,903	1,929	5,257	340	28	2,102	992	12,614
Cass	57,385	--	37	971	5,615	17,343	438	65	458	634	25,562
Clearwater	13,578	--	--	420	103	643	43	--	518	18	1,744
Crow Wing	19,994	--	4	85	2,081	4,864	186	145	95	15	7,476
Hubbard	34,237	--	--	736	4,471	12,020	50	4	448	280	18,010
Itasca	101,194	--	60	6,345	6,332	18,191	1,288	83	8,258	1,543	42,101
Lake of the Woods	18,616	--	11	588	2,398	1,361	4	--	2,207	831	7,401
Mahnomen	1,476	--	--	5	27	42	11	--	43	--	128
Roseau	5,908	--	--	335	1,098	175	--	--	482	124	2,214
Wadena	10,949	--	--	16	4,002	4,808	7	--	0	--	8,833
Unit Total	358,066	--	213	13,112	30,233	69,692	2,641	518	15,609	4,900	136,917
Central Hardwood											
Anoka	450	1	--	--	--	87	36	1	1	3	130
Benton	383	1	--	1	--	77	3	28	35	2	148
Carver	213	2	--	--	--	--	--	--	1	--	3
Chisago	997	0	--	--	--	47	43	2	0	0	93
Dakota	503	0	--	--	2	21	24	--	9	--	56
Douglas	1,674	--	--	--	1,079	--	--	--	--	--	1,079
Fillmore	3,942	--	--	--	--	1	4	--	5	--	10
Goodhue	940	--	4	--	--	11	9	--	2	--	25
Hennepin	320	3	--	--	--	19	7	1	1	3	35
Houston	5,236	--	--	--	--	6	--	--	--	--	6
Isanti	1,300	1	--	--	3	58	14	6	11	4	97
Kanabec	4,116	--	--	7	3	94	13	1	6	23	147
Le Sueur	255	4	--	--	--	--	--	--	--	--	4
Mille Lacs	5,215	--	--	--	154	440	157	36	2	19	808
Morrison	5,445	2	--	6	4	57	52	6	5	7	139
Olmsted	1,248	0	--	--	--	6	5	--	6	--	18
Otter Tail	1,754	--	--	3	--	46	8	--	2	175	235
Pine	21,862	--	--	109	257	2,965	166	369	258	15	4,139

continued

Table 15.—continued

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Central Hardwood, continued											
Ramsey	269	1	--	--	--	17	48	1	29	3	99
Rice	58	--	--	--	--	--	--	--	--	--	--
Scott	364	2	--	--	--	--	--	--	--	--	2
Sherburne	548	1	--	--	3	208	26	4	2	--	244
Stearns	432	4	--	--	--	9	7	--	1	0	21
Todd	6,814	--	--	--	7	58	8	--	--	--	73
Wabasha	3,259	--	--	--	42	269	143	--	1	--	455
Washington	281	0	--	--	--	85	11	--	13	0	110
Winona	3,305	0	--	--	--	71	64	--	6	--	142
Wright	409	1	--	--	--	1	1	--	--	--	3
Unit Total	71,592	25	4	126	1,555	4,652	852	456	397	256	8,324
Prairie											
Big Stone	46	1	--	--	--	--	--	--	--	--	1
Blue Earth	466	5	--	--	--	--	--	--	--	--	5
Brown	293	0	--	--	--	1	1	--	--	--	2
Chippewa	41	--	--	--	--	--	--	--	--	--	--
Clay	74	--	--	--	--	--	--	--	--	--	--
Cottonwood	32	--	--	--	--	--	--	--	--	--	--
Dodge	277	--	--	--	0	0	0	--	--	--	1
Faribault	222	--	--	--	--	--	--	--	4	--	4
Freeborn	125	--	--	--	--	--	12	--	3	--	15
Grant	4	--	--	--	--	--	--	--	--	--	--
Kandiyohi	31	3	--	--	--	--	--	--	--	--	3
Kittson	17	--	--	--	--	--	--	--	--	--	--
Lac Qui Parle	26	1	--	--	--	--	--	--	--	--	1
Lincoln	37	--	--	--	--	--	--	--	--	--	--
Lyon	33	--	--	--	--	--	--	--	1	--	1
Marshall	1,585	--	--	--	--	--	--	--	--	9	9
Martin	8	--	--	--	--	--	--	--	--	--	--
McLeod	14	0	--	--	--	--	--	--	--	--	0
Meeker	13	1	--	--	--	--	--	--	--	--	1
Mower	107	1	--	--	--	--	19	--	4	--	24
Murray	17	--	--	--	--	--	--	--	0	--	0
Nicollet	627	6	--	--	--	0	--	--	0	--	6
Nobles	10	--	--	--	--	--	--	--	--	--	--
Norman	261	--	--	--	--	--	--	--	--	--	--
Pennington	189	--	--	--	--	--	--	--	2	--	2
Pipestone	16	--	--	--	--	--	--	--	--	--	--
Polk	263	--	--	--	--	--	--	--	--	--	--
Pope	146	--	--	--	--	1	--	--	--	--	1

