United States Department of Agriculture

Michigan Timber Industry— An Assessment of Timber Product Output and Use, 2008

David E. Haugen, Brian F. Walters,
Ronald J. Piva, and David Neumann

Forest Service

Northern Research Station

Resource Bulletin NRS-93

December 2014

Abstract

In 2008, there were 282 primary wood-processing mills in Michigan, three fewer mills than in 2006. These mills processed 349.7 million cubic feet of industrial roundwood, of which 311.4 million cubic feet was harvested from within the State. Another 34.9 million cubic feet of the industrial roundwood harvested in Michigan was sent to primary wood-processing mills in other states and countries. Pulpwood accounted for more than half of the total harvest. The harvesting of industrial roundwood products generated 98.8 million cubic feet of harvest residues. Primary wood-processing mills generated 2.6 million green tons of mill residues, with 1 percent of the mill residues generated not used for other products.

The Authors

DAVID E. HAUGEN is a forester with the Forest Inventory and Analysis (FIA) program at the Northern Research Station in St. Paul, MN.

BRIAN F. WALTERS is a forester with the FIA program at the Northern Research Station in St. Paul, MN.

RONALD J. PIVA is a forester with the FIA program at the Northern Research Station in St. Paul, MN.

DAVID NEUMANN is a silviculturist with the Michigan Department of Natural Resources, Forest Resources Division, Lansing, MI.

Cover Photo

Red pine stand next to clear cut. Photo by Scott Pugh, US Forest Service.

Manuscript received for publication 15 October 2014

Published by:

U.S. FOREST SERVICE
11 CAMPUS BLVD SUITE 200
NEWTOWN SQUARE PA 19073

December 2014

Visit our homepage at: **http://www.nrs.fs.fed.us/**

CONTENTS

Introduction 1
Study Methods 1
Primary Timber Industry in Michigan 3
  Industrial Roundwood 3
  Saw Logs 6
  Other Products 6
  Timber Removals 7
  Harvest Intensity 8
  Primary Mill Residues 9
Acknowledgments 10
Literature Cited 10
Appendix 12
  Definition of Terms 12
  Common and Scientific Names of Tree Species by Species Group 17
  Table Titles 20
  Tables 21

This page intentionally left blank

INTRODUCTION

Michigan's wood products manufacturing industry[1] employs almost 25,000 workers and has an output of more than $7.3 billion (U.S. Census Bureau 2007). Given the importance of this industry to the economy of Michigan, this bulletin analyzes recent forest industry trends and reports the results of a detailed study of forest industry, industrial roundwood production, and associated primary mill wood and bark residue in 2008. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, economic research, forest resources management, and forest industry development.

The last published report of timber product output (TPO) and use in Michigan (Piva and Weatherspoon 2010) covered a 2006 survey and is used here for comparison. When new surveys are completed, errors and omissions from previous surveys are corrected. As a result of our ongoing efforts to improve the survey's efficiency and reliability, changes may have been made to the previous survey's data. All comparisons and analysis in this report are based on the reprocessed data from earlier surveys, which may not match earlier published data. Rows and columns of supporting tables may not sum due to rounding, but data in each table cell are accurately displayed.

Information about the forest resources of Michigan is available at the Forest Inventory and Analysis (FIA) program web site at: http://nrs.fs.fed.us/fia/data-tools/state-reports/MI.

STUDY METHODS

This study was a cooperative effort between the Michigan Department of Natural Resources (MI-DNR) and the FIA unit at the Northern Research Station (NRS) of the U.S. Forest Service. FIA is responsible for providing forest resource statistics for all ownerships across the United States, including TPO.

MI-DNR surveyed all known primary wood-using mills using questionnaires designed to determine the size and composition of the State's primary wood-using industry, its use of roundwood, and its generation and disposition of wood residues. Responses from the questionnaires were sent to NRS and entered into a database for processing and analysis. As part of the data processing, all industrial roundwood volumes reported on the questionnaires were converted to standard units of measure using regional conversion factors (Table 1).

Timber removals by source of material and harvest residues generated during logging were estimated from standard product volumes using factors developed from previous NRS logging utilization studies. Michigan's industrial roundwood receipts data along with out-of-state uses of Michigan roundwood were integrated with a regional timber removals database to provide a complete assessment of Michigan's TPO.

Certain terms used in this report—retained, export, import, production, and receipts—have specialized meanings and relationships unique to the FIA program and TPO (Fig. 1).

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

Table 1.—Conversion factors from reported unit of measure to standard unit of measure[a]

Product Standard unit of measure	Reported unit of measure International ¼-inch rule MBF	Doyle rule MBF	Green tons	Standard cords	Thousand pieces	Thousand cubic feet
Saw logs and handles MBF International ¼-inch rule	1	1.38	0.2174	0.5	--	0.158
Veneer logs and cooperage MBF International ¼-inch rule	1	1.14	0.2174	0.5	--	0.158
Pulp and composite products, and industrial fuelwood Standard cords	--	--	0.4167	1	--	0.085
Poles Pieces	20	--	4.348	10	1,000	0.0079
Posts Thousand pieces	0.2	--	0.04167	0.1	1	0.79
Cabin logs, excelsior/shavings, and miscellaneous products Thousand cubic feet	0.158	0.21804	0.0329193	0.079	7.9	1

[a]Reported volume multiplied by the conversion factor = standard volume. For example, a sawmill reports receiving 100 MBF Doyle rule of roundwood; to convert that to MBF International ¼-inch rule: 100 * 1.38 = 138 MBF.

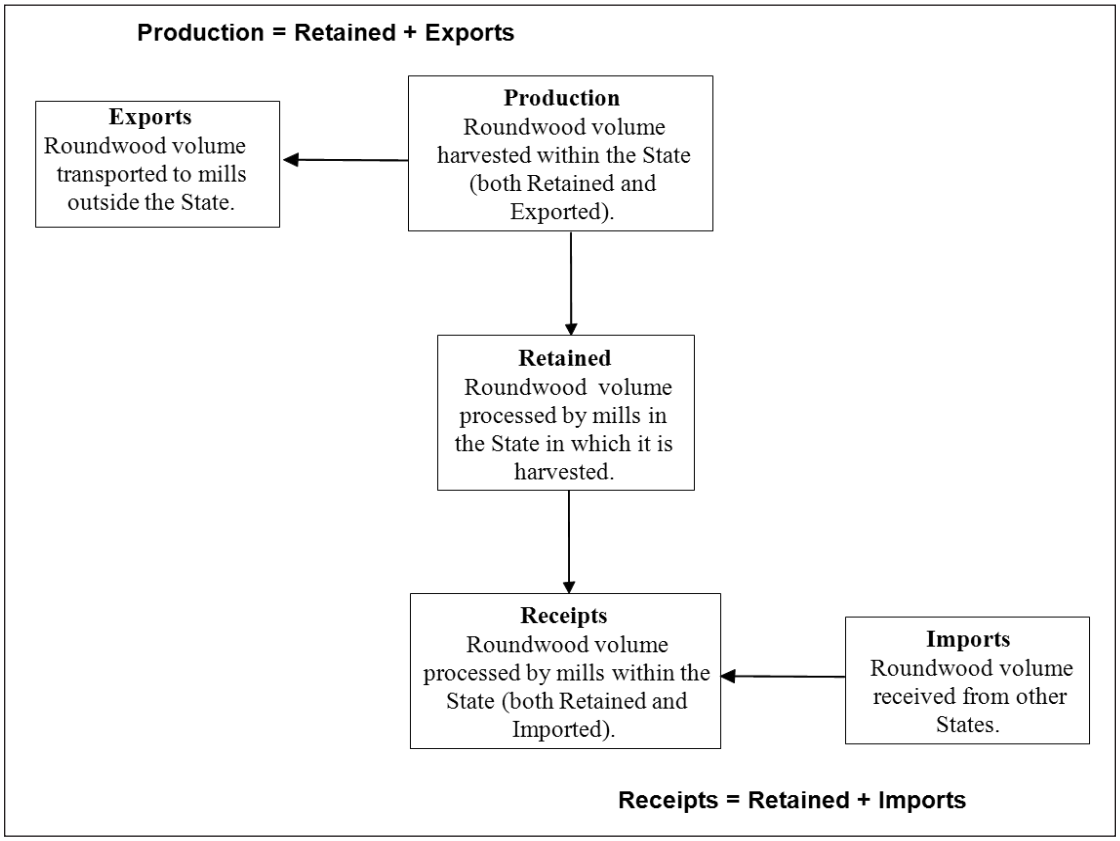

Figure 1.—Diagram of the movement of industrial roundwood.

PRIMARY TIMBER INDUSTRY IN MICHIGAN

Industrial Roundwood

- Michigan's primary wood-using industry included 235 sawmills, 4 veneer mills, 8 pulp and composite product mills, 13 post and pole mills, 7 industrial fuelwood mills, and 15 mills that produced other products (Table 2, Fig. 2).
- Mills in the State decreased from 285 in 2006 to 282 in 2008. The number of small sized sawmills increased between mill surveys, while large and medium sized sawmills decreased. (See footnotes in Table 2 for sawmill size definitions.)
- Receipts of industrial roundwood at Michigan primary wood-using mills totaled 349.7 million cubic feet in 2008, a decrease of 1.5 percent from the 355.1 million cubic feet received in 2006 (Table 3).

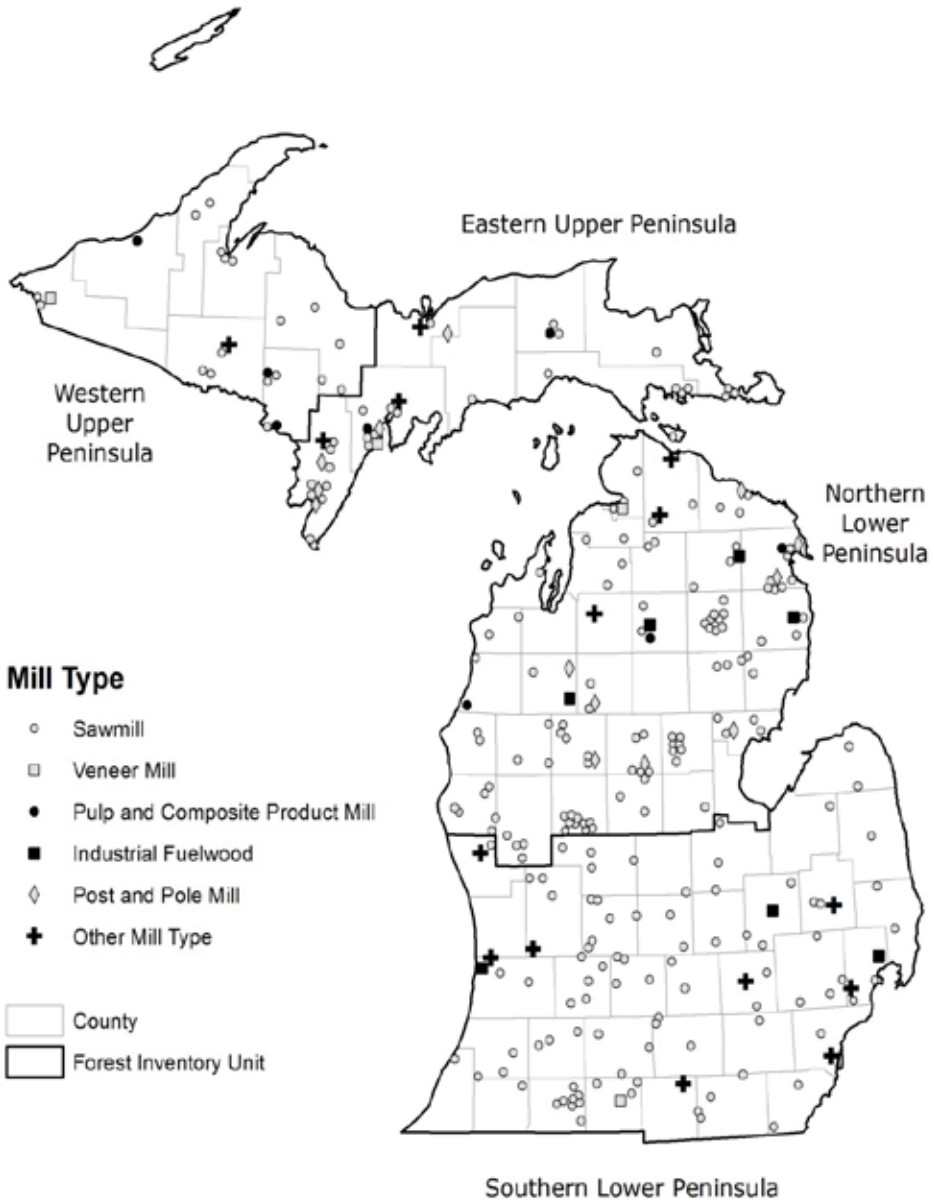

Figure 2—Primary wood-using mills by FIA Unit, Michigan, 2008.

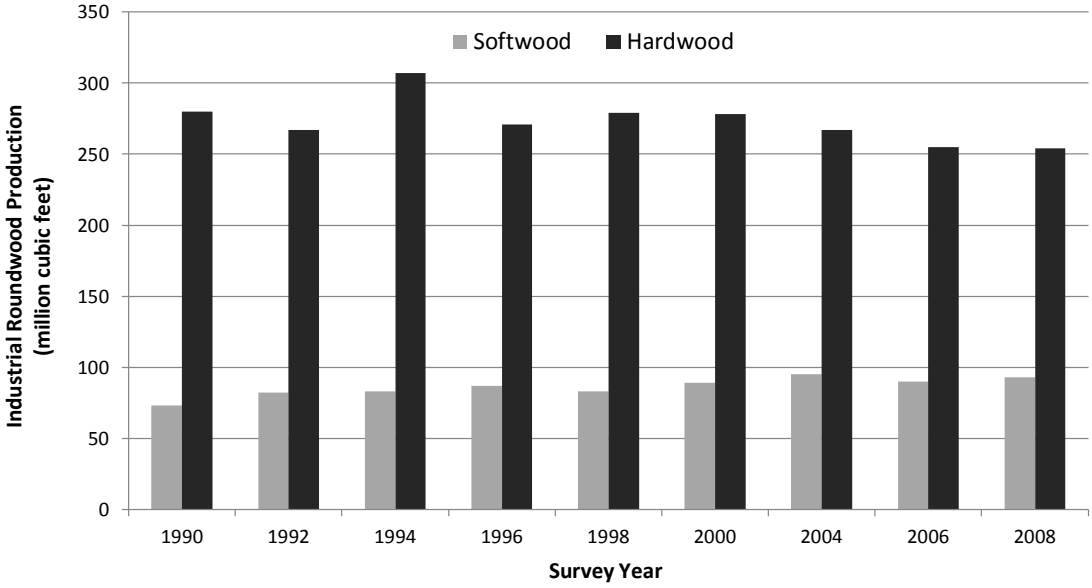

Figure 3.—Industrial roundwood production by softwoods and hardwoods, and survey year, Michigan (Hackett and Pilon 1993, May and Pilon 1995, Hackett and Pilon 1997, Haugen and Pilon 2002, Haugen and Weatherspoon 2003, Haugen and Weatherspoon 2010, Piva and Weatherspoon 2010).

- Eighty-nine percent of the industrial roundwood processed by Michigan's primary wood-using mills was harvested from forests within the State. Wisconsin was the largest supplier of out-of-state wood, supplying 9 percent of the total industrial roundwood processed (Table 4).
- Seventy-three percent of the industrial roundwood processed by Michigan primary wood-using mills was composed of hardwood species. Aspen/balsam poplar, hard maple, soft maple, and red oaks accounted for nearly 59 percent of the total volume processed. Softwoods accounted for 27 percent of the volume processed with most of that being jack and red pine.
- Industrial roundwood production increased by 0.5 percent, from 344.4 million cubic feet in 2006 to 346.3 million cubic feet in 2008 (Table 5, Fig. 3).
- Ninety percent of industrial roundwood harvested in Michigan was retained for processing by primary wood-using mills in the State. Mills in Wisconsin, Minnesota, Indiana, and Canada received 96 percent of Michigan industrial roundwood exports (Table 6).
- The Northern Lower Peninsula unit produced 132.7 million cubic feet of industrial roundwood, 38 percent of total State production, the most in any Forest Inventory Unit. This was followed by the Western Upper Peninsula unit (112.1 million cubic feet, 32 percent of total), the Eastern Upper Peninsula unit (74.6 million cubic feet, 22 percent of total), and the Southern Lower Peninsula unit (26.8 million cubic feet, 8 percent of total).
- Twenty-one percent of the industrial roundwood production volume was from the aspen/balsam poplar species group. Hard maple (18 percent), soft maple (12 percent), and red pine (12 percent) were other major species groups harvested (Table 7, Fig. 4).
- Harvesting pulpwood accounted for 54 percent of the total industrial roundwood production. Saw logs were second in production, accounting for 33 percent of the total volume (Table 8, Fig. 5).

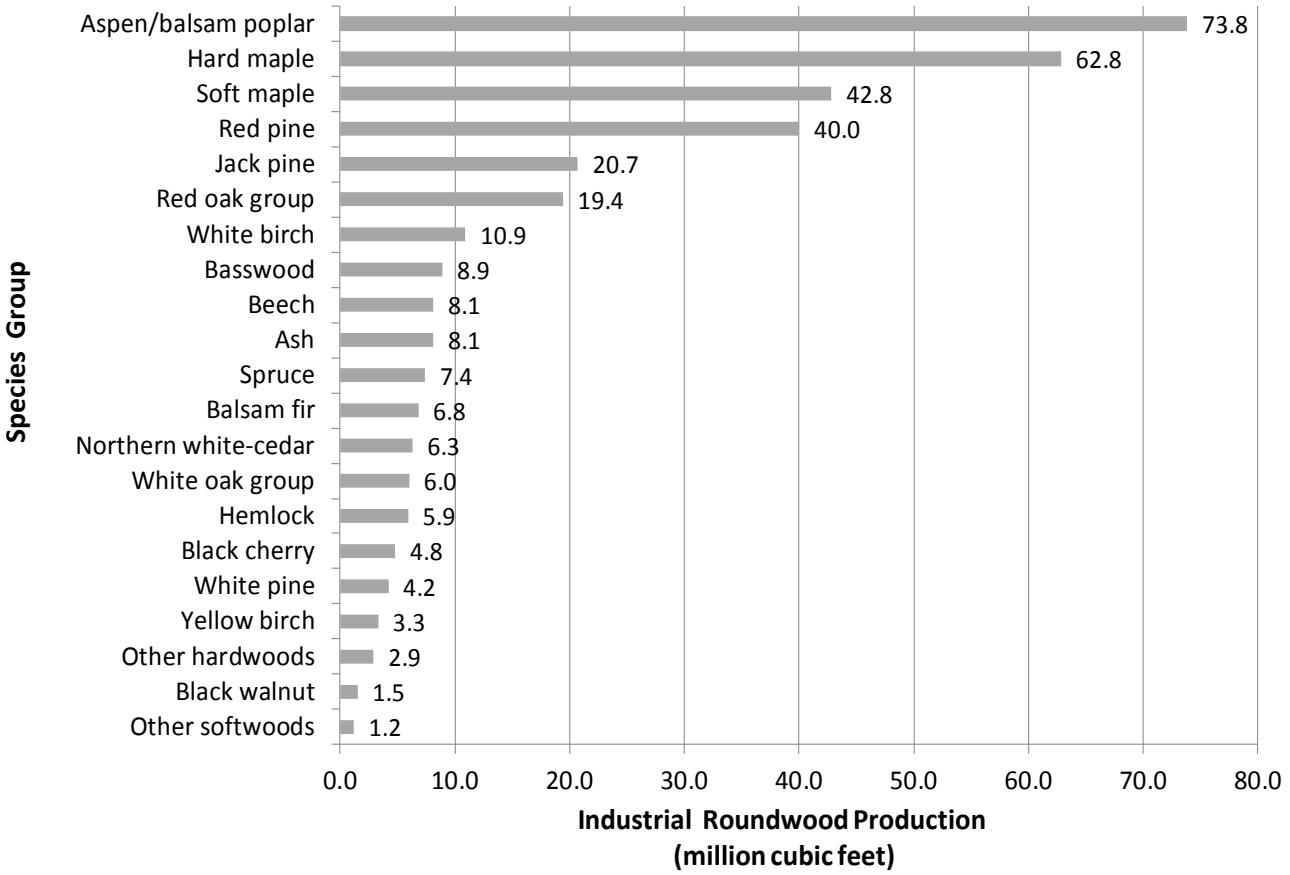

Figure 4.—Industrial roundwood production by species group, Michigan, 2008.