continued

Table 15.—continued

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Red Lake	204	--	--	--	--	--	--	--	--	--	--
Redwood	49	--	--	--	--	--	--	--	0	--	0
Renville	45	0	--	--	--	1	1	--	2	--	4
Rock	27	--	--	--	--	--	--	--	--	--	--
Sibley	46	--	--	--	--	--	--	--	--	--	--
Steele	62	--	--	--	--	1	6	--	1	--	8
Stevens	1	--	--	--	--	--	--	--	--	--	--
Swift	6	--	--	--	--	--	--	--	--	--	--
Waseca	57	4	--	--	--	--	--	--	1	--	5
Watonwan	120	--	--	--	--	--	--	--	--	--	--
Unit Total	5,594	24	--	--	0	4	39	--	19	9	95
State total	673,261	49	1,552	28,573	45,384	99,833	6,335	1,812	51,710	9,702	244,952

continued

Table 15.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Aspen-Birch											
Carlton	404	14,306	206	--	1,525	46	--	--	--	15	--
Cook	32	4,602	--	--	206	2	--	--	--	--	--
Koochiching	1,103	27,556	208	--	1,156	2	--	--	--	9	--
Lake	348	6,692	76	--	1,943	16	--	--	--	0	--
St. Louis	1,091	63,148	481	--	5,980	110	1	--	--	24	--
Unit Total	2,979	116,304	971	--	10,810	175	1	--	--	48	--
Northern Pine											
Aitkin	937	19,337	1,112	--	1,730	19	0	--	--	74	12
Becker	26	5,752	228	--	511	0	--	--	2	27	--
Beltrami	465	31,640	262	--	1,722	--	--	--	2	8	--
Cass	500	25,113	657	--	2,820	4	--	--	1	34	4
Clearwater	19	10,704	59	--	635	--	--	--	2	4	--
Crow Wing	215	9,849	303	--	753	8	--	--	1	37	8
Hubbard	25	14,704	92	--	940	--	--	--	2	9	--
Itasca	1,219	50,010	1,225	--	3,409	47	--	--	--	18	4
Lake of the Woods	114	10,843	--	--	246	0	--	--	--	--	--
Mahnomen	9	1,253	11	--	16	--	--	--	2	3	--
Roseau	37	3,576	0	--	78	--	--	--	--	0	--
Wadena	1	2,040	4	--	15	--	0	--	--	0	--
Unit Total	3,567	184,819	3,954	--	12,875	79	0	--	12	214	29
Central Hardwood											
Anoka	81	30	8	--	4	--	2	0	6	47	--
Benton	9	70	31	--	1	--	1	1	0	2	--
Carver	8	1	--	--	--	--	--	3	104	30	--
Chisago	58	28	57	1	13	11	3	--	32	13	2
Dakota	24	5	33	--	2	--	4	2	184	32	0
Douglas	38	23	115	--	1	--	--	1	238	20	--
Fillmore	37	9	443	--	3	--	65	377	22	141	76
Goodhue	32	97	53	--	1	--	30	73	29	39	18
Hennepin	65	28	11	--	2	--	3	13	4	27	--
Houston	39	67	112	--	2	--	87	310	72	74	166
Isanti	75	308	31	--	511	--	1	--	33	21	2
Kanabec	226	2,206	325	--	151	7	1	--	1	59	8
Le Sueur	15	--	5	--	--	--	--	7	137	31	--
Mille Lacs	277	2,265	324	--	179	5	--	--	13	44	4
Morrison	62	4,121	115	--	144	--	0	--	5	19	--
Olmsted	23	8	121	--	--	--	34	35	12	31	27
Otter Tail	47	750	181	--	9	--	--	--	148	--	--
Pine	382	11,396	503	1	1,521	61	3	--	0	37	10
Ramsey	51	28	8	--	2	--	2	1	26	2	--