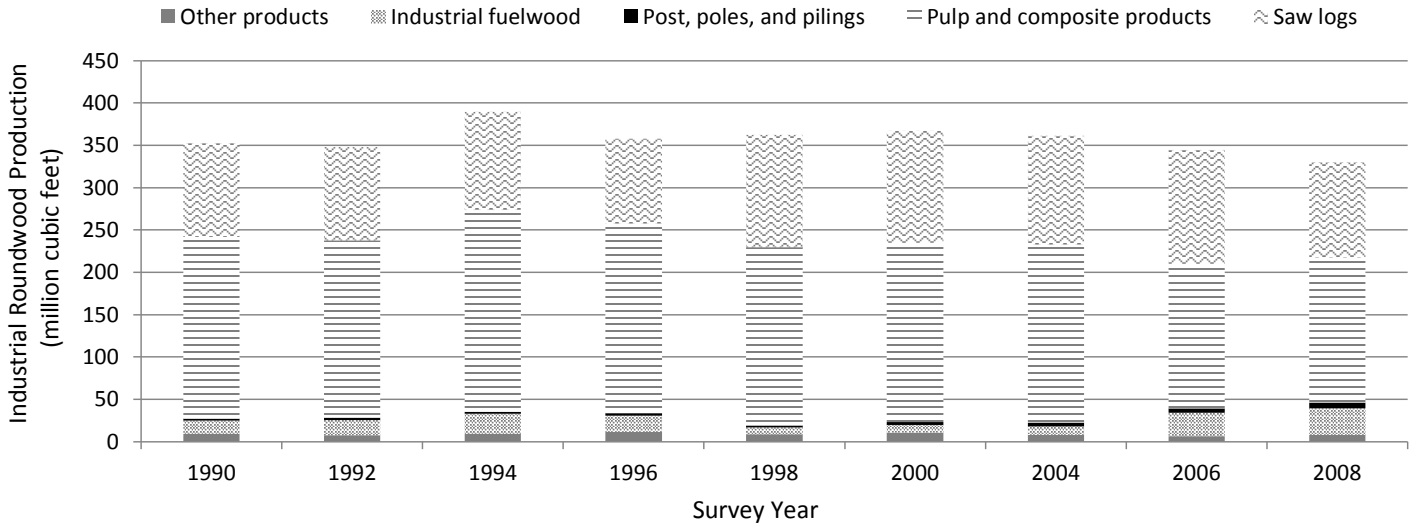

Figure 5.—Industrial roundwood production in thousand cubic feet, by product and survey year, Michigan (Hackett and Pilon 1993, May and Pilon 1995, Hackett and Pilon 1997, Haugen and Pilon 2002, Haugen and Weatherspoon 2003, Haugen and Weatherspoon 2010, Piva and Weatherspoon 2010).

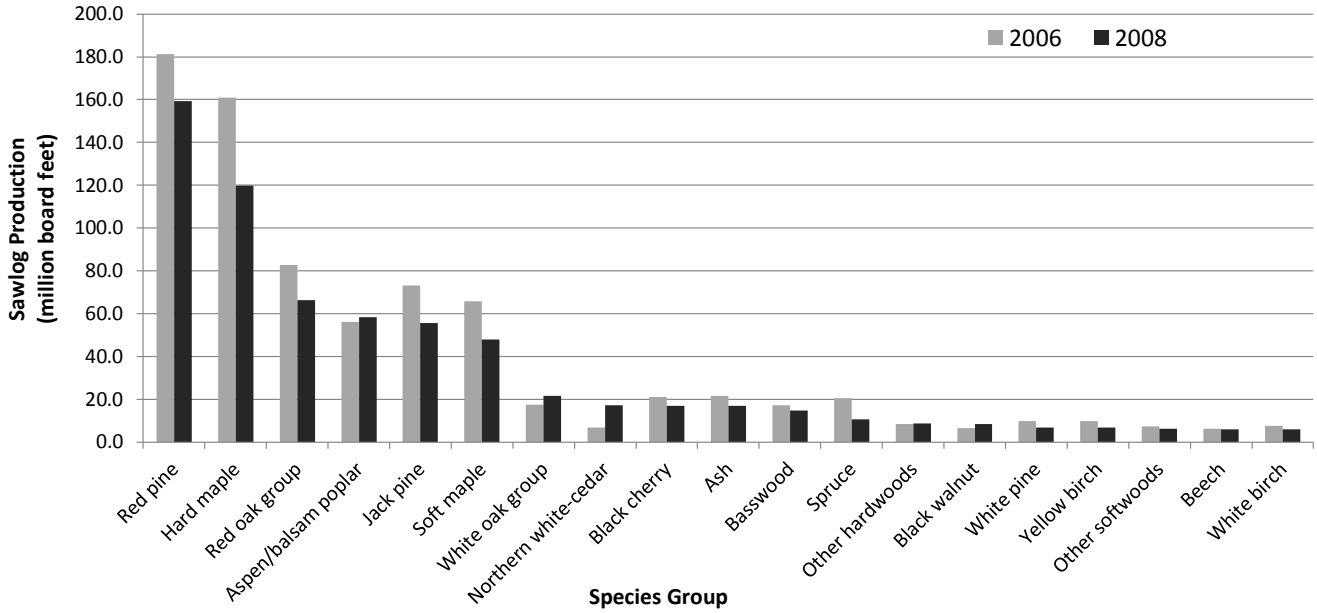

Figure 6.—Saw log production by species group, Michigan, 2006 and 2008.

Saw Logs

- Receipts at Michigan sawmills totaled 647.5 million board feet in 2008, a decrease of 19 percent from the 804.3 million board feet received in 2006 (Table 9).
- Saw log production decreased by 16 percent between 2006 and 2008, from 779.9 to 654 million board feet.
- Red pine accounted for 24 percent of the total volume of saw log production in Michigan. Other important species groups in saw log production were hard maple (18 percent) , red oaks (10 percent), aspen/balsam poplar (9 percent), jack pine (8 percent), and soft maple (7 percent).(Fig. 6).

Other Products

Receipts at Michigan pulp and composite product mills increased 8 percent from 175.5 million cubic feet in 2006 to 190.9 million cubic feet in 2008 (Table 3). Production of pulpwood from Michigan's forests amounted to 187.2 million cubic feet, an increase of 9 percent over the 170.7 million cubic feet harvested in 2006 (Table 5). See Piva (2014) for the results of a separate Northern Region pulpwood study conducted for 2007.

- Production of industrial fuelwood increased 12 percent from 27.3 million cubic feet in 2006 to 31.1 million cubic feet in 2008.
- There were 5.7 million cubic feet of veneer logs harvested from Michigan in 2008, an increase of 4 percent from the 5.5 million cubic feet harvested in 2006. Hard maple, aspen/balsam poplar, white birch, and red oaks made up 75 percent of the total harvest.
- The remaining industrial roundwood harvested in 2008 included posts, poles, cabin logs, and other miscellaneous products, accounting for 3 percent of the total volume.
- Residential fuelwood is not included in this report.

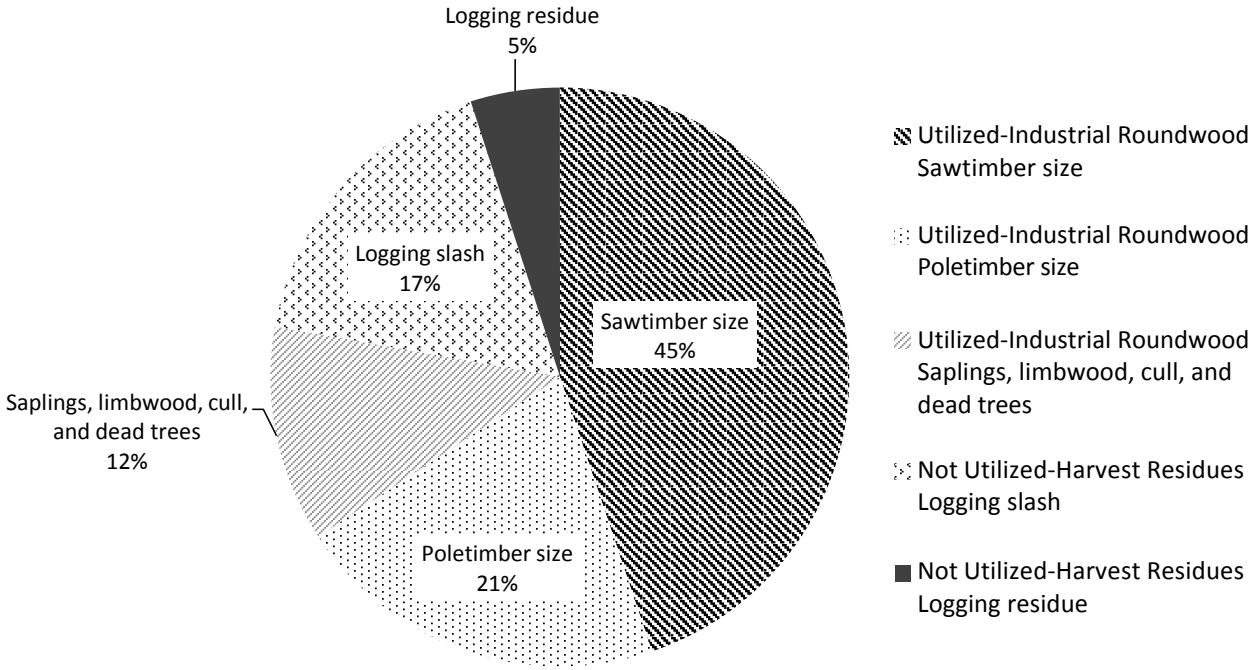

Figure 7.—Distribution of timber removals for industrial roundwood by source of material, Michigan, 2008.

Timber Removals

- During the harvest of industrial roundwood from Michigan's forests in 2008, 445.2 million cubic feet of wood material was cut with 346.3 million cubic feet (78 percent) used for primary wood products (Table 10, Fig. 7).
- Growing-stock sources, at 314.7 million cubic feet, were the largest component of removals for industrial roundwood production. Ninety-three percent of the growing stock removed was used for products, with the remaining 7 percent left as logging residue. Sawtimber-size trees accounted for 63 percent of the growing-stock volume used for products.
- Non-growing-stock sources of industrial roundwood production amounted to 130.4 million cubic feet of wood material removed. Forty-one percent of this material was used for products; the remainder was left on the ground as logging slash. Ninety-two percent of the non-growing-stock material used for industrial roundwood came from the limbs of growing-stock trees and cull trees; the remainder was made up of dead trees and saplings.
- Thirty-eight percent of the total growing-stock material removed from Michigan's timberland came from the Northern Lower Peninsula unit, followed by the Western Upper Peninsula, Eastern Upper Peninsula, and Southern Lower Peninsula units at 32, 22, and 8 percent, respectively (Table 11).
- More than 1 billion board feet were removed from Michigan's sawtimber inventory. Hard maple, red pine, and aspen/balsam poplar accounted for 51 percent of the total sawtimber volume removed (Table 12).
- The harvest of industrial roundwood from Michigan's forests left 98.8 million cubic feet of wood material on the ground as harvest residues (Table 13).

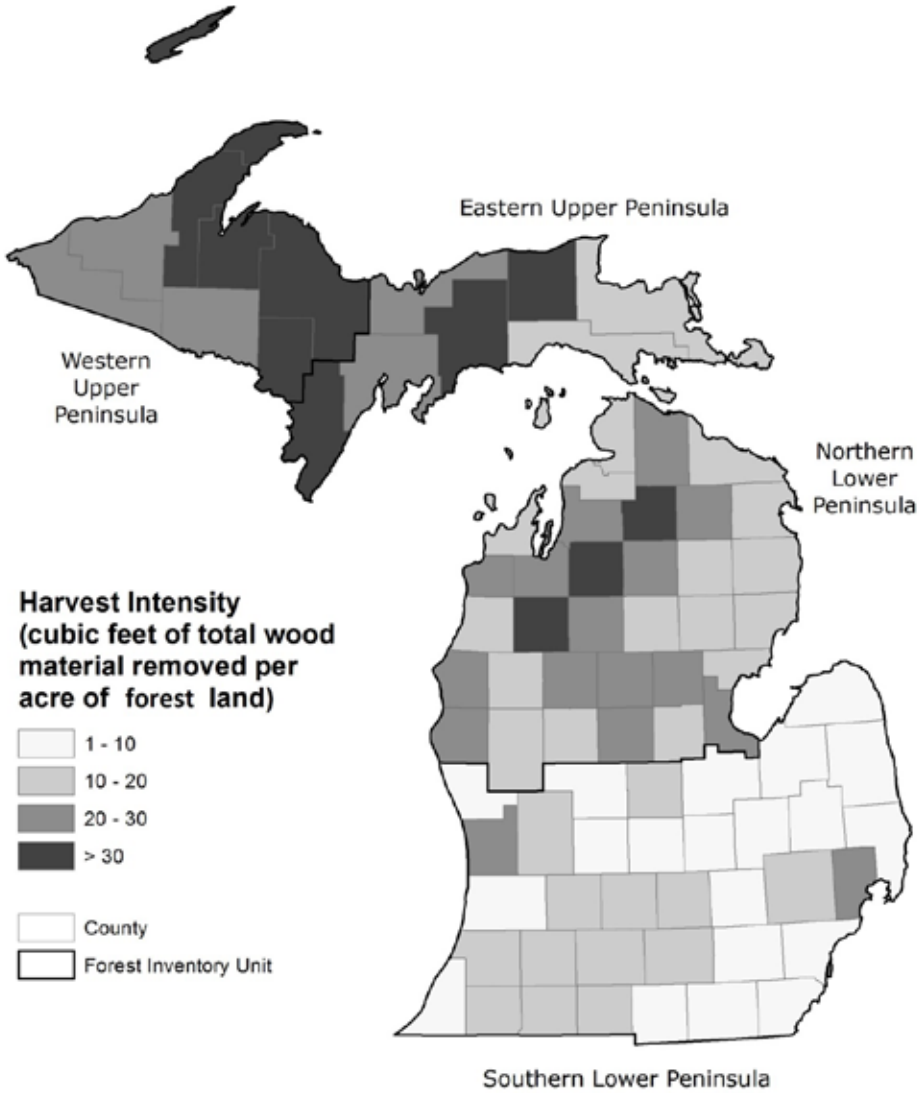

Figure 8.—Harvest intensity for industrial roundwood production, Michigan, 2008.

Harvest Intensity

- Statewide, there were 35 cubic feet of annual net growth (gross growth minus mortality) of growing stock per acre of forest land (Miles 2012) and 21 cubic feet of harvest-related wood removals per acre of forest land. Eleven counties had more had more than 30 cubic feet of total wood material removed per acre of forest land (Fig. 8). The average harvest intensity among Michigan counties was 18.1 cubic feet of wood removals per acre of forest land (For reference, a cord of roundwood contains about 79 cubic feet of wood).
- In 2008, there were 19.8 million acres of forest land in Michigan (Pugh 2010). The net volume in live trees on forest land was 31.5 billion cubic feet. The 445.2 million cubic feet of total wood material removed due to harvesting (Table 10) was 1.4 percent of the total live volume (trees at least 5 inches d.b.h.).
- The Western Upper Peninsula unit had the greatest harvest intensity, with 30.1 cubic feet of wood removals per acre of forest land, followed by the Eastern Upper Peninsula unit with 23.8 cubic feet of removals per forest land acre, the Northern Lower Peninsula unit (21.8 cubic feet per acre), and the Southern Lower Peninsula unit (9.8 cubic feet per acre).

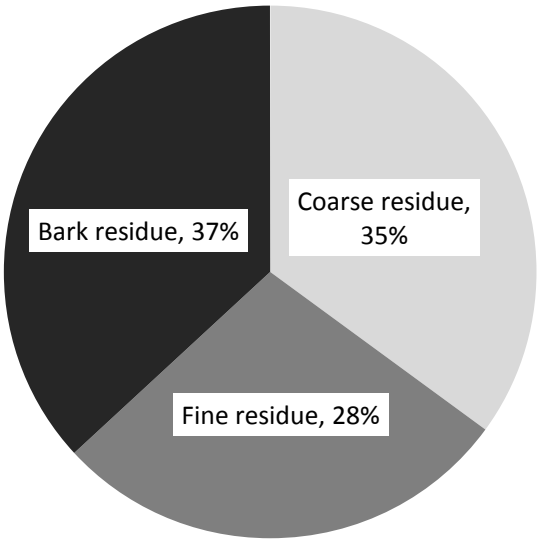

Figure 9.—Distribution of residues generated by primary wood-using mills by type of residue, Michigan, 2008.

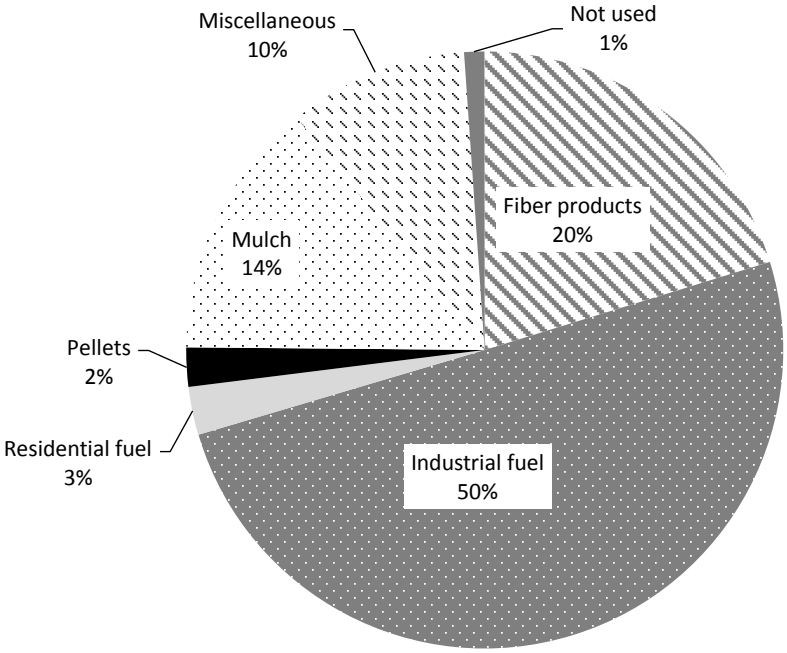

Figure 10.—Distribution of residues generated by primary wood-using mills by method of disposal, Michigan, 2008.