continued

Table 15.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Central Hardwood, continued											
Rice	0	--	5	--	--	--	--	13	--	--	0
Scott	21	4	1	--	0	--	1	1	207	53	0
Sherburne	31	91	8	--	3	--	1	1	5	21	--
Stearns	43	65	31	--	3	--	0	0	15	8	--
Todd	56	3,205	55	--	31	--	0	--	2,580	7	--
Wabasha	31	157	250	--	3	--	40	107	329	22	24
Washington	12	24	--	--	0	--	2	2	--	--	3
Winona	32	220	66	--	10	--	48	237	160	77	130
Wright	64	8	22	--	--	--	--	11	100	30	15
Unit Total	1,839	25,212	2,914	2	2,598	83	329	1,194	4,463	886	486
Prairie											
Big Stone	3	--	--	--	--	--	--	--	40	1	--
Blue Earth	122	--	13	--	--	--	1	93	156	4	--
Brown	50	--	4	--	--	--	15	32	146	3	--
Chippewa	15	--	--	--	--	--	--	1	20	5	--
Clay	9	20	11	--	5	--	--	--	2	3	--
Cottonwood	6	--	0	--	--	--	--	18	--	1	--
Dodge	11	1	33	--	--	--	8	69	--	--	1
Faribault	2	--	34	--	--	--	2	29	--	33	13
Freeborn	28	--	--	--	--	--	5	0	27	--	--
Grant	--	--	1	--	--	--	--	0	--	--	--
Kandiyohi	6	1	6	--	--	--	0	2	3	0	--
Kittson	--	5	--	--	--	--	--	--	--	0	--
Lac Qui Parle	2	--	--	--	--	--	--	--	22	1	--
Lincoln	11	--	--	--	--	--	--	1	21	--	--
Lyon	11	0	--	--	--	--	--	3	14	2	--
Marshall	1	1,572	--	--	--	--	--	--	--	1	--
Martin	1	--	--	--	--	--	--	3	--	2	--
McLeod	1	--	1	--	--	--	0	--	--	2	--
Meeker	3	--	2	--	--	--	0	1	--	0	--
Mower	20	--	--	--	--	--	2	10	21	0	--
Murray	5	0	--	--	--	--	--	--	10	--	--
Nicollet	140	--	45	--	--	--	15	137	180	28	--
Nobles	3	--	--	--	2	--	--	--	--	--	--
Norman	9	208	11	--	5	--	--	--	2	3	--
Pennington	--	187	--	--	--	--	--	--	--	--	--
Pipestone	5	--	--	--	--	--	--	--	10	--	--
Polk	11	195	12	--	12	--	--	--	2	4	--
Pope	12	19	1	--	--	--	0	0	--	0	--
Red Lake	2	198	--	--	--	--	--	--	1	--	--

continued

Table 15.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Prairie, continued											
Redwood	3	0	0	--	--	--	--	2	35	1	--
Renville	13	--	1	--	--	--	--	3	18	--	--
Rock	8	--	--	--	--	--	--	6	10	--	--
Sibley	1	--	--	--	--	--	--	32	--	--	--
Steele	12	0	4	--	--	--	1	3	11	--	--
Stevens	0	--	--	--	--	--	--	0	--	--	--
Swift	3	--	0	--	--	--	--	--	1	0	--
Waseca	3	--	5	--	--	--	--	3	4	10	--
Watsonwan	16	1	--	--	--	--	--	73	2	2	--
Unit Total	547	2,408	187	--	24	--	51	523	757	107	14
State total	8,933	328,742	8,026	2	26,307	338	381	1,717	5,231	1,255	529

Table 15.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Aspen-Birch						
Carlton	1,692	130	147	46	0	18,518
Cook	37	46	--	--	--	4,924
Koochiching	138	53	6	13	0	30,245
Lake	1,033	229	--	1	0	10,338
St. Louis	2,678	648	163	40	5	74,370
Unit Total	5,579	1,107	316	100	6	138,394
Northern Pine						
Aitkin	2,698	549	2,373	386	25	29,253
Becker	17	135	113	41	--	6,852
Beltrami	908	3	66	100	0	35,176
Cass	945	253	1,143	344	4	31,824
Clearwater	72	3	25	310	--	11,834
Crow Wing	303	173	664	192	13	12,518
Hubbard	250	118	58	30	--	16,228
Itasca	1,992	332	638	194	4	59,092
Lake of the Woods	3	7	2	0	--	11,215
Mahnomen	4	2	5	43	--	1,348
Roseau	--	0	--	2	--	3,694
Wadena	--	1	20	35	--	2,116
Unit Total	7,193	1,575	5,108	1,676	47	221,148
Central Hardwood						
Anoka	5	11	107	18	2	320
Benton	14	1	71	30	5	235
Carver	17	--	20	27	--	210
Chisago	279	96	229	81	1	904
Dakota	1	21	108	30	1	447
Douglas	10	5	124	19	0	595
Fillmore	343	59	2,082	275	--	3,932
Goodhue	107	59	245	132	--	914
Hennepin	21	4	63	41	2	284
Houston	291	431	2,703	856	21	5,230
Isanti	19	44	110	35	14	1,203
Kanabec	148	146	501	174	17	3,969
Le Sueur	2	1	29	24	--	251
Mille Lacs	158	186	719	222	12	4,408
Morrison	64	19	598	156	3	5,306
Olmsted	66	45	667	145	16	1,230
Otter Tail	36	16	280	54	--	1,519
Pine	2,627	390	644	141	6	17,723
Ramsey	4	4	33	7	2	170

continued

Table 15.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Central Hardwood, continued						
Rice	14	--	15	10	1	58
Scott	2	3	37	28	3	362
Sherburne	2	21	74	32	14	303
Stearns	13	2	170	60	1	411
Todd	12	1	596	198	0	6,740
Wabasha	134	335	773	580	18	2,804
Washington	2	8	81	17	21	171
Winona	340	52	1,371	409	11	3,163
Wright	2	--	71	75	10	406
Unit Total	4,733	1,957	12,520	3,875	177	63,268
Prairie						
Big Stone	1	--	--	--	--	45
Blue Earth	3	15	16	36	1	461
Brown	1	--	13	26	--	291
Chippewa	--	--	--	0	--	41
Clay	4	2	5	12	--	74
Cottonwood	1	0	0	6	--	32
Dodge	34	--	116	3	--	275
Faribault	65	--	32	8	--	218
Freeborn	--	5	23	22	--	110
Grant	--	--	1	1	--	4
Kandiyohi	--	1	2	6	0	28
Kittson	11	0	--	1	--	17
Lac Qui Parle	--	--	--	--	--	25
Lincoln	--	--	--	3	--	37
Lyon	--	0	--	2	--	32
Marshall	--	0	--	2	--	1,576
Martin	--	--	1	1	--	8
McLeod	--	1	3	5	1	14
Meeker	--	--	2	3	--	12
Mower	--	5	16	9	--	83
Murray	--	--	--	2	--	16
Nicollet	23	15	17	21	--	620
Nobles	--	--	5	--	--	10
Norman	4	2	5	12	--	261
Pennington	--	--	--	1	--	188
Pipestone	--	--	--	2	--	16
Polk	5	3	5	15	--	263
Pope	--	1	106	4	1	144
Red Lake	--	--	--	1	1	204

continued

Table 15.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Prairie, continued						
Redwood	--	0	0	6	--	49
Renville	--	--	6	1	--	41
Rock	3	--	--	--	--	27
Sibley	13	--	--	--	--	46
Steele	--	2	10	10	--	54
Stevens	--	0	--	--	--	1
Swift	--	1	--	0	0	6
Waseca	--	--	7	20	--	52
Watsonwan	1	--	3	22	--	120
Unit Total	169	54	393	258	6	5,499
State total	17,674	4,693	18,337	5,909	236	428,309

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 board feet. Columns and rows may not add to their totals due to rounding.

Table 16.—Harvest residue generated by industrial roundwood harvesting, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Minnesota, 2010^a

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Aspen-Birch											
Carlton	4,236	--	15	99	82	380	23	111	98	4	812
Cook	1,636	--	1	58	169	235	19	--	321	0	802
Koochiching	10,950	--	132	1,190	401	326	22	--	3,305	439	5,815
Lake	3,688	--	6	349	333	207	27	1	902	6	1,831
St. Louis	20,631	--	43	1,599	1,403	1,000	197	72	2,837	299	7,450
Unit Total	41,142	--	197	3,294	2,388	2,148	288	184	7,463	748	16,710
Northern Pine											
Aitkin	6,096	--	7	210	144	210	17	42	165	18	814
Becker	1,810	--	--	140	178	193	2	--	35	35	584
Beltrami	8,227	--	10	398	308	432	37	6	424	213	1,826
Cass	8,316	--	6	192	823	1,374	38	14	82	53	2,582
Clearwater	2,382	--	--	84	18	61	3	--	82	4	253
Crow Wing	2,937	--	1	18	293	361	12	32	21	1	738
Hubbard	4,842	--	--	141	663	946	4	1	83	61	1,899
Itasca	16,217	--	8	1,318	995	1,504	126	18	1,702	235	5,906
Lake of the Woods	3,230	--	2	127	409	105	1	--	468	171	1,283
Mahnomen	251	--	--	1	6	4	1	--	9	--	21
Roseau	1,015	--	--	61	176	22	--	--	89	22	371
Wadena	1,214	--	--	3	577	383	1	--	0	--	964
Unit Total	56,538	--	33	2,695	4,591	5,594	242	113	3,160	814	17,241
Central Hardwood											
Anoka	47	0	--	--	--	6	3	0	0	0	9
Benton	54	0	--	0	--	9	0	5	7	0	21
Carver	34	0	--	--	--	--	--	--	0	--	1
Chisago	153	0	--	--	--	3	3	1	0	0	7
Dakota	75	0	--	--	0	2	2	--	1	--	5
Douglas	296	--	--	--	156	--	--	--	--	--	156
Fillmore	725	--	--	--	--	0	0	--	1	--	1
Goodhue	163	--	1	--	--	1	1	--	0	--	3
Hennepin	37	0	--	--	--	1	0	0	0	0	2
Houston	957	--	--	--	--	0	--	--	--	--	0
Isanti	126	0	--	--	0	3	1	1	2	0	8
Kanabec	697	--	--	1	0	7	1	0	0	1	10
Le Sueur	40	1	--	--	--	--	--	--	--	--	1
Mille Lacs	647	--	--	--	17	27	10	5	0	1	60
Morrison	757	0	--	0	0	4	4	1	1	0	10
Olmsted	236	0	--	--	--	0	0	--	1	--	2