Primary Mill Residues

- In converting industrial roundwood into products, Michigan's primary wood-using industries generated 2.6 million green tons of coarse wood residue (slabs, edgings, and veneer cores), fine wood residue (sawdust and veneer clippings), and bark residue (Table 14, Fig. 9).
- Fifty percent of mill residues generated were used for industrial fuel. Fiber products consumed 20 percent of mill residues and mulch consumed 14 percent. Only 1 percent of residues generated went unused (Fig. 10).
- The top disposal method of coarse wood residue was fiber products at 43 percent of the total. Industrial fuel was the top disposal method for fine wood residue (50 percent of total) and bark residues (68 percent of total).

ACKNOWLEDGMENTS

Special thanks are given to the primary wood-using firms for supplying information for this study and to the Michigan Department of Natural Resources for its cooperation in canvassing survey respondents. We would also like to thank Anthony Weatherspoon (MI-DNR, retired) who lead the data collection effort for the 2008 mill survey.

LITERATURE CITED

Hackett, R.L.; Pilon, J. 1993. **Michigan timber industry: an assessment of timber product output and use, 1990**. Resour. Bull. NC-144. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 56 p.

Hackett, R.L.; Pilon, J. 1997. **Michigan timber industry: an assessment of timber product output and use, 1994**. Resour. Bull. NC-189. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 66 p.

Haugen, D.E.; Pilon, J. 2002. **Michigan timber industry: an assessment of timber product output and use, 1996**. Resour. Bull. NC-203. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 85 p.

Haugen, D.E.; Weatherspoon, A. 2003. **Michigan timber industry: an assessment of timber product output and use, 1998**. Resour. Bull. NC-212. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 83 p.

Haugen, D.E.; Weatherspoon, A.K. 2010. **Michigan timber industry: an assessment of timber product output and use, 2004**. Resour. Bull. NRS-40. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 91 p.

May, D.M.; Pilon, J. 1995. **Michigan timber industry: an assessment of timber product output and use, 1992**. Resour. Bull. NC-162. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 64 p.

Miles, P.D. 2012. **Forest Inventory EVALIDator web-application version 1.5.00.** Washington, DC: U.S. Department of Agriculture, Forest Service. [Available only at: http://apps.fs.fed.us/Evalidator/tmattribute.jsp].

Piva, Ronald J. 2014. **Pulpwood production in the northern region, 2007** Resour. Bull. NRS-92. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 95 p.

Piva, R.J.; Weatherspoon, A.K. 2010. **Michigan timber industry: an assessment of timber product output and use, 2006**. Resour. Bull. NRS-42. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 66 p.

Pugh, S.A. 2010. **Michigan's forest resources, 2008**. Res. Note NRS-50. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.

U.S. Census Bureau. 2007. **2007 Economic census, Michigan – manufacturing: area series: industry statistics for the states, metropolitan and micropolitan statistical areas, counties, and places: 2007**. Washington DC: U.S. Department of Commerce, Bureau of Census. Available at http://factfinder.census.gov. [Accessed February 10, 2012].

APPENDIX

Definition of Terms

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

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

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

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

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

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

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

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

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

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

Forest land. Land at least 10 percent stocked with trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

International 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.

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

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

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

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

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

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

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

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

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

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

Primary wood-using mills. Mills receiving roundwood or chips from roundwood for processing into products such as lumber, veneer, 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 in a geographic area plus all roundwood material exported to other geographical areas.

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

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

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

Rough tree. A tree that does not meet regional merchantability standards because of excessive sound cull (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 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.

Common and Scientific Names of Tree Species by Species Group

Softwoods

Cedars	
Atlantic white-cedar	*Chamaecyparis thyoides*
Eastern redcedar	*Juniperus virginiana*
Balsam fir	*Abies balsamea*
Eastern hemlock	*Tsuga canadensis*
Shortleaf pine	*Pinus echinata*
Loblolly pine	*Pinus taeda*
Red pine	*Pinus resinosa*
White pine	*Pinus strobus*
Other pines	
Table Mountain pine	*Pinus pungens*
pitch pine	*Pinus rigida*
scotch pine	*Pinus sylvestris*
Virginia pine	*Pinus virginiana*
Spruce	
Norway spruce	*Picea abies*
white spruce	*Picea glauca*
red spruce	*Picea rubens*

Hardwoods

Ash	
white ash	*Fraxinus americana*
black ash	*Fraxinus nigra*
green ash	*Fraxinus pennsylvanica*
Aspen/balsam poplar	
bigtooth aspen	*Populus grandidentata*
quaking aspen	*Populus tremuloides*
Basswood	
American basswood	*Tilia americana*
white basswood	*Tilia heterophylla*
American beech	*Fagus grandifolia*
Yellow birch	*Betula alleghaniensis*
Paper birch	*Betula papyifera*
Other birch	
sweet birch	*Betula lenta*
river birch	*Betula nigra*
Black cherry	*Prunus serotina*
Black walnut	*Juglans nigra*
Elm	
winged elm	*Ulmus alata*
American elm	*Ulmus americana*
slippery elm	*Ulmus rubra*

Common and scientific names continued

Hickory	
mockernut hickory	*Carya alba*
bitternut hickory	*Carya cordiformis*
pignut hickory	*Carya glabra*
shellbark hickory	*Carya laciniosa*
shagbark hickory	*Carya ovata*
Hard maple	
black maple	*Acer nigrum*
xugar maple	*Acer saccharum*
Soft maple	
boxelder	*Acer negundo*
xtriped maple	*Acer pensylvanicum*
red maple	*Acer rubrum*
silver maple	*Acer saccharinum*
mountain maple	*Acer spicatum*
Red oak group	
scarlet oak	*Quercus coccinea*
southern red oak	*Quercus falcata*
shingle oak	*Quercus imbricaria*
pin oak	*Quercus palustris*
northern red oak	*Quercus rubra*
black oak	*Quercus velutina*
White oak group	
white oak	*Quercus alba*
swamp white oak	*Quercus bicolor*
swamp chestnut oak	*Quercus michauxii*
chinkapin oak	*Quercus muehlenbergii*
dhestnut oak	*Quercus prinus*
post oak	*Quercus stellata*
Sweetgum	*Liquidambar styraciflua*
American sycamore	*Platanus occidentalis*
Yellow-poplar	*Liriodendron tulipifera*
Other hardwoods	
Ohio buckeye	*Aesculus glabra*
yellow buckeye	*Aeseulus octandra*
common serviceberry	*Amelanchier arborea*
American hornbeam	*Carpinus caroliniana*
American chestnut	*Castanea dentata*
northern catalpa	*Catalpa speciosa*
hackberry	*Celtis occidentalis*
eastern redbud	*Cercis canadensis*
flowering dogwood	*Cornus florida*
hawthorn spp.	*Crataegus spp.*
common persimmon	*Diospyros virginiana*

Common and scientific names continued

honeylocust	*Gleditsia triacanthos*
butternut	*Juglans cinerea*
cucumbertree	*Magnolia acuminata*
mountain or Fraser magnolia	*Magnolia fraseri*
umbrella magnolia	*Magnolia tripetala*
apple spp.	*Malus spp*.
blackgum	*Nyssa sylvatica*
eastern hophornbeam	*Ostrya virginiana*
sourwood	*Oxydendrum arboreum*
paulownia, empress-tree	*Paulownia tomentosa*
pin cherry	*Prunus pensylvanica*
chokecherry	*Prunus virginiana*
black locust	*Robinia pseudoacacia*
black willow	*Salix nigra*
wassafras	*Sassafras albidum*
American mountain-ash	*Sorbus americana*

Table Titles

Table 1.—Conversion factors from reported unit of measure to standard unit of measure (This table is in the Study Methods section, page 2.)

Table 2.—Number of active primary wood-using mills by mill type and survey year, Michigan

Table 3.—Industrial roundwood receipts, in million cubic feet, by mill type, survey year, and softwoods and hardwoods, Michigan

Table 4.—Industrial roundwood receipts, in thousand cubic feet, by Forest Inventory Unit, species group, and state of origin, Michigan, 2008

Table 5.—Industrial roundwood production, in million cubic feet, by product, softwoods and hardwoods, and survey year, Michigan

Table 6.—Industrial roundwood production, in thousand cubic feet, by Forest Inventory Unit, species group, and state of destination, Michigan, 2008

Table 7.—Industrial roundwood production, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Michigan, 2008

Table 8.—Industrial roundwood production by Forest Inventory Unit, species group, and product, Michigan, 2008

Table 9.—Saw log receipts and production, in thousand board feet, International ¼-inch rule, by Forest Inventory Unit and species group, Michigan, 2006 and 2008

Table 10.—Wood material harvested for industrial roundwood, in thousand cubic feet, by Forest Inventory Unit, source of material, and species group, Michigan, 2008

Table 11.—Growing-stock removals from timberland for industrial roundwood, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Michigan, 2008

Table 12.—Sawtimber removals from timberland for industrial roundwood, in thousand board feet, International ¼-inch rule, by Forest Inventory Unit, county, and species group, Michigan, 2008

Table 13.—Harvest residue generated by industrial roundwood harvesting, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Michigan, 2008

Table 14.—Disposition of residues produced at primary wood-using mills, in thousand tons, green weight, by Forest Inventory Unit, disposition, residue type, and softwoods and hardwoods, Michigan, 2008

TABLES

Table 2.—Number of active primary wood-using mills by mill type and survey year, Michigan[a]

Kind of mill and mill size		Survey Year								
		1990	1992	1994	1996	1998	2000	2004	2006	2008
Sawmills	Large[b]	27	30	35	25	35	36	37	39	34
	Medium[c]	108	107	98	97	97	84	63	66	57
	Small[d]	209	188	157	167	154	141	134	137	144
	Total	344	325	290	289	286	261	234	242	235
Veneer mills		7	7	5	4	5	5	4	4	4
Pulp and composite product mills		11	11	11	12	12	12	12	8	8
Industrial fuelwood[e]		8	7	9	5	4	5	4	6	7
Post and pole mills		19	6	6	10	14	11	10	12	13
Other products[f]		16	10	8	12	15	15	12	13	15
All mills		405	366	329	332	336	309	276	285	282

[a] *Mills that produce more than one product are counted only for the product they process the most.*
[b] *Annual lumber production in excess of 5 million board feet.*
[c] *Annual lumber production from 1 million to 5 million board feet.*
[d] *Annual lumber production less than 1 million board feet.*
[e] *Does not include residential fuelwood.*
[f] *Includes plants producing mulch, mine timbers, excelsior, shavings, etc.*

Table 3.—Industrial roundwood receipts, in million cubic feet, by mill type, survey year, and hardwoods and softwoods, Michigan

Kind of mill	Survey Year								
	1990	1992	1994	1996	1998	2000	2004	2006	2008
ALL SPECIES									
Saw mills	99,359	101,649	105,735	92,456	128,074	131,772	137,672	139,367	112,381
Veneer mills	6,784	6,519	7,205	8,654	5,947	9,390	6,455	6,378	5,947
Pulp and composite product mills	207,623	200,610	235,654	222,370	212,921	215,123	214,318	175,543	190,956
Cabin log mills	1,224	1,004	675	1,125	1,598	1,877	1,401	280	506
Industrial fuelwood[a]	15,445	18,030	23,799	19,372	8,195	8,870	10,088	27,359	31,105
Post and poles	2,869	3,030	2,412	2,949	2,478	3,844	4,395	5,731	7,380
Other products[b]	1,304	51	24	13	29	4	738	507	1,524
Total	334,607	330,893	375,504	346,939	359,242	370,879	375,068	355,167	349,799
SOFTWOODS									
Saw mills	21,320	22,633	22,185	21,101	35,693	46,196	60,044	60,282	50,352
Veneer mills	1,789	470	407	466	698	836	651	889	861
Pulp and composite product mills	29,790	33,065	33,535	37,652	34,754	34,634	34,672	21,182	28,663
Cabin log mills	1,224	1,004	675	1,125	1,575	1,877	1,401	278	288
Industrial fuelwood[a]	2,976	8,656	7,777	12,622	2,554	2,554	2,284	6,473	5,780
Post and poles	2,869	3,030	2,392	2,329	2,456	3,844	4,395	5,731	7,380
Other products[b]	16	48	20	13	17	4	2	41	176
Total	59,983	68,906	66,991	75,308	77,746	89,944	103,450	94,876	93,499
HARDWOODS									
Saw mills	78,039	79,015	83,550	71,355	92,381	85,576	77,628	79,086	62,028
Veneer mills	4,995	6,049	6,798	8,187	5,249	8,554	5,804	5,490	5,087
Pulp and composite product mills	177,833	167,545	202,120	184,718	178,167	180,489	179,646	154,361	162,293
Cabin log mills	--	--	--	--	23	--	--	2	218
Industrial fuelwood[a]	12,469	9,374	16,022	6,750	5,641	6,316	7,804	20,886	25,325
Post and poles	--	--	20	620	22	--	--	--	--
Other products[b]	1,288	4	4	--	12	--	736	466	1,348
Total	274,624	261,987	308,513	271,631	281,495	280,935	271,618	260,290	256,299

[a] *Does not include residential fuelwood.*

[b] *Includes plants producing mulch, mine timbers, excelsior, shavings, etc.*

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

Table 4.—Industrial roundwood receipts, in thousand cubic feet, by Forest Inventory Unit, species group, and state of origin, Michigan, 2008
ALL UNITS

		State of origin									
Species group	Total	Illinois	Indiana	Michigan	Minnesota	Missouri	New York	Pennsyl-vania	Wisconsin	Other U.S.[a]	Canada
Softwoods											
Eastern redcedar	62	--	--	62	--	--	--	--	--	--	--
Balsam fir	6,559	--	--	5,912	--	--	--	--	633	--	15
Hemlock	6,156	--	--	5,865	--	--	--	--	285	--	6
Northern white-cedar	6,369	--	--	6,262	--	--	--	--	107	--	0
Jack pine	22,349	--	--	18,418	--	--	--	--	3,886	--	45
Loblolly/shortleaf pine	48	--	--	--	--	--	--	--	--	48	--
Red pine	41,904	253	--	38,741	150	--	--	--	2,753	0	7
White pine	4,086	--	--	3,868	98	--	--	--	116	--	4
Other pine	495	--	--	495	--	--	--	--	0	--	--
Spruce	4,744	--	--	4,123	171	--	--	--	414	--	35
Tamarack	726	--	--	674	15	--	--	--	35	--	2
Total	93,499	253	--	84,420	433	--	--	--	8,229	48	116
Hardwoods											
Ash	7,671	5	2	7,019	--	--	--	--	587	1	57
Aspen/balsam poplar	80,628	--	--	71,441	1,612	--	--	--	5,279	--	2,297
Basswood	9,564	18	0	8,141	--	--	--	--	1,323	--	82
Beech	8,957	--	--	8,148	--	--	--	--	436	--	373
White birch	6,769	--	--	6,226	--	--	3	--	483	--	56
Yellow birch	3,202	--	--	2,815	--	--	14	--	288	--	85
Black cherry	4,798	43	31	4,304	--	--	--	53	323	0	45
Black walnut	1,448	--	126	1,322	--	--	--	--	--	--	--
Cottonwood	508	--	--	507	--	--	--	--	--	0	--
Elm	597	21	--	571	--	--	--	--	5	--	0
Hickory	738	--	1	730	--	--	--	--	--	7	--
Hard maple	61,258	--	--	52,986	--	--	138	13	6,982	--	1,139
Soft maple	45,234	--	13	40,069	--	--	--	--	4,462	--	690
Red oak group	18,701	3	11	17,145	--	--	--	--	1,507	--	36
White oak group	5,578	--	41	5,105	--	431	--	--	--	1	--
Sycamore	15	--	--	15	--	--	--	--	--	--	--
Yellow-poplar	83	--	--	81	--	--	--	--	--	3	--
Other hardwoods	549	--	1	367	--	--	--	--	179	1	--
Total	256,299	90	226	226,991	1,612	431	155	65	21,854	14	4,859
State total	349,799	342	226	311,412	2,045	431	155	65	30,083	63	4,975

(Table 4 continued on next page)

(Table 4 continued)

EASTERN UPPER PENINSULA

Species group	Total	State of origin									
		Illinois	Indiana	Michigan	Minnesota	Missouri	New York	Pennsyl-vania	Wisconsin	Other U.S.[a]	Canada
Softwoods											
Eastern redcedar	62	--	--	62	--	--	--	--	--	--	--
Balsam fir	3,991	--	--	3,861	--	--	--	--	115	--	15
Hemlock	5,901	--	--	5,610	--	--	--	--	285	--	6
Northern white-cedar	5,000	--	--	4,893	--	--	--	--	107	--	0
Jack pine	5,085	--	--	4,977	--	--	--	--	99	--	8
Red pine	4,231	--	--	3,950	--	--	--	--	274	--	7
White pine	1,705	--	--	1,667	--	--	--	--	34	--	4
Spruce	1,593	--	--	1,548	--	--	--	--	40	--	5
Tamarack	560	--	--	541	--	--	--	--	16	--	2
Total	28,128	--	--	27,109	--	--	--	--	971	--	49
Hardwoods											
Ash	510	--	--	419	--	--	--	--	91	--	1
Aspen/balsam poplar	21,308	--	--	18,612	--	--	--	--	1,166	--	1,529
Basswood	519	--	--	517	--	--	--	--	2	--	0
Beech	4,619	--	--	4,577	--	--	--	--	29	--	12
White birch	2,244	--	--	2,206	--	--	3	--	24	--	11
Yellow birch	1,087	--	--	1,007	--	--	14	--	18	--	49
Black cherry	361	--	--	357	--	--	--	--	3	--	1
Elm	5	--	--	5	--	--	--	--	--	--	--
Hard maple	10,332	--	--	9,772	--	--	73	--	257	--	229
Soft maple	6,771	--	--	6,711	--	--	--	--	39	--	21
Red oak group	533	--	--	470	--	--	--	--	54	--	9
Other hardwoods	179	--	--	--	--	--	--	--	179	--	--
Total	48,468	--	--	44,655	--	--	90	--	1,861	--	1,862
Unit total	76,596	--	--	71,764	--	--	90	--	2,832	--	1,911

(Table 4 continued on next page)