continued

Table 16.—continued

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Central Hardwood, continued											
Otter Tail	334	--	--	0	--	5	1	--	0	35	42
Pine	3,979	--	--	23	55	273	19	81	54	1	506
Ramsey	22	0	--	--	--	1	4	0	4	0	9
Rice	9	--	--	--	--	--	--	--	--	--	--
Scott	52	0	--	--	--	--	--	--	--	--	0
Sherburne	36	0	--	--	0	12	2	0	0	--	15
Stearns	81	1	--	--	--	1	1	--	0	0	2
Todd	1,323	--	--	--	1	8	1	--	--	--	9
Wabasha	510	--	--	--	6	29	13	--	0	--	49
Washington	32	0	--	--	--	6	1	--	3	0	10
Winona	536	0	--	--	--	7	5	--	1	--	13
Wright	68	0	--	--	--	0	0	--	--	--	0
Unit Total	12,025	3	1	25	236	405	70	95	77	40	951
Prairie											
Big Stone	6	0	--	--	--	--	--	--	--	--	0
Blue Earth	66	1	--	--	--	--	--	--	--	--	1
Brown	43	0	--	--	--	0	0	--	--	--	0
Chippewa	6	--	--	--	--	--	--	--	--	--	--
Clay	12	--	--	--	--	--	--	--	--	--	--
Cottonwood	4	--	--	--	--	--	--	--	--	--	--
Dodge	47	--	--	--	0	0	0	--	--	--	0
Faribault	34	--	--	--	--	--	--	--	1	--	1
Freeborn	21	--	--	--	--	--	1	--	0	--	1
Grant	1	--	--	--	--	--	--	--	--	--	--
Kandiyohi	4	0	--	--	--	--	--	--	--	--	0
Kittson	1	--	--	--	--	--	--	--	--	--	--
Lac Qui Parle	4	0	--	--	--	--	--	--	--	--	0
Lincoln	5	--	--	--	--	--	--	--	--	--	--
Lyon	5	--	--	--	--	--	--	--	0	--	0
Marshall	269	--	--	--	--	--	--	--	--	2	2
Martin	1	--	--	--	--	--	--	--	--	--	--
McLeod	3	0	--	--	--	--	--	--	--	--	0
Meeker	2	0	--	--	--	--	--	--	--	--	0
Mower	16	0	--	--	--	--	1	--	1	--	2
Murray	2	--	--	--	--	--	--	--	0	--	0
Nicollet	81	1	--	--	--	0	--	--	0	--	1
Nobles	2	--	--	--	--	--	--	--	--	--	--
Norman	44	--	--	--	--	--	--	--	--	--	--
Pennington	32	--	--	--	--	--	--	--	0	--	0
Pipestone	2	--	--	--	--	--	--	--	--	--	--

continued

Table 16.—continued

Forest Survey Unit and county	All species	Softwoods									Total softwoods
		Eastern redcedar	Northern white-cedar	Balsam fir	Jack pine	Red pine	White pine	Other pine	Spruce	Tamarack	
Prairie, continued											
Polk	45	--	--	--	--	--	--	--	--	--	--
Pope	30	--	--	--	--	0	--	--	--	--	0
Red Lake	34	--	--	--	--	--	--	--	--	--	--
Redwood	7	--	--	--	--	--	--	--	0	--	0
Renville	6	0	--	--	--	0	0	--	0	--	0
Rock	4	--	--	--	--	--	--	--	--	--	--
Sibley	4	--	--	--	--	--	--	--	--	--	--
Steele	10	--	--	--	--	0	0	--	0	--	1
Stevens	0	--	--	--	--	--	--	--	--	--	--
Swift	0	--	--	--	--	--	--	--	--	--	--
Waseca	10	1	--	--	--	--	--	--	0	--	1
Watonwan	19	--	--	--	--	--	--	--	--	--	--
Unit Total	883	3	--	--	0	0	3	--	3	2	11
State total	110,588	6	231	6,015	7,215	8,148	602	392	10,702	1,603	34,914

Table 16.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Aspen-Birch											
Carlton	89	2,383	37	--	333	7	--	--	--	2	--
Cook	10	767	--	--	29	1	--	--	--	--	--
Koochiching	255	4,486	32	--	315	1	--	--	--	1	--
Lake	81	1,096	23	--	276	3	--	--	--	0	--
St. Louis	243	10,475	86	--	1,340	24	0	--	--	3	--
Unit Total	678	19,207	177	--	2,293	36	0	--	--	5	--
Northern Pine											
Aitkin	166	3,170	185	--	269	3	0	--	--	10	2
Becker	4	953	17	--	166	0	--	--	0	4	--
Beltrami	129	5,355	62	--	521	--	--	--	0	1	--
Cass	78	4,231	102	--	617	1	--	--	0	5	1
Clearwater	3	1,808	11	--	206	--	--	--	0	1	--
Crow Wing	29	1,663	48	--	157	1	--	--	0	5	1
Hubbard	3	2,496	8	--	295	--	--	--	0	1	--
Itasca	266	8,199	187	--	804	14	--	--	--	2	1
Lake of the Woods	33	1,833	--	--	78	0	--	--	--	--	--
Mahnomen	1	210	2	--	4	--	--	--	0	0	--
Roseau	11	607	0	--	25	--	--	--	--	0	--
Wadena	0	233	1	--	3	--	0	--	--	0	--
Unit Total	721	30,759	622	--	3,146	19	0	--	1	29	4
Central Hardwood											
Anoka	5	2	0	--	0	--	0	0	1	6	--
Benton	1	9	3	--	0	--	0	0	0	0	--
Carver	1	0	--	--	--	--	--	0	14	4	--
Chisago	7	4	8	0	2	1	0	--	4	2	0
Dakota	2	0	5	--	0	--	1	0	25	4	0
Douglas	5	3	16	--	0	--	--	0	78	3	--
Fillmore	5	1	61	--	0	--	8	52	3	19	9
Goodhue	4	16	7	--	0	--	3	9	4	5	3
Hennepin	4	1	1	--	0	--	0	2	0	4	--
Houston	5	11	15	--	0	--	11	42	10	10	19
Isanti	9	39	5	--	28	--	0	--	4	2	0
Kanabec	34	361	51	--	24	1	0	--	0	8	1
Le Sueur	2	--	1	--	--	--	--	1	19	4	--
Mille Lacs	29	257	36	--	29	1	--	--	1	5	1
Morrison	7	519	15	--	25	--	0	--	0	2	--
Olmsted	3	1	17	--	--	--	3	5	2	4	3
Otter Tail	6	126	25	--	1	--	--	--	48	--	--
Pine	72	1,925	98	0	390	9	0	--	0	5	1
Ramsey	3	2	0	--	0	--	0	0	3	0	--

continued

Table 16.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Aspen-Birch						
Carlton	501	29	33	10	0	3,424
Cook	11	15	--	--	--	833
Koochiching	35	10	1	1	0	5,136
Lake	307	72	--	0	0	1,858
St. Louis	797	170	35	7	0	13,181
Unit Total	1,651	297	69	18	0	24,431
Northern Pine						
Aitkin	752	95	541	86	3	5,282
Becker	5	43	26	9	--	1,227
Beltrami	296	0	15	22	0	6,401
Cass	293	64	264	79	1	5,733
Clearwater	22	0	6	72	--	2,129
Crow Wing	77	33	140	42	2	2,199
Hubbard	81	38	13	7	--	2,943
Itasca	584	63	147	44	1	10,311
Lake of the Woods	1	2	1	0	--	1,947
Mahnomen	1	0	1	10	--	230
Roseau	--	0	--	1	--	644
Wadena	--	0	5	8	--	250
Unit Total	2,111	339	1,159	380	6	39,297
Central Hardwood						
Anoka	0	1	19	3	0	37
Benton	2	0	12	5	0	33
Carver	2	--	4	6	--	33
Chisago	38	13	49	17	0	146
Dakota	0	3	24	6	0	70
Douglas	1	1	29	4	0	141
Fillmore	46	8	471	40	--	724
Goodhue	13	8	57	30	--	161
Hennepin	3	0	10	9	0	34
Houston	39	60	583	150	2	957
Isanti	3	3	18	5	1	118
Kanabec	31	27	110	36	2	687
Le Sueur	0	0	7	5	--	39
Mille Lacs	29	29	135	36	1	587
Morrison	15	2	129	32	0	747
Olmsted	9	6	147	33	1	234
Otter Tail	5	2	65	12	--	292
Pine	737	74	131	30	1	3,473
Ramsey	0	0	3	1	0	13

continued

Table 16.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Central Hardwood, continued											
Rice	0	--	1	--	--	--	--	1	--	--	0
Scott	2	0	0	--	0	--	0	0	28	7	0
Sherburne	2	5	0	--	0	--	0	0	0	3	--
Stearns	6	11	4	--	0	--	0	0	2	1	--
Todd	8	261	7	--	5	--	0	--	846	1	--
Wabasha	4	12	33	--	0	--	4	14	42	3	3
Washington	1	3	--	--	0	--	0	0	--	--	0
Winona	4	22	7	--	1	--	5	32	19	11	14
Wright	9	1	3	--	--	--	--	2	14	4	2
Unit Total	243	3,594	420	0	508	12	38	161	1,169	119	57
Prairie											
Big Stone	0	--	--	--	--	--	--	--	6	0	--
Blue Earth	17	--	2	--	--	--	0	11	21	1	--
Brown	7	--	1	--	--	--	2	4	20	0	--
Chippewa	2	--	--	--	--	--	--	0	3	1	--
Clay	1	3	2	--	1	--	--	--	0	0	--
Cottonwood	1	--	0	--	--	--	--	2	--	0	--
Dodge	1	0	4	--	--	--	1	9	--	--	0
Faribault	0	--	5	--	--	--	0	4	--	5	2
Freeborn	4	--	--	--	--	--	1	0	4	--	--
Grant	--	--	0	--	--	--	--	0	--	--	--
Kandiyohi	1	0	1	--	--	--	0	0	0	0	--
Kittson	--	0	--	--	--	--	--	--	--	0	--
Lac Qui Parle	0	--	--	--	--	--	--	--	3	0	--
Lincoln	2	--	--	--	--	--	--	0	3	--	--
Lyon	2	0	--	--	--	--	--	0	2	0	--
Marshall	0	267	--	--	--	--	--	--	--	0	--
Martin	0	--	--	--	--	--	--	0	--	0	--
McLeod	0	--	0	--	--	--	0	--	--	0	--
Meeker	0	--	0	--	--	--	0	0	--	0	--
Mower	3	--	--	--	--	--	0	1	3	0	--
Murray	1	0	--	--	--	--	--	--	1	--	--
Nicollet	18	--	5	--	--	--	2	14	25	4	--
Nobles	0	--	--	--	0	--	--	--	--	--	--
Norman	1	35	2	--	1	--	--	--	0	0	--
Pennington	--	32	--	--	--	--	--	--	--	--	--
Pipestone	1	--	--	--	--	--	--	--	1	--	--
Polk	2	33	2	--	3	--	--	--	0	1	--
Pope	1	3	0	--	--	--	0	0	--	0	--
Red Lake	0	33	--	--	--	--	--	--	0	--	--