(Table 4 continued)

WESTERN UPPER PENINSULA

Species group	Total	State of origin									
		Illinois	Indiana	Michigan	Minnesota	Missouri	New York	Pennsyl-vania	Wisconsin	Other U.S.[a]	Canada
Softwoods											
Balsam fir	2,246	--	--	1,728	--	--	--	--	517	--	--
Hemlock	7	--	--	7	--	--	--	--	--	--	--
Northern white-cedar	47	--	--	47	--	--	--	--	--	--	--
Jack pine	11,926	--	--	8,102	--	--	--	--	3,787	--	37
Red pine	9,029	253	--	6,148	150	--	--	--	2,479	--	--
White pine	538	--	--	359	98	--	--	--	82	--	--
Other pine	4	--	--	4	--	--	--	--	0	--	--
Spruce	2,784	--	--	2,208	171	--	--	--	375	--	30
Tamarack	94	--	--	61	15	--	--	--	18	--	--
Total	26,675	253	--	18,664	433	--	--	--	7,258	--	67
Hardwoods											
Ash	2,345	5	--	1,787	--	--	--	--	496	--	56
Aspen/balsam poplar	21,599	--	--	15,108	1,612	--	--	--	4,112	--	767
Basswood	4,937	18	--	3,516	--	--	--	--	1,321	--	82
Beech	2,871	--	--	2,104	--	--	--	--	407	--	361
White birch	3,264	--	--	2,760	--	--	--	--	459	--	45
Yellow birch	1,890	--	--	1,589	--	--	--	--	271	--	31
Black cherry	1,581	43	--	1,175	--	--	--	--	320	--	44
Elm	36	21	--	10	--	--	--	--	5	--	0
Hard maple	31,225	--	--	23,634	--	--	--	--	6,710	--	881
Soft maple	20,418	--	--	15,328	--	--	--	--	4,424	--	666
Red oak group	2,425	3	--	944	--	--	--	--	1,452	--	26
Total	92,593	90	--	67,955	1,612	--	--	--	19,978	--	2,959
Unit total	119,269	342	--	86,619	2,045	--	--	--	27,237	--	3,026

(Table 4 continued on next page)

(Table 4 continued)

NORTHERN LOWER PENINSULA

Species group	Total	State of origin									
		Illinois	Indiana	Michigan	Minnesota	Missouri	New York	Pennsyl-vania	Wisconsin	Other U.S.[a]	Canada
Softwoods											
Eastern redcedar	0	--	--	0	--	--	--	--	--	--	--
Balsam fir	323	--	--	323	--	--	--	--	--	--	--
Hemlock	242	--	--	242	--	--	--	--	--	--	--
Northern white-cedar	1,187	--	--	1,187	--	--	--	--	--	--	--
Jack pine	5,339	--	--	5,339	--	--	--	--	--	--	--
Red pine	28,492	--	--	28,492	--	--	--	--	--	--	--
White pine	1,657	--	--	1,657	--	--	--	--	--	--	--
Other pine	485	--	--	485	--	--	--	--	--	--	--
Spruce	335	--	--	335	--	--	--	--	--	--	--
Tamarack	71	--	--	71	--	--	--	--	--	--	--
Total	38,131	--	--	38,131	--	--	--	--	--	--	--
Hardwoods											
Ash	2,662	--	--	2,662	--	--	--	--	--	--	--
Aspen/balsam poplar	37,036	--	--	37,036	--	--	--	--	--	--	--
Basswood	3,754	--	--	3,754	--	--	--	--	--	--	0
Beech	1,320	--	--	1,320	--	--	--	--	--	--	--
White birch	1,218	--	--	1,218	--	--	--	--	--	--	--
Yellow birch	205	--	--	205	--	--	--	--	--	--	--
Black cherry	715	--	--	715	--	--	--	--	--	--	--
Black walnut	49	--	--	49	--	--	--	--	--	--	--
Cottonwood	89	--	--	89	--	--	--	--	--	--	--
Elm	145	--	--	145	--	--	--	--	--	--	--
Hickory	128	--	--	128	--	--	--	--	--	--	--
Hard maple	16,094	--	--	16,022	--	--	15	13	15	--	29
Soft maple	14,035	--	--	14,033	--	--	--	--	--	--	2
Red oak group	10,834	--	--	10,833	--	--	--	--	--	--	1
White oak group	2,192	--	--	2,192	--	--	--	--	--	--	--
Yellow-poplar	10	--	--	10	--	--	--	--	--	--	--
Other hardwoods	232	--	--	232	--	--	--	--	--	--	--
Total	90,717	--	--	90,643	--	--	15	13	15	--	32
Unit total	128,848	--	--	128,773	--	--	15	13	15	--	32

(Table 4 continued on next page)

(Table 4 continued)

SOUTHERN LOWER PENINSULA

Species group	Total	State of origin									
		Illinois	Indiana	Michigan	Minnesota	Missouri	New York	Pennsyl-vania	Wisconsin	Other U.S.[a]	Canada
Softwoods											
Eastern redcedar	0	--	--	0	--	--	--	--	--	--	--
Hemlock	6	--	--	6	--	--	--	--	--	--	--
Northern white-cedar	135	--	--	135	--	--	--	--	--	--	--
Loblolly/shortleaf pine	48	--	--	--	--	--	--	--	--	48	--
Red pine	152	--	--	152	--	--	--	--	--	0	--
White pine	185	--	--	185	--	--	--	--	--	--	--
Other pine	6	--	--	6	--	--	--	--	--	--	--
Spruce	32	--	--	32	--	--	--	--	--	--	--
Tamarack	1	--	--	1	--	--	--	--	--	--	--
Total	565	--	--	517	--	--	--	--	--	48	--
Hardwoods											
Ash	2,154	--	2	2,151	--	--	--	--	--	1	--
Aspen/balsam poplar	685	--	--	685	--	--	--	--	--	--	--
Basswood	353	--	0	353	--	--	--	--	--	--	--
Beech	147	--	--	147	--	--	--	--	--	--	--
White birch	42	--	--	42	--	--	--	--	--	--	--
Yellow birch	19	--	--	13	--	--	--	--	--	--	6
Black cherry	2,141	--	31	2,057	--	--	--	53	--	0	--
Black walnut	1,399	--	126	1,273	--	--	--	--	--	--	--
Cottonwood	418	--	--	418	--	--	--	--	--	0	--
Elm	411	--	--	411	--	--	--	--	--	--	--
Hickory	611	--	1	602	--	--	--	--	--	7	--
Hard maple	3,608	--	--	3,557	--	--	51	--	--	--	--
Soft maple	4,010	--	13	3,997	--	--	--	--	--	--	--
Red oak group	4,909	--	11	4,898	--	--	--	--	--	--	--
White oak group	3,386	--	41	2,913	--	431	--	--	--	1	--
Sycamore	15	--	--	15	--	--	--	--	--	--	--
Yellow-poplar	74	--	--	71	--	--	--	--	--	3	--
Other hardwoods	138	--	1	136	--	--	--	--	--	1	--
Total	24,521	--	226	23,739	--	431	51	53	--	14	6
Unit total	25,086	--	226	24,256	--	431	51	53	--	63	6

[a] *Includes Kentucky, Mississippi, Ohio, Oregon, Tennesee.*

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 5.—Industrial roundwood production in thousand cubic feet, by mill type, hardwoods and softwoods, and survey year, Michigan

Kind of mill	Survey Year								
	1990	1992	1994	1996	1998	2000	2004	2006	2008
ALL SPECIES									
Saw mills	110,421	110,486	116,132	100,190	132,687	132,569	129,424	134,311	112,779
Veneer mills	7,025	6,226	8,001	9,858	6,673	8,199	6,039	5,517	5,716
Pulp and composite product mills	214,631	209,274	238,012	223,886	210,261	211,436	209,986	170,743	187,236
Cabin log mills	1,316	1,028	737	1,181	1,629	1,884	1,673	588	763
Industrial fuelwood[a]	15,445	18,030	23,781	19,372	8,195	8,870	10,088	27,359	31,105
Post and poles	2,684	2,986	2,373	2,749	2,337	3,690	4,144	5,460	7,276
Other products[b]	1,046	378	719	557	572	715	678	507	1,524
Total	352,568	348,408	389,756	357,794	362,354	367,362	362,032	344,484	346,398
SOFTWOODS									
Saw mills	23,969	24,151	24,667	23,287	36,265	42,208	46,492	52,294	44,719
Veneer mills	645	196	201	502	432	398	330	418	415
Pulp and composite product mills	41,279	44,740	46,786	47,495	40,154	38,539	39,806	24,335	33,923
Cabin log mills	1,316	1,028	737	1,181	1,606	1,884	1,673	582	541
Industrial fuelwood[a]	2,976	8,656	7,777	12,622	2,554	2,554	2,284	6,473	5,780
Post and poles	2,684	2,986	2,353	2,129	2,315	3,690	4,144	5,460	7,276
Other products[b]	16	48	20	13	17	4	2	41	176
Total	72,886	81,805	82,541	87,231	83,342	89,276	94,731	89,603	92,830
HARDWOODS									
Saw mills	86,452	86,335	91,465	76,903	96,422	90,362	82,932	82,017	68,059
Veneer mills	6,380	6,030	7,800	9,355	6,241	7,800	5,710	5,099	5,301
Pulp and composite product mills	173,351	164,534	191,226	176,391	170,107	172,897	170,180	146,408	153,313
Cabin log mills	--	--	--	--	23	--	--	6	222
Industrial fuelwood[a]	12,469	9,374	16,004	6,750	5,641	6,316	7,804	20,886	25,325
Post and poles	--	--	20	620	22	--	--	--	--
Other products[b]	1,030	330	699	544	555	711	676	466	1,348
Total	279,682	266,604	307,215	270,563	279,012	278,086	267,302	254,881	253,568

[a] *Does not include residential fuelwood.*

[b] *Includes mulch, mine timbers, excelsior, shavings, etc.*

All table cells without observations are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100 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, species group, and state of destination, Michigan, 2008

ALL UNITS

		State of destiniation								
Species group	Total	Indiana	Kentucky	Michigan	Minnesota	Ohio	Virginia	Wisconsin	Canada	Other countries
Softwoods										
Eastern redcedar	62	--	--	62	--	--	--	--	--	--
Balsam fir	6,863	--	--	5,912	4	--	--	417	530	--
Hemlock	5,928	--	--	5,865	--	--	--	64	--	--
Northern white-cedar	6,277	--	--	6,262	--	--	--	15	--	--
Jack pine	20,784	--	--	18,418	--	--	--	1,703	663	--
Red pine	40,029	2	--	38,741	--	--	--	1,275	--	10
White pine	4,235	12	--	3,868	--	--	--	327	28	--
Other pine	548	3	--	495	--	49	--	0	--	--
Spruce	7,420	--	--	4,123	0	--	--	2,186	1,110	--
Tamarack	683	--	--	674	--	--	--	9	--	--
Total	92,830	17	--	84,420	4	49	--	5,996	2,332	10
Hardwoods										
Ash	8,108	227	--	7,019	57	16	--	769	15	5
Aspen/balsam poplar	73,812	21	--	71,441	177	--	--	2,080	93	--
Basswood	8,867	51	--	8,141	20	--	--	640	3	13
Beech	8,191	12	--	8,148	--	1	--	18	13	--
White birch	10,856	--	--	6,226	0	--	--	4,313	306	11
Yellow birch	3,358	6	--	2,815	2	--	--	446	90	--
Black cherry	4,819	371	23	4,304	--	3	--	90	2	27
Black walnut	1,532	144	12	1,322	--	8	5	0	3	36
Cottonwood	538	27	--	507	--	1	--	2	--	--
Elm	789	47	--	571	--	--	--	169	3	--
Hickory	880	143	1	730	--	--	--	3	1	2
Hard maple	62,760	321	44	52,986	3,898	250	89	4,953	112	106
Soft maple	42,801	379	--	40,069	--	3	--	2,345	1	3
Red oak group	19,434	564	125	17,145	--	112	--	1,286	157	44
White oak group	6,070	567	33	5,105	--	42	16	179	92	37
Sweetgum	2	2	--	--	--	--	--	--	--	--
Sycamore	39	23	--	15	--	1	--	--	--	--
Yellow-poplar	219	136	1	81	--	2	--	--	--	--
Other hardwoods	491	62	--	367	--	--	--	59	2	--
Total	253,568	3,103	239	226,991	4,154	441	110	17,353	894	282
State total	346,398	3,120	239	311,412	4,159	490	110	23,350	3,226	293

(Table 6 continued on next page)

(Table 6 continued)

EASTERN UPPER PENINSULA

Species group	Total	State of destiniation								
		Indiana	Kentucky	Michigan	Minnesota	Ohio	Virginia	Wisconsin	Canada	Other countries
Softwoods										
Balsam fir	2,760	--	--	2,300	--	--	--	212	248	--
Hemlock	1,964	--	--	1,938	--	--	--	26	--	--
Northern white-cedar	4,823	--	--	4,812	--	--	--	11	--	--
Jack pine	8,697	--	--	7,401	--	--	--	1,296	--	--
Red pine	6,209	--	--	5,475	--	--	--	734	--	--
White pine	805	--	--	694	--	--	--	94	17	--
Other pine	4	--	--	3	--	--	--	0	--	--
Spruce	3,463	--	--	1,635	--	--	--	1,022	806	--
Tamarack	290	--	--	285	--	--	--	4	--	--
Total	29,013	--	--	24,544	--	--	--	3,399	1,070	--
Hardwoods										
Ash	985	--	--	609	--	--	--	374	--	1
Aspen/balsam poplar	12,482	--	--	11,573	--	--	--	818	91	--
Basswood	1,090	--	--	949	--	--	--	140	0	1
Beech	3,515	--	--	3,499	--	--	--	14	1	--
White birch	4,526	--	--	3,077	--	--	--	1,176	272	1
Yellow birch	910	--	--	716	--	--	--	104	90	--
Black cherry	494	--	--	484	--	--	--	11	--	--
Elm	97	--	--	10	--	--	--	87	--	--
Hickory	1	--	--	--	--	--	--	1	--	--
Hard maple	11,061	--	7	9,406	92	--	14	1,449	89	4
Soft maple	9,529	--	--	8,216	--	--	--	1,312	0	--
Red oak group	785	--	--	295	--	--	--	489	--	1
White oak group	163	--	--	0	--	--	--	163	--	--
Other hardwoods	1	--	--	--	--	--	--	1	--	--
Total	45,637	--	7	38,835	92	--	14	6,138	543	8
Unit total	74,650	--	7	63,379	92	--	14	9,537	1,613	8

(Table 6 continued on next page)

(Table 6 continued)

WESTERN UPPER PENINSULA

		State of destiniation								
Species group	**Total**	**Indiana**	**Kentucky**	**Michigan**	**Minnesota**	**Ohio**	**Virginia**	**Wisconsin**	**Canada**	**Other countries**
Softwoods										
Balsam fir	3,690	--	--	3,272	4	--	--	205	209	--
Hemlock	3,702	--	--	3,664	--	--	--	38	--	--
Northern white-cedar	872	--	--	868	--	--	--	4	--	--
Jack pine	4,890	--	--	4,500	--	--	--	391	--	--
Red pine	5,076	--	--	4,548	--	--	--	528	--	--
White pine	1,598	--	--	1,372	--	--	--	225	--	--
Other pine	2	--	--	2	--	--	--	0	--	--
Spruce	3,461	--	--	2,132	0	--	--	1,164	165	--
Tamarack	322	--	--	318	--	--	--	4	--	--
Total	23,613	--	--	20,675	4	--	--	2,559	375	--
Hardwoods										
Ash	2,009	--	--	1,570	57	--	--	379	--	3
Aspen/balsam poplar	22,026	--	--	20,586	177	--	--	1,261	2	--
Basswood	3,626	--	--	3,103	20	--	--	492	--	11
Beech	3,180	--	--	3,180	--	--	--	1	--	--
White birch	5,019	--	--	1,873	0	--	--	3,137	--	9
Yellow birch	2,232	--	--	1,889	2	--	--	342	--	--
Black cherry	1,168	--	--	1,090	--	--	--	76	--	1
Elm	88	--	--	6	--	--	--	82	--	--
Hickory	1	--	--	--	--	--	--	1	--	--
Hard maple	32,502	--	34	25,078	3,805	--	67	3,479	--	38
Soft maple	14,809	--	--	13,824	--	--	--	985	--	--
Red oak group	1,808	--	--	1,061	--	--	--	742	--	5
White oak group	4	--	--	--	--	--	--	4	--	--
Other hardwoods	52	--	--	--	--	--	--	52	--	--
Total	88,525	--	34	73,259	4,062	--	67	11,033	2	68
Unit total	112,138	--	34	93,934	4,066	--	67	13,592	377	68

(Table 6 continued on next page)

(Table 6 continued)

NORTHERN LOWER PENINSULA

Species group	Total	State of destiniation								
		Indiana	Kentucky	Michigan	Minnesota	Ohio	Virginia	Wisconsin	Canada	Other countries
Softwoods										
Balsam fir	413	--	--	339	--	--	--	0	73	--
Hemlock	260	--	--	260	--	--	--	--	--	--
Northern white-cedar	582	--	--	582	--	--	--	--	--	--
Jack pine	7,153	--	--	6,473	--	--	--	17	663	--
Red pine	26,889	--	--	26,865	--	--	--	13	--	10
White pine	1,664	--	--	1,645	--	--	--	7	12	--
Other pine	394	--	--	394	--	--	--	0	--	--
Spruce	430	--	--	290	--	--	--	0	139	--
Tamarack	71	--	--	70	--	--	--	0	--	--
Total	37,855	--	--	36,919	--	--	--	38	887	10
Hardwoods										
Ash	3,101	--	--	3,081	--	--	--	11	9	0
Aspen/balsam poplar	38,410	--	--	38,409	--	--	--	1	--	--
Basswood	3,852	--	--	3,841	--	--	--	9	2	--
Beech	1,344	--	--	1,342	--	--	--	2	0	--
White birch	1,280	--	--	1,245	--	--	--	1	34	--
Yellow birch	195	--	--	194	--	--	--	0	1	--
Black cherry	707	--	--	695	--	--	--	2	1	8
Black walnut	93	--	--	63	--	--	--	--	--	31
Cottonwood	49	--	--	49	--	--	--	--	--	--
Elm	157	--	--	157	--	--	--	--	0	--
Hickory	60	--	--	59	--	--	--	--	--	2
Hard maple	16,634	--	3	16,537	--	--	8	24	17	45
Soft maple	14,426	--	--	14,382	--	--	--	41	1	2
Red oak group	11,681	--	91	11,403	--	--	--	40	136	11
White oak group	2,655	--	19	2,566	--	--	7	8	39	15
Yellow-poplar	1	--	--	1	--	--	--	--	--	--
Other hardwoods	233	--	--	230	--	--	--	2	1	--
Total	94,878	--	113	94,253	--	--	15	143	241	113
Unit total	132,733	--	113	131,172	--	--	15	181	1,128	123

(Table 6 continued on next page)

(Table 6 continued)