continued

Table 16.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Central Hardwood, continued						
Rice	1	--	3	2	0	9
Scott	0	0	7	6	0	52
Sherburne	0	1	6	2	1	21
Stearns	2	0	39	14	0	79
Todd	2	0	138	45	0	1,314
Wabasha	18	45	169	111	1	462
Washington	0	1	12	3	2	22
Winona	45	6	285	71	1	523
Wright	0	--	15	17	1	68
Unit Total	1,043	290	2,677	731	14	11,074
Prairie						
Big Stone	0	--	--	--	--	6
Blue Earth	0	2	4	8	0	65
Brown	0	--	3	6	--	43
Chippewa	--	--	--	0	--	6
Clay	1	0	1	3	--	12
Cottonwood	0	0	0	1	--	4
Dodge	4	--	26	1	--	47
Faribault	9	--	7	2	--	33
Freeborn	--	1	5	5	--	19
Grant	--	--	0	0	--	1
Kandiyohi	--	0	0	1	0	4
Kittson	1	0	--	0	--	1
Lac Qui Parle	--	--	--	--	--	3
Lincoln	--	--	--	1	--	5
Lyon	--	0	--	0	--	5
Marshall	--	0	--	0	--	268
Martin	--	--	0	0	--	1
McLeod	--	0	1	1	0	3
Meeker	--	--	0	1	--	2
Mower	--	1	4	2	--	14
Murray	--	--	--	0	--	2
Nicollet	2	2	4	5	--	80
Nobles	--	--	1	--	--	2
Norman	1	0	1	3	--	44
Pennington	--	--	--	0	--	32
Pipestone	--	--	--	0	--	2
Polk	1	0	1	4	--	45
Pope	--	0	25	0	0	30
Red Lake	--	--	--	0	0	34

continued

Table 16.—continued

Forest Survey Unit and county	Hardwoods										
	Ash	Aspen	Bass- wood	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton- wood	Elm	Hickory
Prairie, continued											
Redwood	0	0	0	--	--	--	--	0	5	0	--
Renville	2	--	0	--	--	--	--	0	2	--	--
Rock	1	--	--	--	--	--	--	1	1	--	--
Sibley	0	--	--	--	--	--	--	2	--	--	--
Steele	2	0	1	--	--	--	0	0	2	--	--
Stevens	0	--	--	--	--	--	--	0	--	--	--
Swift	0	--	0	--	--	--	--	--	0	0	--
Waseca	0	--	1	--	--	--	--	0	1	1	--
Watsonwan	2	0	--	--	--	--	--	10	0	0	--
Unit Total	73	407	24	--	5	--	7	62	104	15	2
State total	1,715	53,967	1,243	0	5,951	67	44	222	1,274	168	63

Table 16.—continued

Forest Survey Unit and County	Hardwoods, continued					Total hardwoods
	Hard maple	Soft maple	Red oak	White oak	Other hardwoods	
Prairie, continued						
Redwood	--	0	0	1	--	7
Renville	--	--	1	0	--	6
Rock	0	--	--	--	--	4
Sibley	1	--	--	--	--	4
Steele	--	0	2	2	--	9
Stevens	--	0	--	--	--	0
Swift	--	0	--	0	0	0
Waseca	--	--	2	5	--	10
Watonwan	0	--	1	5	--	19
Unit Total	19	7	90	58	1	872
State total	4,825	933	3,995	1,186	21	75,674

All table cells without observations are indicated by --. Table value of 0 indicates the volume rounds to less than 1,000 cubic feet. Columns and rows may not add to their totals due to rounding.

^a Estimated based on factors obtained from regional utilization studies applied to roundwood received.

Table 17.—Disposition of residues produced at primary wood-using mills, in thousand green tons, by Forest Inventory Unit, disposition, residue type, and softwoods and hardwoods, Minnesota, 2010^a

Forest Inventory Unit and disposition	Residue type									
	Total all residues		Wood residue							
			Total wood residue		Coarse ^b		Fine ^c		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
All Units										
Fiber products	36.3	31.6	36.3	31.3	36.2	28.1	0.1	3.2	0.0	0.2
Industrial fuel	244.8	795.4	92.0	248.8	7.4	28.4	84.6	220.4	152.8	546.6
Residential fuel	6.4	58.5	4.6	44.2	4.6	41.6	0.0	2.6	1.8	14.2
Pellets	0.1	0.8	0.1	0.8	0.1	0.4	0.0	0.4	0.0	0.1
Mulch	173.7	23.2	156.7	8.5	155.5	6.2	1.2	2.3	17.0	14.7
Animal bedding	74.6	30.9	74.4	28.4	0.1	0.9	74.3	27.6	0.3	2.5
Miscellaneous ^d	8.8	16.9	7.3	14.1	4.1	6.7	3.2	7.3	1.5	2.9
Not used	3.9	3.1	2.4	2.7	0.5	0.6	1.9	2.1	1.5	0.4
State Total	548.7	960.4	373.8	378.8	208.4	113.0	165.4	265.8	174.9	581.6
Aspen-Birch										
Fiber products	20.4	5.7	20.4	5.4	20.4	3.4	--	2.0	0.0	0.2
Industrial fuel	87.0	570.5	31.4	165.7	0.5	9.2	30.9	156.5	55.6	404.8
Residential fuel	1.4	1.1	1.0	0.8	1.0	0.8	--	--	0.3	0.3
Mulch	4.8	0.5	2.1	0.4	1.1	0.0	1.0	0.4	2.6	0.1
Animal bedding	4.2	0.9	4.2	0.9	--	--	4.2	0.9	--	--
Miscellaneous ^d	0.1	0.9	0.1	0.9	0.1	0.0	0.0	0.8	--	--
Not used	2.3	0.1	1.1	0.1	0.1	0.0	1.0	0.0	1.2	0.0
Unit Total	120.1	579.6	60.3	174.1	23.2	13.5	37.2	160.6	59.8	405.6
Northern Pine										
Fiber products	14.9	13.6	14.9	13.6	14.7	12.4	0.1	1.2	--	--
Industrial fuel	133.2	177.0	50.6	61.7	6.7	12.8	43.9	49.0	82.7	115.3
Residential fuel	3.8	36.7	2.6	27.2	2.6	24.6	0.0	2.6	1.2	9.5
Pellets	0.1	0.7	0.1	0.6	0.0	0.3	0.0	0.3	0.0	0.1
Mulch	168.4	12.6	154.5	6.4	154.3	4.6	0.2	1.9	13.8	6.2
Animal bedding	69.9	13.5	69.7	11.5	0.1	0.0	69.6	11.4	0.3	2.1
Miscellaneous ^d	8.5	12.7	7.0	10.8	3.9	6.1	3.1	4.7	1.4	2.0
Not used	1.4	2.1	1.2	1.9	0.4	0.2	0.8	1.7	0.3	0.1
Unit Total	400.2	268.9	300.5	133.8	182.8	61.0	117.7	72.7	99.7	135.1
Central Hardwood										
Fiber products	1.1	12.2	1.1	12.2	1.1	12.2	--	--	--	--
Industrial fuel	24.7	47.5	10.1	21.1	0.2	6.3	9.9	14.8	14.6	26.4
Residential fuel	1.1	18.5	0.8	14.7	0.8	14.7	0.0	0.0	0.3	3.8
Mulch	0.6	8.7	0.1	0.8	0.1	0.7	0.0	0.0	0.5	7.9
Animal bedding	0.5	13.7	0.5	13.7	0.0	0.1	0.5	13.6	0.0	0.1
Miscellaneous ^d	0.2	3.2	0.2	2.2	0.0	0.5	0.1	1.7	0.1	0.9
Not used	0.2	0.5	0.1	0.4	0.0	0.2	0.1	0.2	0.0	0.1
Unit Total	28.2	104.4	12.8	65.1	2.3	34.7	10.5	30.5	15.4	39.3

continued

Table 17.—continued

Forest Inventory Unit and disposition	Residue type									
	Total all residues		Wood residue							
			Total wood residue		Coarse ^b		Fine ^c		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Prairie										
Fiber products	0.0	0.0	0.0	0.0	0.0	0.0	--	--	--	--
Industrial fuel	0.0	0.4	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.1
Residential fuel	0.1	2.2	0.1	1.5	0.1	1.5	0.0	0.0	0.0	0.7
Pellets	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	--	--
Mulch	0.0	1.3	0.0	0.9	0.0	0.9	--	0.0	0.0	0.4
Animal bedding	0.0	2.8	0.0	2.5	0.0	0.8	0.0	1.7	0.0	0.3
Miscellaneous ^d	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.1	--	0.0
Not used	0.0	0.4	0.0	0.3	0.0	0.2	0.0	0.1	0.0	0.1
Unit Total	0.2	7.5	0.2	5.8	0.1	3.8	0.0	2.0	0.0	1.6

All table cells without observations are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100 green tons. Columns and rows may not add to their totals due to rounding.

^a Estimated based on factors obtained from regional utilization studies applied to roundwood received

^b Suitable for chipping such as slabs, edgings, veneer cores, etc.

^c Not suitable for chipping such as sawdust, veneer clippings, etc.

^d Includes small dimension, specialty items, etc.

Walters, Brian F.; Vongroven, Steve; Piva, Ronald J. 2016. **Minnesota timber industry: an assessment of timber product output and use, 2010**. Resour. Bull. NRS-101. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 75 p.

In 2010, there were 417 active primary wood-using mills in Minnesota. These mills processed 238.8 million cubic feet of industrial roundwood. There was 226.1 million cubic feet of industrial roundwood harvested from Minnesota forests. The majority of roundwood harvested was pulpwood, accounting for 61 percent of the total. The harvesting of industrial roundwood products generated 110.6 million cubic feet of harvest residues. Primary wood-processing mills generated 1.5 million green tons of mill residues.

KEY WORDS: Industrial roundwood, harvest residue, mill residue, production, pulpwood, receipts, saw logs, veneer logs, engineered wood products

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