SOUTHERN LOWER PENINSULA

		State of destiniation								
Species group	**Total**	**Indiana**	**Kentucky**	**Michigan**	**Minnesota**	**Ohio**	**Virginia**	**Wisconsin**	**Canada**	**Other countries**
Softwoods										
Eastern redcedar	62	--	--	62	--	--	--	--	--	--
Hemlock	3	--	--	3	--	--	--	--	--	--
Jack pine	44	--	--	44	--	--	--	--	--	--
Red pine	1,855	2	--	1,853	--	--	--	--	--	0
White pine	169	12	--	156	--	--	--	0	--	--
Other pine	149	3	--	96	--	49	--	--	--	--
Spruce	66	--	--	66	--	--	--	--	--	--
Tamarack	1	--	--	1	--	--	--	--	--	--
Total	2,349	17	--	2,282	--	49	--	0	--	0
Hardwoods										
Ash	2,013	227	--	1,760	--	16	--	4	6	0
Aspen/balsam poplar	895	21	--	874	--	--	--	0	--	--
Basswood	299	51	--	247	--	--	--	0	1	--
Beech	153	12	--	127	--	1	--	0	12	--
White birch	32	--	--	32	--	--	--	--	--	--
Yellow birch	21	6	--	16	--	--	--	--	--	--
Black cherry	2,451	371	23	2,034	--	3	--	1	1	18
Black walnut	1,438	144	12	1,259	--	8	5	0	3	6
Cottonwood	489	27	--	458	--	1	--	2	--	--
Elm	447	47	--	398	--	--	--	0	2	--
Hickory	818	143	1	672	--	--	--	1	1	0
Hard maple	2,563	321	--	1,965	--	250	--	1	7	19
Soft maple	4,038	379	--	3,647	--	3	--	7	--	1
Red oak group	5,160	564	34	4,386	--	112	--	14	21	27
White oak group	3,249	567	14	2,539	--	42	9	4	53	21
Sweetgum	2	2	--	--	--	--	--	--	--	--
Sycamore	39	23	--	15	--	1	--	--	--	--
Yellow-poplar	218	136	1	79	--	2	--	--	--	--
Other hardwoods	205	62	--	138	--	--	--	3	2	--
Total	24,528	3,103	85	20,645	--	441	14	39	108	93
Unit total	26,877	3,120	85	22,927	--	490	14	40	108	94

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, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Michigan, 2008

Forest Inventory Unit and county	All species	Softwoods											Hardwoods		
		Eastern redcedar	Balsam fir	Hemlock	Northern white-cedar	Jack pine	Red pine	White pine	Other pine	Spruce	Tama-rack	Total softwoods	Ash	Aspen/ balsam poplar	Bass-wood
Eastern Upper Peninsula															
Alger	10,477	--	381	446	180	522	781	97	--	318	42	2,767	174	714	184
Chippewa	10,963	--	321	257	117	2,136	1,005	52	--	967	15	4,870	94	2,144	84
Delta	10,900	--	463	338	767	1,545	1,358	182	0	288	58	4,998	88	1,811	149
Luce	13,528	--	237	194	153	2,109	808	86	0	387	22	3,996	248	1,696	160
Mackinac	7,214	--	307	71	543	521	556	42	--	568	15	2,625	114	1,356	65
Menominee	12,691	--	734	517	2,796	373	382	239	3	565	102	5,711	184	3,327	386
Schoolcraft	8,878	--	318	140	267	1,491	1,320	106	--	370	36	4,046	83	1,433	62
Total	74,650	--	2,760	1,964	4,823	8,697	6,209	805	4	3,463	290	29,013	985	12,482	1,090
Western Upper Peninsula															
Baraga	15,484	--	466	664	34	526	424	83	--	330	34	2,561	268	1,778	307
Dickinson	11,292	--	608	123	327	336	398	136	--	519	57	2,503	141	3,466	712
Gogebic	11,229	--	194	160	18	73	644	104	1	277	8	1,480	324	1,527	494
Houghton	13,382	--	177	456	51	548	748	39	--	228	11	2,259	305	1,733	426
Iron	11,903	--	737	254	72	474	1,047	261	--	801	67	3,713	103	2,739	377
Keweenaw	6,042	--	95	81	35	30	59	28	--	107	5	441	111	316	229
Marquette	29,082	--	1,093	1,499	310	2,669	1,323	885	0	925	128	8,831	273	5,796	460
Ontonagon	13,725	--	320	466	25	235	433	60	0	274	11	1,825	485	4,671	621
Total	112,138	--	3,690	3,702	872	4,890	5,076	1,598	2	3,461	322	23,613	2,009	22,026	3,626
Northern Lower Peninsula															
Alcona	4,143	--	7	4	74	179	490	35	4	19	3	813	86	1,695	76
Alpena	4,383	--	13	1	101	65	340	55	4	54	5	638	235	1,799	93
Antrim	3,498	--	1	8	1	31	250	4	3	0	--	298	157	461	547
Arenac	1,381	--	0	2	14	18	200	19	--	0	--	255	111	464	9
Bay	584	--	--	3	--	--	2	6	--	--	--	12	32	257	3
Benzie	2,969	--	2	10	--	119	380	27	0	7	--	544	112	628	103
Charlevoix	1,793	--	8	7	3	8	262	21	--	7	7	324	57	256	195
Cheboygan	6,526	--	25	7	6	210	916	50	0	30	11	1,256	120	2,781	443
Clare	4,912	--	13	5	0	268	742	21	--	1	2	1,054	95	2,036	50
Crawford	5,448	--	11	9	1	1,404	1,100	62	1	14	3	2,603	9	1,120	40
Emmet	2,747	--	11	3	3	33	324	10	6	11	5	406	141	483	267
Gladwin	3,628	--	4	2	4	174	370	45	0	0	0	599	126	1,805	65
Grand Traverse	3,874	--	18	7	--	139	1,006	129	18	8	7	1,333	69	749	75
Iosco	3,322	--	9	5	1	362	1,741	57	--	7	3	2,185	42	437	11
Isabella	2,032	--	--	3	0	24	190	9	6	0	2	234	163	715	62
Kalkaska	8,025	--	63	16	1	408	2,810	107	24	9	2	3,440	83	1,911	207
Lake	5,145	--	--	7	0	523	1,514	112	8	10	2	2,176	21	956	65
Leelanau	1,761	--	2	23	--	21	197	58	1	0	4	306	140	114	50
Manistee	4,202	--	0	28	--	161	1,168	144	5	--	1	1,509	82	436	55
Mason	4,789	--	1	14	--	48	1,104	55	12	2	--	1,236	87	1,556	38
Mecosta	2,265	--	0	24	--	32	364	63	68	19	1	571	58	908	18
Midland	1,643	--	--	--	--	5	39	45	1	--	--	89	119	542	24
Missaukee	3,984	--	44	9	4	170	1,022	39	9	21	6	1,323	62	1,333	68
Montmorency	6,811	--	41	3	145	351	657	67	2	45	2	1,314	78	3,071	251
Newaygo	4,626	--	2	10	--	199	1,240	128	50	--	--	1,628	105	643	39
Oceana	3,394	--	2	12	--	45	838	29	38	21	--	984	123	423	37
Ogemaw	2,895	--	5	4	8	208	410	40	--	2	0	676	58	1,244	26
Osceola	3,744	--	12	17	3	58	497	46	101	2	0	736	98	1,721	32

(Table 7 continued on the next page)

(Table 7 continued)

Oscoda	5,152	--	4	--	3	704	1,203	35	0	8	1	1,958	73	1,521	114
Otsego	8,158	--	3	4	1	308	1,350	29	2	9	1	1,708	81	2,374	493
Presque Isle	4,144	--	74	3	208	235	597	21	--	96	2	1,235	93	1,450	151
Roscommon	3,981	--	22	1	1	309	754	50	0	2	1	1,139	54	1,269	12
Wexford	6,772	--	14	7	--	337	2,811	45	32	26	1	3,272	131	1,252	132
Total	132,733	--	413	260	582	7,153	26,889	1,664	394	430	71	37,855	3,101	38,410	3,852
Southern Lower Peninsula															
Allegan	1,299	--	--	--	--	0	3	1	1	0	--	6	56	6	4
Barry	1,681	--	--	--	--	--	20	4	20	36	--	80	36	10	12
Berrien	542	--	--	--	--	--	--	0	1	--	--	1	55	2	7
Branch	570	--	--	--	--	--	--	--	49	--	--	49	52	3	7
Calhoun	982	--	--	--	--	--	3	0	0	3	--	6	72	7	14
Cass	1,080	--	--	--	--	--	4	4	--	1	--	9	21	3	5
Clinton	151	--	--	--	--	--	0	--	0	--	--	0	13	0	7
Eaton	596	--	--	--	--	--	1	1	0	--	--	2	84	3	17
Genesee	326	--	--	--	--	--	0	--	0	--	--	0	35	4	15
Gratiot	415	--	--	--	--	--	12	9	--	--	--	21	94	6	11
Hillsdale	574	--	--	--	--	--	--	9	0	--	--	9	55	3	8
Huron	330	--	--	0	--	3	4	0	0	--	--	7	37	72	1
Ingham	572	--	--	--	--	--	1	1	--	0	--	2	113	4	11
Ionia	664	--	--	--	--	--	95	1	3	--	--	99	49	12	20
Jackson	1,167	62	--	--	--	--	--	--	0	1	--	63	45	17	13
Kalamazoo	780	0	--	--	--	--	17	4	1	1	--	22	57	4	7
Kent	1,562	--	--	--	--	14	92	13	17	14	--	151	81	72	9
Lapeer	470	--	--	0	--	--	12	14	3	1	--	31	42	18	5
Lenawee	432	0	--	--	--	--	--	1	0	--	--	1	26	--	4
Livingston	503	--	--	--	--	--	1	2	--	3	--	6	56	6	1
Macomb	641	--	--	--	--	--	342	0	--	--	--	342	93	1	7
Monroe	193	--	--	--	--	--	0	1	--	--	--	1	32	--	0
Montcalm	813	--	--	--	--	9	134	7	2	--	--	152	30	180	6
Muskegon	1,101	--	--	--	--	3	180	9	4	--	--	196	21	44	2
Oakland	1,287	--	--	--	--	--	6	1	0	0	--	7	115	12	16
Ottawa	1,497	--	--	1	--	12	881	17	37	1	--	949	49	23	4
Saginaw	645	--	--	--	--	1	18	17	11	1	--	47	81	41	6
Sanilac	448	--	--	0	--	1	3	5	0	--	--	9	104	122	4
Shiawassee	206	--	--	--	--	--	3	--	--	--	--	3	20	2	4
St. Clair	1,009	--	--	0	--	--	--	14	0	0	--	14	170	17	24
St. Joseph	712	--	--	--	--	--	5	26	0	--	--	31	48	7	21
Tuscola	758	--	--	1	--	1	10	4	0	4	--	20	88	177	12
Van Buren	1,832	--	--	--	--	--	4	0	0	0	--	4	38	6	9
Washtenaw	728	--	--	--	--	--	4	5	0	0	1	10	29	9	5
Wayne	313	--	--	--	--	--	--	--	0	--	--	0	15	1	0
Total	26,877	62	--	3	--	44	1,855	169	149	66	1	2,349	2,013	895	299
State total	346,398	62	6,863	5,928	6,277	20,784	40,029	4,235	548	7,420	683	92,830	8,108	73,812	8,867

(Table 7 continued on the next page)

(Table 7 continued)

Forest Inventory Unit and county	Hardwoods																
	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak group	White oak group	Sweet-gum	Syca-more	Yellow-poplar	Other hardwoods	Total hardwoods
Eastern Upper Peninsula																	
Alger	575	801	261	153	--	--	14	--	2,838	1,945	50	--	--	--	--	--	7,709
Chippewa	493	741	76	50	--	--	10	--	1,133	1,212	55	0	--	--	--	--	6,093
Delta	486	419	152	91	--	--	2	--	1,402	1,257	44	--	--	--	--	1	5,902
Luce	881	961	129	95	--	--	15	--	2,375	2,395	418	157	--	--	--	--	9,532
Mackinac	352	617	80	27	--	--	26	--	1,102	826	24	--	--	--	--	--	4,589
Menominee	301	489	96	31	--	--	17	1	1,322	656	165	5	--	--	--	1	6,980
Schoolcraft	426	498	115	47	--	--	12	--	889	1,239	28	--	--	--	--	--	4,832
Total	3,515	4,526	910	494	--	--	97	1	11,061	9,529	785	163	--	--	--	1	45,637
Western Upper Peninsula																	
Baraga	713	762	430	182	--	--	21	--	5,216	3,082	161	1	--	--	--	1	12,923
Dickinson	355	536	94	70	--	--	14	1	2,411	773	214	1	--	--	--	1	8,788
Gogebic	35	297	282	156	--	--	15	0	5,293	1,038	269	2	--	--	--	17	9,749
Houghton	254	367	347	180	--	--	3	--	4,800	2,479	227	0	--	--	--	0	11,122
Iron	130	594	218	105	--	--	17	--	3,111	633	147	--	--	--	--	17	8,190
Keweenaw	131	658	142	82	--	--	1	--	2,397	1,350	184	--	--	--	--	--	5,602
Marquette	1,391	1,440	425	265	--	--	7	--	5,730	4,083	380	--	--	--	--	1	20,250
Ontonagon	171	367	294	126	--	--	10	--	3,543	1,370	226	--	--	--	--	17	11,900
Total	3,180	5,019	2,232	1,168	--	--	88	1	32,502	14,809	1,808	4	--	--	--	52	88,525
Northern Lower Peninsula																	
Alcona	24	49	2	35	0	--	1	0	138	357	847	20	--	--	--	--	3,330
Alpena	9	104	3	3	0	2	13	0	266	711	493	12	--	--	--	1	3,746
Antrim	107	114	22	14	3	--	5	0	1,300	450	12	1	--	--	--	6	3,200
Arenac	12	16	4	4	0	11	5	2	65	249	141	32	--	--	--	3	1,126
Bay	--	7	--	0	6	1	3	12	1	175	9	66	--	--	--	--	572
Benzie	101	11	6	32	2	--	1	0	1,007	343	47	6	--	--	--	25	2,425
Charlevoix	23	45	11	6	--	--	1	--	719	124	26	2	--	--	--	5	1,470
Cheboygan	51	188	17	10	2	--	2	0	742	829	73	11	--	--	--	1	5,270
Clare	20	16	--	30	0	9	8	7	358	599	496	126	--	--	--	8	3,858
Crawford	51	11	--	26	1	--	0	0	430	485	571	99	--	--	--	4	2,845
Emmet	20	18	4	16	4	--	1	0	1,205	154	27	1	--	--	--	--	2,342
Gladwin	16	32	--	4	0	4	7	0	147	631	134	51	--	--	--	7	3,029
Grand Traverse	36	5	4	38	45	--	2	0	587	378	340	198	--	--	--	13	2,541
Iosco	0	15	0	8	0	--	1	0	7	272	320	22	--	--	1	--	1,137
Isabella	15	6	0	52	1	14	12	10	305	266	136	36	--	--	--	5	1,798
Kalkaska	106	23	4	34	2	--	2	0	1,068	691	375	50	--	--	--	29	4,584
Lake	17	4	--	10	0	0	1	0	120	184	1,159	429	--	--	--	4	2,969
Leelanau	49	11	1	10	3	--	7	0	786	129	137	12	--	--	--	4	1,454
Manistee	38	21	2	51	13	--	4	0	621	555	623	179	--	--	0	13	2,693
Mason	77	5	2	24	0	0	5	1	454	480	548	252	--	--	--	24	3,553
Mecosta	21	6	2	16	1	--	9	4	210	241	164	33	--	--	--	4	1,694
Midland	11	12	--	15	0	1	7	18	112	461	82	147	--	--	--	3	1,554
Missaukee	28	20	3	30	1	--	3	0	413	484	171	39	--	--	--	6	2,661
Montmorency	31	116	0	2	1	--	1	0	421	792	715	18	--	--	--	--	5,497
Newaygo	48	6	3	61	0	--	6	1	372	372	949	384	--	--	--	8	2,998
Oceana	85	1	7	60	0	0	7	4	516	498	504	125	--	--	--	20	2,410
Ogemaw	12	47	2	2	0	6	2	0	121	441	215	38	--	--	--	3	2,219
Osceola	66	11	27	23	1	--	5	0	472	338	188	10	--	--	--	16	3,009

(Table 7 continued on the next page)

(Table 7 continued)

Oscoda	12	32	--	9	0	0	2	0	155	442	809	24	--	--	--	0	3,194
Otsego	154	139	60	16	3	--	10	0	2,002	911	196	8	--	--	--	0	6,450
Presque Isle	19	164	5	0	1	--	10	0	314	485	213	2	--	--	--	--	2,909
Roscommon	11	20	2	8	0	--	3	0	71	481	711	199	--	--	--	4	2,842
Wexford	72	6	4	61	2	--	10	0	1,129	415	249	21	--	--	--	15	3,500
Total	1,344	1,280	195	707	93	49	157	60	16,634	14,426	11,681	2,655	--	--	1	233	94,878
Southern Lower Peninsula																	
Allegan	3	--	0	138	112	2	5	16	151	142	373	253	--	1	28	4	1,293
Barry	16	--	0	200	122	0	5	35	285	182	449	249	--	1	0	1	1,601
Berrien	1	--	--	82	11	9	5	15	92	92	67	51	--	3	43	6	541
Branch	1	--	1	28	79	11	20	26	31	132	37	62	1	1	21	7	521
Calhoun	0	--	0	194	77	13	32	69	16	231	127	111	--	1	3	7	976
Cass	1	--	1	254	56	1	8	26	166	202	233	57	--	--	30	7	1,072
Clinton	4	0	--	7	12	4	1	12	12	35	29	15	--	--	0	--	151
Eaton	11	--	--	68	52	5	22	34	108	91	41	58	--	--	0	0	594
Genesee	1	0	0	11	2	12	5	11	46	59	63	63	--	--	--	0	326
Gratiot	7	0	--	15	0	5	5	5	111	28	74	32	--	--	--	0	394
Hillsdale	2	--	--	85	85	0	7	25	71	54	93	64	1	1	7	6	565
Huron	0	4	1	5	0	10	10	0	4	83	77	20	--	--	--	--	323
Ingham	0	--	--	87	116	16	29	22	14	90	21	45	--	1	--	--	570
Ionia	22	--	--	41	62	4	7	31	55	92	100	68	--	--	--	0	565
Jackson	0	--	0	162	80	33	13	87	17	64	325	238	--	--	9	2	1,105
Kalamazoo	--	--	1	115	21	15	12	23	57	68	204	124	--	16	21	12	758
Kent	2	0	4	120	12	3	11	21	415	212	337	114	--	--	0	0	1,411
Lapeer	3	2	1	23	4	3	18	16	39	99	80	86	--	--	--	0	439
Lenawee	0	--	--	39	62	46	12	37	45	40	36	80	--	4	0	0	430
Livingston	--	--	--	71	13	3	9	17	8	78	139	96	--	--	--	--	497
Macomb	3	--	3	14	1	11	20	6	6	104	8	18	--	0	1	--	299
Monroe	--	--	--	6	13	21	2	6	5	44	35	28	--	--	0	0	192
Montcalm	3	0	0	22	3	0	5	5	41	71	178	115	--	--	--	1	661
Muskegon	12	0	2	20	2	--	0	2	64	122	502	110	--	--	--	1	905
Oakland	5	0	--	94	5	23	36	79	49	264	301	279	--	--	--	2	1,281
Ottawa	10	1	1	38	2	7	5	0	81	119	134	68	--	1	1	3	547
Saginaw	1	4	--	13	1	47	9	31	34	170	97	63	--	--	--	--	597
Sanilac	2	10	--	7	1	19	27	1	14	123	3	4	--	--	--	--	439
Shiawassee	5	--	0	9	10	9	6	16	7	38	39	37	--	--	--	0	203
St. Clair	2	4	3	16	0	84	30	10	76	275	130	141	--	6	--	5	994
St. Joseph	8	--	1	86	59	1	18	45	33	149	133	42	1	1	20	9	681
Tuscola	3	6	0	47	5	42	18	12	92	102	73	61	--	--	--	--	738
Van Buren	19	--	3	277	156	9	11	39	279	302	421	215	--	2	29	13	1,828
Washtenaw	0	--	0	50	201	3	12	35	22	47	141	159	--	--	3	0	718
Wayne	4	--	--	9	0	17	11	2	18	36	57	24	--	0	2	117	313
Total	153	32	21	2,451	1,438	489	447	818	2,563	4,038	5,160	3,249	2	39	218	205	24,528
State total	8,191	10,856	3,358	4,819	1,532	538	789	880	62,760	42,801	19,434	6,070	2	39	219	491	253,568

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 8.—Industrial roundwood production by Forest Inventory Unit, species group, and product, Michigan, 2008

ALL UNITS

Species group	All products MCF[a]	Saw logs MBF[b]	Saw logs MCF[a]	Veneer logs MBF[b]	Veneer logs MCF[a]	Pulp and composite products Cords[c]	Pulp and composite products MCF[a]	Cabin logs MCF[a]	Industrial fuelwood Cords[c]	Industrial fuelwood MCF[a]	Poles Pieces	Poles MCF[a]	Posts M pieces[d]	Posts MCF[a]	Miscel-laneous MCF[a]
Softwoods															
Eastern redcedar	62	3	0	--	--	--	--	--	--	--	--	--	60	62	--
Balsam fir	6,863	5,238	986	--	--	70,348	5,557	--	2,728	191	--	--	125	128	--
Hemlock	5,928	106	18	45	7	71,706	5,665	--	3,414	239	--	--	--	--	--
Northern white-cedar	6,277	17,156	3,231	--	--	1,642	130	190	--	--	--	--	2,520	2,591	136
Jack pine	20,784	55,529	10,456	--	--	123,496	9,756	--	8,181	572	--	--	--	--	--
Red pine	40,029	159,313	26,717	701	114	73,261	5,788	193	46,251	3,233	180,476	1,083	2,818	2,897	5
White pine	4,235	6,881	1,154	981	160	17,388	1,374	158	17,585	1,229	--	--	127	130	30
Other pine	548	964	181	21	3	630	53	--	690	48	--	--	249	256	5
Spruce	7,420	10,478	1,973	800	130	63,151	4,989	--	2,852	199	--	--	125	128	0
Tamarack	683	16	3	--	--	7,741	612	--	983	69	--	--	--	--	--
Total	92,830	255,683	44,719	2,547	415	429,362	33,923	541	82,683	5,780	180,476	1,083	6,024	6,193	176
Hardwoods															
Ash	8,108	16,919	2,849	250	41	39,307	3,105	2	27,322	1,910	--	--	--	--	201
Aspen/balsam poplar	73,812	58,236	10,244	7,955	1,295	721,535	57,001	--	75,421	5,272	--	--	--	--	--
Basswood	8,867	14,894	2,615	164	27	64,793	5,119	--	15,360	1,074	--	--	--	--	33
Beech	8,191	5,972	1,006	160	26	85,938	6,789	--	5,246	367	--	--	--	--	4
White birch	10,856	5,852	1,028	4,541	739	107,778	8,514	--	8,224	575	--	--	--	--	--
Yellow birch	3,358	6,791	1,144	1,002	163	24,873	1,965	--	1,203	84	--	--	--	--	3
Black cherry	4,819	16,949	2,976	777	127	16,163	1,277	--	5,446	381	--	--	--	--	59
Black walnut	1,532	8,451	1,423	661	108	--	--	--	--	--	--	--	--	--	1
Cottonwood	538	1,907	335	--	--	--	--	--	2,447	171	--	--	--	--	33
Elm	789	1,214	213	44	7	2,220	175	--	4,843	339	--	--	--	--	55
Hickory	880	3,643	613	82	13	--	--	--	3,018	211	--	--	--	--	42
Hard maple	62,760	119,792	19,430	10,160	1,654	479,736	37,899	--	53,174	3,717	--	--	--	--	59
Soft maple	42,801	47,936	8,417	560	91	367,443	29,028	--	70,584	4,934	--	--	--	--	331
Red oak group	19,434	66,403	11,654	3,956	644	24,148	1,908	2	71,271	4,982	--	--	--	--	245
White oak group	6,070	21,558	3,784	1,882	306	3,810	301	218	18,604	1,300	--	--	--	--	161
Sweetgum	2	12	2	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	39	158	28	--	--	--	--	--	142	10	--	--	--	--	2
Yellow-poplar	219	1,189	209	61	10	--	--	--	--	--	--	--	--	--	1
Other hardwoods	491	512	90	308	50	2,929	231	--	--	--	--	--	--	--	119
Total	253,568	398,387	68,059	32,564	5,301	1,940,672	153,313	222	362,305	25,325	--	--	--	--	1,348
State total	346,398	654,070	112,779	35,111	5,716	2,370,034	187,236	763	444,988	31,105	180,476	1,083	6,024	6,193	1,524

(Table 8 continued on next page)

(Table 8 continued)

EASTERN UPPER PENINSULA

Species group	All products MCF[a]	Saw logs MBF[b]	Saw logs MCF[a]	Veneer logs MBF[b]	Veneer logs MCF[a]	Pulpwood Cords[c]	Pulpwood MCF[a]	Cabin logs MCF[a]	Industrial fuelwood Cords[c]	Industrial fuelwood MCF[a]	Poles Pieces	Poles MCF[a]	Posts M pieces[d]	Posts MCF[a]	Miscel-laneous MCF[a]
Softwoods															
Balsam fir	2,760	2,109	397	--	--	29,913	2,363	--	--	--	--	--	--	--	--
Hemlock	1,964	26	4	2	0	24,797	1,959	--	--	--	--	--	--	--	--
Northern white-cedar	4,823	16,328	3,075	--	--	767	61	148	--	--	--	--	1,496	1,538	2
Jack pine	8,697	23,820	4,485	--	--	53,307	4,211	--	--	--	--	--	--	--	--
Red pine	6,209	21,278	3,568	21	3	31,968	2,525	17	--	--	15,865	95	--	--	--
White pine	805	672	113	207	34	8,142	643	15	--	--	--	--	--	--	--
Other pine	4	0	0	--	--	45	4	--	--	--	--	--	--	--	--
Spruce	3,463	4,811	906	47	8	32,268	2,549	--	--	--	--	--	--	--	--
Tamarack	290	10	2	--	--	3,644	288	--	--	--	--	--	--	--	--
Total	29,013	69,055	12,550	276	45	184,853	14,603	180	--	--	15,865	95	1,496	1,538	2
Hardwoods															
Ash	985	1,409	237	7	1	9,447	746	--	--	--	--	--	--	--	--
Aspen/balsam poplar	12,482	11,193	1,969	484	79	132,076	10,434	--	--	--	--	--	--	--	--
Basswood	1,090	1,834	322	19	3	9,681	765	--	--	--	--	--	--	--	--
Beech	3,515	2,907	490	85	14	38,115	3,011	--	--	--	--	--	--	--	--
White birch	4,526	3,150	553	1,123	183	47,971	3,790	--	--	--	--	--	--	--	--
Yellow birch	910	1,799	303	158	26	7,360	581	--	--	--	--	--	--	--	--
Black cherry	494	751	132	16	3	4,556	360	--	--	--	--	--	--	--	--
Elm	97	48	8	--	--	1,119	88	--	--	--	--	--	--	--	--
Hickory	1	4	1	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	11,061	13,683	2,219	1,766	287	108,279	8,554	--	--	--	--	--	--	--	--
Soft maple	9,529	6,868	1,206	78	13	105,189	8,310	--	--	--	--	--	--	--	--
Red oak group	785	1,373	241	37	6	6,808	538	--	--	--	--	--	--	--	--
White oak group	163	31	5	--	--	1,995	158	--	--	--	--	--	--	--	--
Other hardwoods	1	6	1	--	--	--	--	--	--	--	--	--	--	--	--
Total	45,637	45,056	7,688	3,773	614	472,596	37,335	--	--	--	--	--	--	--	--
Unit total	74,650	114,111	20,238	4,049	659	657,449	51,938	180	--	--	15,865	95	1,496	1,538	2

(Table 8 continued on next page)

(Table 8 continued)

WESTERN UPPER PENINSULA

Species group	All products MCF[a]	Saw logs MBF[b]	Saw logs MCF[a]	Veneer logs MBF[b]	Veneer logs MCF[a]	Pulpwood Cords[c]	Pulpwood MCF[a]	Cabin logs MCF[a]	Industrial fuelwood Cords[c]	Industrial fuelwood MCF[a]	Poles Pieces	Poles MCF[a]	Posts M pieces[d]	Posts MCF[a]	Miscel-laneous MCF[a]
Softwoods															
Balsam fir	3,690	3,079	580	--	--	39,370	3,110	--	--	--	--	--	--	--	--
Hemlock	3,702	37	6	44	7	46,692	3,689	--	--	--	--	--	--	--	--
Northern white-cedar	872	702	132	--	--	871	69	42	--	--	--	--	611	628	1
Jack pine	4,890	12,931	2,435	--	--	31,083	2,456	--	--	--	--	--	--	--	--
Red pine	5,076	15,334	2,571	680	111	27,996	2,212	125	--	--	9,558	57	--	--	--
White pine	1,598	3,758	630	704	115	9,135	722	131	--	--	--	--	--	--	--
Other pine	2	7	1	--	--	5	0	--	--	--	--	--	--	--	--
Spruce	3,461	5,536	1,042	753	123	29,069	2,296	--	--	--	--	--	--	--	--
Tamarack	322	--	--	--	--	4,076	322	--	--	--	--	--	--	--	--
Total	23,613	41,383	7,398	2,180	355	188,295	14,875	298	--	--	9,558	57	611	628	1
Hardwoods															
Ash	2,009	1,672	282	21	3	21,827	1,724	--	--	--	--	--	--	--	--
Aspen/balsam poplar	22,026	8,747	1,539	7,471	1,216	243,933	19,271	--	--	--	--	--	--	--	--
Basswood	3,626	5,300	931	133	22	33,846	2,674	--	--	--	--	--	--	--	--
Beech	3,180	25	4	2	0	40,200	3,176	--	--	--	--	--	--	--	--
White birch	5,019	1,660	292	3,415	556	52,805	4,172	--	--	--	--	--	--	--	--
Yellow birch	2,232	4,791	807	844	137	16,302	1,288	--	--	--	--	--	--	--	--
Black cherry	1,168	1,870	328	47	8	10,528	832	--	--	--	--	--	--	--	--
Elm	88	7	1	--	--	1,099	87	--	--	--	--	--	--	--	--
Hickory	1	5	1	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	32,502	49,866	8,088	4,588	747	299,579	23,667	--	--	--	--	--	--	--	--
Soft maple	14,809	12,536	2,201	195	32	159,189	12,576	--	--	--	--	--	--	--	--
Red oak group	1,808	5,929	1,041	935	152	7,789	615	--	--	--	--	--	--	--	--
White oak group	4	16	3	--	--	13	1	--	--	--	--	--	--	--	--
Other hardwoods	52	15	3	306	50	0	0	--	--	--	--	--	--	--	--
Total	88,525	92,441	15,520	17,957	2,923	887,112	70,082	--	--	--	--	--	--	--	--
Unit total	112,138	133,824	22,918	20,138	3,278	1,075,407	84,957	298	--	--	9,558	57	611	628	1

(Table 8 continued on next page)

(Table 8 continued)

NORTHERN LOWER PENINSULA

Species group	All products MCF[a]	Saw logs MBF[b]	Saw logs MCF[a]	Veneer logs MBF[b]	Veneer logs MCF[a]	Pulpwood Cords[c]	Pulpwood MCF[a]	Cabin logs MCF[a]	Industrial fuelwood Cords[c]	Industrial fuelwood MCF[a]	Poles Pieces	Poles MCF[a]	Posts M pieces[d]	Posts MCF[a]	Miscel-laneous MCF[a]
Softwoods															
Balsam fir	413	51	10	--	--	1,065	84	--	2,728	191	--	--	125	128	--
Hemlock	260	43	7	--	--	216	17	--	3,374	236	--	--	--	--	--
Northern white-cedar	582	126	24	--	--	4	0	--	--	--	--	--	413	425	133
Jack pine	7,153	18,610	3,504	--	--	38,947	3,077	--	8,181	572	--	--	--	--	--
Red pine	26,889	112,654	18,892	--	--	13,241	1,046	33	45,342	3,169	151,862	911	2,760	2,837	--
White pine	1,664	2,199	369	71	12	111	9	--	16,173	1,131	--	--	120	123	21
Other pine	394	788	148	--	--	0	0	--	690	48	--	--	190	195	2
Spruce	430	120	23	--	--	1,815	143	--	2,428	170	--	--	91	94	--
Tamarack	71	6	1	--	--	21	2	--	969	68	--	--	--	--	--
Total	37,855	134,596	22,978	71	12	55,421	4,378	33	79,885	5,584	151,862	911	3,699	3,803	156
Hardwoods															
Ash	3,101	7,020	1,182	109	18	7,985	631	--	17,862	1,249	--	--	--	--	22
Aspen/balsam poplar	38,410	36,846	6,481	--	--	340,249	26,880	--	72,232	5,049	--	--	--	--	--
Basswood	3,852	6,330	1,112	9	1	21,249	1,679	--	15,172	1,061	--	--	--	--	--
Beech	1,344	2,511	423	--	--	7,578	599	--	4,614	323	--	--	--	--	--
White birch	1,280	1,029	181	3	1	7,001	553	--	7,802	545	--	--	--	--	--
Yellow birch	195	141	24	--	--	1,211	96	--	1,083	76	--	--	--	--	--
Black cherry	707	3,342	587	129	21	1,071	85	--	190	13	--	--	--	--	1
Black walnut	93	372	63	189	31	--	--	--	--	--	--	--	--	--	--
Cottonwood	49	167	29	--	--	--	--	--	287	20	--	--	--	--	--
Elm	157	99	17	5	1	1	0	--	1,965	137	--	--	--	--	1
Hickory	60	286	48	10	2	--	--	--	149	10	--	--	--	--	--
Hard maple	16,634	44,090	7,151	1,243	202	71,534	5,651	--	51,693	3,613	--	--	--	--	15
Soft maple	14,426	14,314	2,514	11	2	101,684	8,033	--	54,903	3,838	--	--	--	--	40
Red oak group	11,681	37,696	6,616	1,105	180	9,551	754	--	58,711	4,104	--	--	--	--	27
White oak group	2,655	8,899	1,562	460	75	1,801	142	--	12,483	873	--	--	--	--	3
Yellow-poplar	1	7	1	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	233	19	3	--	--	2,904	229	--	--	--	--	--	--	--	--
Total	94,878	163,169	27,994	3,272	533	573,819	45,332	--	299,147	20,910	--	--	--	--	109
Unit total	132,733	297,766	50,971	3,343	544	629,240	49,710	33	379,032	26,494	151,862	911	3,699	3,803	266

(Table 8 continued on next page)

(Table 8 continued)

SOUTHERN LOWER PENINSULA

Species group	All products MCF[a]	Saw logs MBF[b]	Saw logs MCF[a]	Veneer logs MBF[b]	Veneer logs MCF[a]	Pulpwood Cords[c]	Pulpwood MCF[a]	Cabin logs MCF[a]	Industrial fuelwood Cords[c]	Industrial fuelwood MCF[a]	Poles Pieces	Poles MCF[a]	Posts M pieces[d]	Posts MCF[a]	Miscel-laneous MCF[a]
Softwoods															
Eastern redcedar	62	3	0	--	--	--	--	--	--	--	--	--	60	62	--
Hemlock	3	--	--	--	--	--	--	--	40	3	--	--	--	--	--
Jack pine	44	168	32	--	--	158	13	--	--	--	--	--	--	--	--
Red pine	1,855	10,047	1,685	--	--	56	4	18	909	64	3,191	19	58	60	5
White pine	169	252	42	--	--	--	--	12	1,412	99	--	--	7	7	9
Other pine	149	169	32	21	3	579	49	--	--	--	--	--	59	61	4
Spruce	66	10	2	--	--	--	--	--	424	30	--	--	33	34	0
Tamarack	1	--	--	--	--	--	--	--	13	1	--	--	--	--	--
Total	2,349	10,649	1,793	21	3	794	66	30	2,799	196	3,191	19	218	224	18
Ash	2,013	6,818	1,148	113	18	48	4	2	9,460	661	--	--	--	--	179
Aspen/balsam poplar	895	1,450	255	--	--	5,277	417	--	3,189	223	--	--	--	--	--
Basswood	299	1,429	251	3	1	17	1	--	188	13	--	--	--	--	33
Beech	153	529	89	73	12	45	4	--	632	44	--	--	--	--	4
White birch	32	12	2	--	--	--	--	--	422	30	--	--	--	--	--
Yellow birch	21	59	10	--	--	--	--	--	120	8	--	--	--	--	3
Black cherry	2,451	10,986	1,929	586	95	8	1	--	5,256	367	--	--	--	--	58
Black walnut	1,438	8,078	1,360	472	77	--	--	--	--	--	--	--	--	--	1
Cottonwood	489	1,739	305	--	--	--	--	--	2,160	151	--	--	--	--	33
Elm	447	1,061	186	39	6	--	--	--	2,878	201	--	--	--	--	53
Hickory	818	3,347	564	72	12	--	--	--	2,869	201	--	--	--	--	42
Hard maple	2,563	12,152	1,971	2,563	417	344	27	--	1,481	104	--	--	--	--	44
Soft maple	4,038	14,217	2,496	276	45	1,381	109	--	15,680	1,096	--	--	--	--	291
Red oak group	5,160	21,405	3,757	1,878	306	--	--	2	12,560	878	--	--	--	--	218
White oak group	3,249	12,612	2,213	1,422	231	--	--	218	6,121	428	--	--	--	--	158
Sweetgum	2	12	2	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	39	158	28	--	--	--	--	--	142	10	--	--	--	--	2
Yellow-poplar	218	1,182	208	61	10	--	--	--	--	--	--	--	--	--	1
Other hardwoods	205	472	83	2	0	24	2	--	--	--	--	--	--	--	119
Total	24,528	97,721	16,858	7,561	1,231	7,145	564	222	63,158	4,415	--	--	--	--	1,238
Unit total	26,877	108,370	18,651	7,581	1,234	7,938	631	252	65,956	4,610	3,191	19	218	224	1,256

[a] *Thousand cubic feet.*
[b] *Thousand board feet, International 1/4-inch rule.*
[c] *Standard cords are 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.*
[d] *Thousand pieces.*

All table cells without observations are indicated by --. Table value of 0 indicates the volume less than 1/2 unit of measure. Columns and rows may not add to their totals due to rounding.

Table 9.—Saw log receipts and production, in thousand board feet, International 1/4-inch rule, by Forest Inventory Unit and species group, Michigan, 2006 and 2008

ALL UNITS

Species group	Receipts 2006	Receipts 2008	Receipts Percent change	Production 2006	Production 2008	Production Percent change
Softwood						
Eastern redcedar	10	3	-75%	10	3	-75%
Balsam fir	7,980	6,357	-20%	6,625	5,238	-21%
Hemlock	1,519	56	-96%	357	106	-70%
Northern white-cedar	6,704	17,103	155%	6,714	17,156	156%
Jack pine	88,970	68,330	-23%	73,096	55,529	-24%
Red pine	198,624	173,280	-13%	181,257	159,313	-12%
White pine	9,731	6,533	-33%	9,745	6,881	-29%
Other pine	224	964	331%	224	964	331%
Spruce	26,064	12,133	-53%	20,610	10,478	-49%
Tamarack	15	16	7%	15	16	7%
Total	339,840	284,774	-16%	298,653	255,683	-14%
Hardwood						
Ash	19,476	15,600	-20%	21,658	16,919	-22%
Aspen/balsam poplar	59,991	54,251	-10%	56,101	58,236	4%
Basswood	14,187	11,479	-19%	17,108	14,894	-13%
Beech	6,838	5,866	-14%	6,334	5,972	-6%
White birch	7,085	4,792	-32%	7,571	5,852	-23%
Yellow birch	8,312	5,801	-30%	9,720	6,791	-30%
Other birch	--	--	--	25	--	--
Black cherry	18,708	14,999	-20%	20,911	16,949	-19%
Black walnut	5,659	8,157	44%	6,446	8,451	31%
Cottonwood	1,705	1,732	2%	2,098	1,907	-9%
Elm	640	961	50%	709	1,214	71%
Hickory	2,524	2,820	12%	3,157	3,643	15%
Hard maple	158,439	105,998	-33%	161,043	119,792	-26%
Soft maple	64,636	45,802	-29%	65,744	47,936	-27%
Red oak group	81,083	64,230	-21%	82,679	66,403	-20%
White oak group	14,689	18,798	28%	17,470	21,558	23%
Sweetgum	--	--	--	--	12	--
Sycamore	1	20	2358%	108	158	45%
Yellow-poplar	430	407	-5%	1,390	1,189	-14%
Other hardwoods	61	1,103	1693%	980	512	-48%
Total	464,466	362,815	-22%	481,251	398,387	-17%
State total	804,305	647,589	-19%	779,904	654,070	-16%

(Table 9 continued on next page)

(Table 9 continued)

EASTERN UPPER PENINSULA

Species group	Receipts 2006	Receipts 2008	Receipts Percent change	Production 2006	Production 2008	Production Percent change
Softwood						
Balsam fir	3	1	-47%	2,666	2,109	-21%
Hemlock	1,380	--	--	13	26	100%
Northern white-cedar	2,338	13,245	467%	3,309	16,328	393%
Jack pine	269	269	0%	31,299	23,820	-24%
Red pine	3,406	788	-77%	21,637	21,278	-2%
White pine	4,253	3,214	-24%	1,827	672	-1
Other pine	--	--	--	--	0	--
Spruce	269	179	-34%	9,485	4,811	-49%
Tamarack	--	--	--	10	10	0%
Total	11,918	17,696	48%	70,246	69,055	-2%
Hardwoods						
Ash	1,304	1,890	45%	674	1,409	109%
Aspen/balsam poplar	8,352	7,048	-16%	8,248	11,193	36%
Basswood	1,585	1,695	7%	1,574	1,834	17%
Beech	3,758	2,678	-29%	2,921	2,907	0%
White birch	1,859	1,778	-4%	3,478	3,150	-9%
Yellow birch	2,278	1,770	-22%	2,750	1,799	-35%
Black cherry	837	676	-19%	947	751	-21%
Elm	5	29	461%	8	48	497%
Hickory	--	--	--	--	4	--
Hard maple	33,876	17,498	-48%	27,403	13,683	-50%
Soft maple	13,830	9,161	-34%	12,337	6,868	-44%
Red oak group	2,375	2,750	16%	1,911	1,373	-28%
White oak group	--	--	--	30	31	3%
Other hardwoods	--	1,000	--	--	6	--
Total	70,059	47,972	-32%	62,280	45,056	-28%
Unit total	81,977	65,668	-20%	132,526	114,111	-14%

(Table 9 continued on next page)

(Table 9 continued)

WESTERN UPPER PENINSULA

Species group	Receipts 2006	Receipts 2008	Receipts Percent change	Production 2006	Production 2008	Production Percent change
Softwood						
Balsam fir	7,952	6,337	-20%	3,877	3,079	-21%
Hemlock	3	--	--	221	37	-83%
Northern white-cedar	176	108	-39%	1,109	702	-37%
Jack pine	76,376	58,255	-24%	16,986	12,931	-24%
Red pine	48,245	49,842	3%	13,026	15,334	18%
White pine	1,022	784	-23%	3,514	3,758	7%
Other pine	--	--	--	--	7	--
Spruce	25,507	11,749	-54%	10,886	5,536	-49%
Total	159,281	127,076	-20%	49,619	41,383	-17%
Hardwoods						
Ash	755	1,419	88%	1,749	1,672	-4%
Aspen/balsam poplar	10,524	9,094	-14%	6,736	8,747	30%
Basswood	2,685	1,902	-29%	5,240	5,300	1%
Beech	--	191	--	234	25	-89%
White birch	4,120	2,133	-48%	2,829	1,660	-41%
Yellow birch	5,730	3,827	-33%	6,705	4,791	-29%
Other birch	--	--	--	25	--	--
Black cherry	1,272	1,358	7%	1,450	1,870	29%
Elm	--	31	--	2	7	216%
Hickory	--	--	--	28	5	-81%
Hard maple	36,311	26,919	-26%	46,778	49,866	7%
Soft maple	11,599	9,980	-14%	13,327	12,536	-6%
Red oak group	7,353	6,754	-8%	4,880	5,929	21%
White oak group	--	--	--	136	16	-88%
Other hardwoods	--	--	--	826	15	-98%
Total	80,348	63,609	-21%	90,946	92,441	2%
Unit total	239,630	190,684	-20%	140,565	133,824	-5%

(Table 9 continued on next page)

(Table 9 continued)

NORTHERN LOWER PENINSULA

Species group	Receipts 2006	Receipts 2008	Receipts Percent change	Production 2006	Production 2008	Production Percent change
Softwood						
Eastern redcedar	10	1	-95%	10	--	--
Balsam fir	25	19	-25%	82	51	-39%
Hemlock	135	56	-59%	122	43	-65%
Northern white-cedar	4,175	3,749	-10%	2,296	126	-95%
Jack pine	12,325	9,806	-20%	24,655	18,610	-25%
Red pine	146,811	122,404	-17%	135,837	112,654	-17%
White pine	4,408	2,336	-47%	4,111	2,199	-46%
Other pine	224	958	328%	167	788	371%
Spruce	280	196	-30%	231	120	-48%
Tamarack	15	16	7%	5	6	20%
Total	168,409	139,541	-17%	167,517	134,596	-20%
Hardwoods						
Ash	9,943	5,108	-49%	10,476	7,020	-33%
Aspen/balsam poplar	35,860	36,299	1%	39,042	36,846	-6%
Basswood	7,768	6,152	-21%	8,305	6,330	-24%
Beech	1,943	2,453	26%	2,181	2,511	15%
White birch	893	873	-2%	1,180	1,029	-13%
Yellow birch	280	193	-31%	236	141	-40%
Black cherry	4,778	3,563	-25%	4,771	3,342	-30%
Black walnut	247	189	-23%	294	372	27%
Cottonwood	206	413	101%	454	167	-63%
Elm	67	100	49%	102	99	-2%
Hickory	687	705	3%	154	286	85%
Hard maple	60,532	41,044	-32%	74,154	44,090	-41%
Soft maple	21,618	13,017	-40%	22,728	14,314	-37%
Red oak group	46,988	34,417	-27%	50,237	37,696	-25%
White oak group	7,966	7,060	-11%	8,283	8,899	7%
Yellow-poplar	1	7	494%	7	7	0%
Other hardwoods	--	2	--	3	19	453%
Total	199,776	151,595	-24%	222,606	163,169	-27%
Unit total	368,186	291,136	-21%	390,123	297,766	-24%

(Table 9 continued on next page)

(Table 9 continued)

SOUTHERN LOWER PENINSULA

Species group	Receipts 2006	Receipts 2008	Receipts Percent change	Production 2006	Production 2008	Production Percent change
Softwood						
Eastern redcedar	--	2	--	--	3	--
Northern white-cedar	15	--	--	--	--	--
Jack pine	--	--	--	157	168	7%
Red pine	161	246	52%	10,756	10,047	-7%
White pine	48	198	316%	294	252	-14%
Other pine	--	5	--	57	169	198%
Spruce	7	10	41%	7	10	41%
Total	231	462	100%	11,270	10,649	-6%
Hardwoods						
Ash	7,474	7,182	-4%	8,759	6,818	-22%
Aspen/balsam poplar	5,255	1,810	-66%	2,075	1,450	-30%
Basswood	2,150	1,729	-20%	1,990	1,429	-28%
Beech	1,138	544	-52%	998	529	-47%
White birch	213	8	-96%	84	12	-85%
Yellow birch	24	11	-52%	29	59	106%
Black cherry	11,822	9,402	-20%	13,742	10,986	-20%
Black walnut	5,412	7,968	47%	6,152	8,078	31%
Cottonwood	1,499	1,319	-12%	1,644	1,739	6%
Elm	567	801	41%	597	1,061	78%
Hickory	1,837	2,115	15%	2,975	3,347	13%
Hard maple	27,721	20,538	-26%	12,708	12,152	-4%
Soft maple	17,589	13,644	-22%	17,352	14,217	-18%
Red oak group	24,367	20,309	-17%	25,652	21,405	-17%
White oak group	6,723	11,738	75%	9,022	12,612	40%
Sweetgum	--	--	--	--	12	--
Sycamore	1	20	2358%	108	158	45%
Yellow-poplar	429	400	-7%	1,383	1,182	-15%
Other hardwoods	61	101	64%	150	472	214%
Total	114,282	99,639	-13%	105,419	97,721	-7%
Unit total	114,513	100,101	-13%	116,690	108,370	-7%

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.—Wood material harvested for industrial roundwood, in thousand cubic feet, by Forest Inventory Unit, source of material, and species group, Michigan, 2008[a]

ALL UNITS

	Source of material												
	Growing stock				Non-growing stock								
	Used for products				Used for products								
Species group	Sawtimber	Pole-timber	Logging residue (not used)	Total growing stock	Limbwood	Saplings	Cull trees	Dead trees	Logging slash (not used)	Total non growing stock	Total used	Total not used	Total harvested
Softwoods													
Eastern redcedar	15.4	41.1	7.6	64.1	1.8	3.1	0.7	0.0	3.3	8.9	62.2	10.9	73.0
Balsam fir	4,873.8	1,593.3	355.8	6,822.8	253.7	70.4	29.1	42.6	2,114.6	2,510.3	6,862.8	2,470.4	9,333.2
Hemlock	3,001.1	1,914.5	181.2	5,096.8	410.4	136.9	307.7	157.9	1,770.2	2,783.1	5,928.4	1,951.5	7,879.9
Northern white-cedar	3,983.4	1,873.6	718.9	6,575.9	170.2	133.3	42.0	75.0	1,490.7	1,911.2	6,277.4	2,209.6	8,487.1
Jack pine	14,925.4	3,956.0	1,403.2	20,284.7	954.4	174.5	150.9	622.9	6,634.0	8,536.6	20,784.0	8,037.2	28,821.2
Red pine	31,368.9	5,286.9	1,810.6	38,466.4	2,135.9	295.8	539.7	401.9	10,065.8	13,439.0	40,029.0	11,876.4	51,905.4
White pine	2,461.7	935.6	145.0	3,542.2	589.5	43.2	155.3	50.0	898.9	1,736.9	4,235.2	1,043.9	5,279.1
Other pine	285.6	204.6	54.8	545.0	32.9	13.9	6.7	4.1	100.4	158.1	547.9	155.2	703.1
Spruce	5,516.3	1,464.9	461.9	7,443.1	269.0	63.9	44.0	61.9	2,354.9	2,793.7	7,419.9	2,816.9	10,236.8
Tamarack	446.3	178.5	25.9	650.7	43.6	7.2	5.3	2.4	192.6	251.0	683.2	218.5	901.7
Total	66,877.9	17,448.8	5,165.1	89,491.8	4,861.3	942.3	1,281.3	1,418.6	25,625.3	34,128.8	92,830.1	30,790.4	123,620.5
Hardwoods													
Ash	4,597.7	1,364.0	561.2	6,522.9	1,132.4	15.6	994.9	3.3	1,682.3	3,828.5	8,107.9	2,243.5	10,351.4
Aspen/balsam poplar	33,391.9	33,784.7	3,134.5	70,311.2	3,754.0	66.1	2,356.8	458.5	12,378.7	19,014.1	73,812.0	15,513.2	89,325.2
Basswood	4,510.8	2,960.6	721.1	8,192.4	851.8	20.0	446.3	77.6	1,536.0	2,931.8	8,867.1	2,257.1	11,124.2
Beech	3,866.2	1,503.8	498.3	5,868.3	850.3	10.2	1,958.1	3.0	2,633.9	5,455.4	8,191.5	3,132.3	11,323.7
White birch	4,673.1	4,405.0	803.6	9,881.7	892.3	26.2	730.4	129.2	2,081.8	3,859.9	10,856.2	2,885.4	13,741.6
Yellow birch	2,072.0	425.4	273.2	2,770.6	254.5	1.3	604.9	0.3	984.4	1,845.5	3,358.5	1,257.6	4,616.1
Black cherry	3,487.9	877.5	565.9	4,931.3	287.0	5.7	142.0	19.4	874.7	1,328.7	4,819.4	1,440.6	6,260.0
Black walnut	1,445.4	22.2	185.7	1,653.3	29.8	--	34.2	--	308.2	372.2	1,531.6	493.9	2,025.5
Cottonwood	381.8	73.0	59.7	514.5	72.0	0.5	11.2	--	70.8	154.4	538.4	130.5	668.9
Elm	391.1	210.6	59.6	661.2	150.2	1.4	33.2	2.7	88.2	275.6	789.1	147.7	936.8
Hickory	675.8	84.0	86.0	845.7	96.4	0.6	23.0	--	130.0	250.0	879.7	216.0	1,095.7
Hard maple	36,412.2	9,303.3	5,027.0	50,742.5	5,793.4	75.7	11,154.1	21.0	18,107.9	35,152.0	62,759.6	23,134.9	85,894.5
Soft maple	19,235.4	16,286.5	3,127.5	38,649.4	4,308.2	123.6	2,407.9	439.8	7,356.4	14,635.8	42,801.3	10,483.9	53,285.2
Red oak group	12,770.5	3,225.4	1,320.1	17,316.1	2,506.8	51.8	639.2	240.1	2,038.2	5,476.3	19,434.0	3,358.4	22,792.3
White oak group	4,358.6	781.5	480.5	5,620.6	656.6	10.5	191.2	71.9	673.2	1,603.4	6,070.4	1,153.7	7,224.1
Sweetgum	2.1	0.1	0.3	2.5	0.0	--	0.0	--	0.4	0.5	2.2	0.8	2.9
Sycamore	29.7	4.5	4.6	38.8	4.3	0.0	0.7	--	5.7	10.7	39.2	10.4	49.6
Yellow-poplar	206.4	8.3	33.5	248.2	2.6	--	2.2	--	43.7	48.5	219.4	77.2	296.7
Other hardwoods	277.5	164.9	63.4	505.8	23.5	4.6	17.1	3.4	63.6	112.1	490.9	127.0	617.9
Total	132,785.9	75,485.3	17,005.8	225,277.0	21,665.9	413.8	21,747.2	1,470.2	51,058.2	96,355.3	253,568.3	68,064.0	321,632.3
State total	199,663.8	92,934.2	22,170.9	314,768.8	26,527.1	1,356.1	23,028.6	2,888.8	76,683.5	130,484.1	346,398.5	98,854.4	445,252.9

(Table 10 continued on next page)

(Table 10 continued)

EASTERN UPPER PENINSULA

	Source of material												
	Growing stock				Non-growing stock								
	Used for products				Used for products								
Species group	Sawtimber	Pole-timber	Logging residue (not used)	Total growing stock	Limbwood	Saplings	Cull trees	Dead trees	Logging slash (not used)	Total non growing stock	Total used	Total not used	Total harvested
Softwoods													
Balsam fir	2,018.3	616.5	142.2	2,777.0	73.6	26.9	7.2	17.6	885.8	1,011.1	2,760.2	1,027.9	3,788.1
Hemlock	1,013.7	637.4	62.2	1,713.3	109.2	47.1	101.7	54.6	608.9	921.5	1,963.7	671.1	2,634.8
Northern white-cedar	3,419.8	1,092.1	544.3	5,056.2	132.9	78.9	28.7	70.4	1,336.3	1,647.1	4,822.8	1,880.5	6,703.4
Jack pine	6,355.3	1,633.4	602.6	8,591.3	313.4	74.6	51.6	268.2	2,846.4	3,554.3	8,696.6	3,449.0	12,145.6
Red pine	4,827.1	885.7	240.7	5,953.4	200.5	60.7	133.0	102.4	1,849.9	2,346.6	6,209.4	2,090.6	8,300.0
White pine	484.0	211.3	31.3	726.6	38.0	15.5	36.7	19.1	246.8	356.0	804.5	278.0	1,082.5
Other pine	2.5	0.9	0.2	3.6	0.1	0.0	0.0	0.0	1.1	1.3	3.6	1.3	4.9
Spruce	2,629.1	672.7	206.9	3,508.7	92.3	29.0	10.1	29.4	1,141.5	1,302.3	3,462.7	1,348.4	4,811.0
Tamarack	202.6	74.4	12.2	289.2	7.7	3.3	0.7	1.1	90.0	102.9	289.8	102.2	392.0
Total	20,952.5	5,824.3	1,842.5	28,619.3	967.7	336.2	369.7	562.9	9,006.6	11,243.0	29,013.2	10,849.1	39,862.3
Hardwoods													
Ash	539.3	144.4	70.6	754.3	79.6	--	221.3	--	320.6	621.5	984.6	391.2	1,375.8
Aspen/balsam poplar	5,844.7	5,957.1	580.7	12,382.5	225.1	--	373.3	81.5	2,331.0	3,010.8	12,481.6	2,911.7	15,393.4
Basswood	568.0	388.1	96.8	1,052.8	62.1	1.9	58.3	11.6	214.0	348.0	1,090.1	310.8	1,400.8
Beech	1,741.6	575.5	231.4	2,548.5	311.3	--	886.1	--	1,204.9	2,402.3	3,514.5	1,436.3	4,950.8
White birch	1,981.6	1,882.7	349.6	4,213.9	295.1	9.6	299.2	57.6	903.3	1,564.8	4,525.8	1,252.9	5,778.7
Yellow birch	554.5	114.3	73.1	741.9	64.5	--	176.8	--	279.8	521.2	910.1	352.9	1,263.0
Black cherry	249.8	181.9	42.8	474.4	29.0	0.9	27.4	5.5	97.2	160.0	494.5	140.0	634.5
Elm	38.1	43.8	6.8	88.6	6.8	0.2	6.5	1.3	19.0	33.9	96.8	25.7	122.5
Hickory	0.7	0.0	0.1	0.8	0.0	--	0.0	--	0.1	0.2	0.7	0.2	1.0
Hard maple	5,959.6	1,651.7	839.4	8,450.6	912.0	--	2,537.6	--	3,694.2	7,143.9	11,060.9	4,533.6	15,594.5
Soft maple	3,988.9	4,128.0	700.3	8,817.2	646.3	21.0	618.2	126.2	1,870.3	3,282.0	9,528.7	2,570.5	12,099.2
Red oak group	310.4	347.2	42.2	699.7	68.3	3.4	31.9	23.6	116.7	243.9	784.7	158.9	943.6
White oak group	30.8	99.2	5.9	135.8	18.3	1.0	7.9	5.9	25.2	58.3	163.0	31.1	194.1
Other hardwoods	1.0	0.0	0.2	1.2	0.0	--	0.0	--	0.2	0.2	1.0	0.4	1.4
Total	21,808.8	15,513.8	3,039.7	40,362.3	2,718.4	38.1	5,244.8	313.2	11,076.6	19,391.0	45,637.1	14,116.3	59,753.4
Unit total	42,761.3	21,338.2	4,882.2	68,981.6	3,686.1	374.3	5,614.5	876.0	20,083.2	30,634.1	74,650.3	24,965.4	99,615.7

(Table 10 continued on next page)

(Table 10 continued)

WESTERN UPPER PENINSULA

	Source of material												
	Growing stock				Non-growing stock								
	Used for products				Used for products								
Species group	Sawtimber	Pole-timber	Logging residue (not used)	Total growing stock	Limbwood	Saplings	Cull trees	Dead trees	Logging slash (not used)	Total non growing stock	Total used	Total not used	Total harvested
Softwoods													
Balsam fir	2,709.6	812.4	193.3	3,715.3	98.4	35.4	9.7	24.4	1,187.8	1,355.7	3,689.9	1,381.1	5,071.1
Hemlock	1,912.6	1,200.1	118.2	3,230.9	205.6	88.7	192.1	102.8	1,147.8	1,736.9	3,701.9	1,265.9	4,967.8
Northern white-cedar	363.4	439.4	99.3	902.1	24.5	32.7	8.2	4.1	119.8	189.3	872.3	219.1	1,091.4
Jack pine	3,537.6	949.5	331.7	4,818.7	177.8	43.5	29.5	152.5	1,590.2	1,993.6	4,890.4	1,921.9	6,812.3
Red pine	3,875.3	766.7	207.2	4,849.2	168.4	53.2	126.6	85.7	1,518.0	1,951.8	5,075.9	1,725.2	6,801.0
White pine	1,204.5	247.0	73.5	1,525.0	53.1	17.4	48.6	26.9	481.6	627.7	1,597.6	555.1	2,152.6
Other pine	1.5	0.1	0.2	1.8	0.0	0.0	0.0	0.0	0.6	0.7	1.7	0.8	2.5
Spruce	2,683.7	609.6	230.6	3,523.9	89.5	26.2	21.1	31.4	1,148.0	1,316.2	3,461.5	1,378.6	4,840.1
Tamarack	224.6	83.1	13.4	321.2	8.6	3.7	0.8	1.2	99.9	114.1	322.0	113.3	435.3
Total	16,512.7	5,108.0	1,267.3	22,888.0	825.9	300.8	436.7	429.0	7,293.6	9,286.0	23,613.1	8,560.9	32,174.1
Hardwoods													
Ash	992.7	332.6	131.5	1,456.8	178.5	0.3	505.2	0.1	686.7	1,370.8	2,009.4	818.2	2,827.6
Aspen/balsam poplar	10,006.1	10,684.6	1,066.3	21,757.0	401.9	1.5	782.9	148.5	4,181.8	5,516.7	22,025.6	5,248.1	27,273.7
Basswood	1,810.0	1,350.1	310.1	3,470.2	215.0	7.0	203.4	40.6	712.1	1,178.1	3,626.2	1,022.2	4,648.4
Beech	1,339.0	599.0	181.5	2,119.6	317.7	--	924.7	--	1,166.7	2,409.1	3,180.5	1,348.2	4,528.7
White birch	2,201.0	2,060.4	396.4	4,657.8	321.6	10.6	362.1	63.4	1,031.4	1,789.1	5,019.1	1,427.8	6,446.9
Yellow birch	1,427.3	258.6	190.9	1,876.8	146.0	0.3	399.9	0.1	666.6	1,212.8	2,232.1	857.5	3,089.7
Black cherry	600.3	421.5	102.5	1,124.3	67.4	2.2	63.6	12.6	229.3	375.1	1,167.6	331.8	1,499.4
Elm	30.8	42.7	5.6	79.1	6.6	0.2	6.4	1.3	17.2	31.8	88.0	22.8	110.8
Hickory	0.9	0.0	0.1	1.0	0.0	--	0.0	--	0.2	0.2	0.9	0.3	1.2
Hard maple	18,283.8	4,619.2	2,578.9	25,481.9	2,573.3	1.5	7,023.6	0.5	10,611.1	20,210.1	32,502.0	13,190.0	45,692.0
Soft maple	6,400.0	6,264.0	1,117.9	13,782.0	983.5	32.4	938.1	191.0	2,905.2	5,050.2	14,809.1	4,023.1	18,832.2
Red oak group	1,173.4	427.3	145.0	1,745.6	98.4	4.0	65.9	39.1	273.5	481.0	1,808.1	418.5	2,226.6
White oak group	2.7	0.8	0.3	3.8	0.2	0.0	0.1	0.1	0.5	0.9	3.9	0.8	4.8
Other hardwoods	47.4	0.1	8.8	56.3	0.1	0.0	4.9	0.0	14.5	19.5	52.5	23.3	75.8
Total	44,315.4	27,061.0	6,235.8	77,612.2	5,310.2	60.0	11,281.0	497.3	22,496.9	39,645.5	88,524.9	28,732.8	117,257.7
Unit total	60,828.1	32,169.0	7,503.1	100,500.2	6,136.2	360.8	11,717.7	926.4	29,790.6	48,931.5	112,138.0	37,293.7	149,431.8

(Table 10 continued on next page)

(Table 10 continued)

NORTHERN LOWER PENINSULA

	Source of material												
	Growing stock				Non-growing stock								
	Used for products				Used for products								
Species group	Sawtimber	Pole-timber	Logging residue (not used)	Total growing stock	Limbwood	Saplings	Cull trees	Dead trees	Logging slash (not used)	Total non growing stock	Total used	Total not used	Total harvested
Softwoods													
Balsam fir	145.9	164.4	20.3	330.5	81.7	8.0	12.1	0.5	41.1	143.5	412.6	61.4	474.0
Hemlock	74.0	76.2	0.8	151.0	94.5	1.1	13.7	0.5	13.5	123.3	260.1	14.3	274.4
Northern white-cedar	200.1	342.1	75.4	617.6	12.8	21.6	5.1	0.5	34.7	74.7	582.3	110.0	692.4
Jack pine	4,996.6	1,368.0	465.1	6,829.7	461.7	56.2	69.5	200.9	2,181.8	2,970.2	7,152.9	2,647.0	9,799.8
Red pine	20,981.6	3,543.3	1,281.8	25,806.8	1,711.4	178.6	275.4	198.4	6,186.4	8,550.1	26,888.7	7,468.2	34,356.9
White pine	690.0	438.3	35.8	1,164.0	458.2	9.7	64.5	3.5	151.2	687.1	1,664.2	187.0	1,851.2
Other pine	198.5	147.6	40.5	386.6	28.7	10.1	5.4	3.2	68.2	115.6	393.6	108.6	502.3
Spruce	185.9	150.7	20.0	356.7	74.4	6.9	10.8	1.0	62.2	155.3	429.7	82.3	512.0
Tamarack	19.0	20.7	0.2	39.9	26.9	0.2	3.7	0.0	2.7	33.5	70.5	2.9	73.4
Total	27,491.6	6,251.3	1,940.0	35,682.9	2,950.3	292.4	460.3	408.8	8,741.7	12,853.4	37,854.7	10,681.7	48,536.3
Hardwoods													
Ash	1,665.2	620.5	171.1	2,456.7	587.9	13.3	211.2	3.2	423.5	1,239.1	3,101.2	594.6	3,695.8
Aspen/balsam poplar	17,108.3	16,812.3	1,449.5	35,370.1	3,027.2	64.0	1,173.1	225.0	5,733.8	10,223.1	38,410.0	7,183.2	45,593.2
Basswood	1,868.4	1,199.0	267.0	3,334.4	566.1	11.0	182.3	25.4	559.4	1,344.3	3,852.2	826.4	4,678.7
Beech	676.0	311.7	71.9	1,059.6	201.5	9.9	141.9	2.9	240.0	596.2	1,344.0	311.9	1,655.8
White birch	481.1	453.0	57.3	991.4	263.9	5.9	67.4	8.3	146.0	491.4	1,279.6	203.2	1,482.8
Yellow birch	76.8	49.1	7.2	133.1	40.5	1.0	27.6	0.2	35.8	105.1	195.1	43.0	238.2
Black cherry	599.2	73.4	96.3	768.8	20.6	1.5	10.7	1.2	132.5	166.6	706.6	228.8	935.4
Black walnut	87.0	1.0	12.5	100.5	1.4	--	4.0	--	20.9	26.3	93.4	33.4	126.8
Cottonwood	32.7	7.1	4.5	44.3	8.3	0.1	1.3	--	6.3	15.9	49.4	10.7	60.2
Elm	52.3	42.2	3.2	97.6	54.7	0.4	7.7	0.0	7.2	69.9	157.1	10.4	167.6
Hickory	49.7	3.9	5.9	59.5	5.1	0.0	1.5	--	10.1	16.8	60.2	16.1	76.3
Hard maple	9,859.3	2,940.8	1,256.1	14,056.2	2,213.2	73.0	1,527.1	20.3	3,258.3	7,091.8	16,633.6	4,514.4	21,148.1
Soft maple	5,933.1	5,335.4	836.7	12,105.1	2,204.0	66.3	765.9	120.9	2,024.4	5,181.5	14,425.5	2,861.1	17,286.7
Red oak group	7,258.4	1,981.5	665.7	9,905.6	1,893.1	42.0	388.8	117.5	1,046.0	3,487.3	11,681.2	1,711.7	13,392.9
White oak group	1,711.0	415.0	161.5	2,287.5	404.4	8.3	88.9	27.1	251.9	780.6	2,654.7	413.4	3,068.1
Yellow-poplar	1.1	0.0	0.2	1.4	0.0	--	0.0	--	0.2	0.3	1.2	0.4	1.6
Other hardwoods	63.3	127.8	8.7	199.9	22.1	4.5	11.6	3.4	29.5	71.1	232.7	38.3	271.0
Total	47,522.9	30,373.6	5,075.2	82,971.7	11,514.0	301.1	4,611.0	555.4	13,925.9	30,907.4	94,878.0	19,001.2	113,879.1
Unit total	75,014.5	36,624.9	7,015.2	118,654.6	14,464.3	593.5	5,071.3	964.2	22,667.6	43,760.9	132,732.6	29,682.8	162,415.5

(Table 10 continued on next page)

(Table 10 continued)

SOUTHERN LOWER PENINSULA

	Source of material												
	Growing stock				Non-growing stock								
	Used for products				Used for products								
Species group	Sawtimber	Pole-timber	Logging residue (not used)	Total growing stock	Limbwood	Saplings	Cull trees	Dead trees	Logging slash (not used)	Total non growing stock	Total used	Total not used	Total harvested
Softwoods													
Eastern redcedar	15.4	41.1	7.6	64.1	1.8	3.1	0.7	0.0	3.3	8.9	62.2	10.9	73.0
Hemlock	0.7	0.8	--	1.5	1.1	0.0	0.2	--	0.1	1.3	2.8	0.1	2.9
Jack pine	35.9	5.1	3.8	44.9	1.4	0.2	0.2	1.2	15.5	18.6	44.2	19.3	63.5
Red pine	1,684.9	91.2	80.9	1,857.0	55.6	3.3	4.7	15.4	511.5	590.5	1,855.1	592.4	2,447.5
White pine	83.2	38.9	4.5	126.6	40.2	0.6	5.4	0.5	19.3	66.1	169.0	23.8	192.8
Other pine	83.3	55.9	14.0	153.2	3.9	3.7	1.3	0.9	30.5	40.3	149.0	44.5	193.5
Spruce	17.5	31.8	4.5	53.8	12.8	1.8	2.0	0.0	3.2	19.9	66.1	7.7	73.7
Tamarack	0.2	0.3	--	0.5	0.4	0.0	0.1	--	0.0	0.4	0.9	0.0	1.0
Total	1,921.2	265.2	115.2	2,301.7	117.2	12.9	14.6	18.0	583.4	746.1	2,349.1	698.7	3,047.8
Hardwoods													
Ash	1,400.5	266.5	188.0	1,855.1	286.4	2.0	57.1	0.0	251.4	597.0	2,012.7	439.5	2,452.1
Aspen/balsam poplar	432.8	330.7	38.0	801.6	99.7	0.6	27.5	3.5	132.1	263.4	894.9	170.1	1,065.0
Basswood	264.4	23.4	47.2	335.0	8.5	0.1	2.2	0.0	50.5	61.3	298.6	97.7	396.3
Beech	109.5	17.6	13.6	140.7	19.8	0.2	5.3	0.0	22.3	47.7	152.5	35.9	188.4
White birch	9.4	8.9	0.3	18.6	11.7	0.1	1.6	--	1.2	14.6	31.7	1.5	33.2
Yellow birch	13.5	3.4	1.9	18.8	3.5	0.0	0.6	--	2.2	6.4	21.1	4.2	25.2
Black cherry	2,038.5	200.8	324.4	2,563.7	170.0	1.1	40.3	0.0	415.6	627.0	2,450.7	740.0	3,190.7
Black walnut	1,358.4	21.3	173.2	1,552.8	28.4	--	30.1	--	287.4	345.9	1,438.2	460.5	1,898.7
Cottonwood	349.1	65.8	55.3	470.2	63.7	0.4	9.9	--	64.5	138.5	489.0	119.8	608.7
Elm	269.9	81.9	44.1	395.9	82.1	0.6	12.6	--	44.7	139.9	447.1	88.8	535.9
Hickory	624.5	80.1	79.9	784.5	91.2	0.6	21.4	--	119.6	232.8	817.8	199.4	1,017.2
Hard maple	2,309.5	91.6	352.6	2,753.7	94.8	1.2	65.7	0.3	544.3	706.2	2,563.1	896.8	3,460.0
Soft maple	2,913.4	559.0	472.6	3,945.1	474.5	3.8	85.7	1.6	556.5	1,122.1	4,038.1	1,029.2	5,067.2
Red oak group	4,028.3	469.5	467.3	4,965.2	447.0	2.5	152.5	60.0	602.0	1,264.0	5,159.9	1,069.3	6,229.2
White oak group	2,614.1	266.6	312.7	3,193.4	233.7	1.2	94.3	38.8	395.6	763.6	3,248.8	708.3	3,957.1
Sweetgum	2.1	0.1	0.3	2.5	0.0	--	0.0	--	0.4	0.5	2.2	0.8	2.9
Sycamore	29.7	4.5	4.6	38.8	4.3	0.0	0.7	--	5.7	10.7	39.2	10.4	49.6
Yellow-poplar	205.2	8.2	33.3	246.8	2.6	--	2.2	--	43.5	48.2	218.2	76.8	295.0
Other hardwoods	165.8	36.9	45.7	248.5	1.3	0.1	0.6	0.0	19.4	21.3	204.6	65.1	269.7
Total	19,138.8	2,536.9	2,655.0	24,330.8	2,123.2	14.6	610.5	104.3	3,558.8	6,411.3	24,528.4	6,213.8	30,742.2
Unit total	21,060.1	2,802.1	2,770.3	26,632.5	2,240.4	27.5	625.1	122.3	4,142.2	7,157.5	26,877.5	6,912.5	33,790.0

[a] Based on factors obtained from regional utilization studies.

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

Table 11.—Growing-stock removals from timberland for industrial roundwood, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Michigan, 2008

Forest Inventory Unit and county	All species	Softwoods											Hardwoods		
		Eastern redcedar	Balsam fir	Hemlock	Northern white-cedar	Jack pine	Red pine	White pine	Other pine	Spruce	Tama-rack	Total softwoods	Ash	Aspen/ balsam poplar	Bass-wood
Eastern Upper Peninsula															
Alger	9,172	--	383	389	186	508	755	87	--	323	41	2,672	124	700	168
Chippewa	10,324	--	325	224	123	2,201	983	48	--	980	15	4,899	67	2,116	76
Delta	10,260	--	465	295	798	1,487	1,309	165	0	293	57	4,868	77	1,788	152
Luce	11,900	--	238	169	158	2,064	764	77	0	394	22	3,888	168	1,702	145
Mackinac	6,704	--	311	62	571	492	534	38	--	577	15	2,601	81	1,333	65
Menominee	12,407	--	735	451	2,942	343	347	218	3	568	102	5,709	179	3,342	390
Schoolcraft	8,215	--	320	122	279	1,496	1,260	95	--	375	36	3,981	58	1,402	56
Total	68,982	--	2,777	1,713	5,056	8,591	5,953	727	4	3,509	289	28,619	754	12,383	1,053
Western Upper Peninsula															
Baraga	13,341	--	469	579	36	514	400	74	--	335	34	2,440	188	1,753	285
Dickinson	10,417	--	610	107	338	324	368	124	--	526	57	2,452	108	3,439	706
Gogebic	9,804	--	197	140	19	66	642	103	1	286	8	1,463	249	1,520	472
Houghton	12,115	--	180	398	53	559	721	36	--	234	11	2,193	214	1,711	400
Iron	11,246	--	742	222	75	454	994	244	--	810	67	3,608	82	2,712	390
Keweenaw	5,125	--	97	70	37	28	56	27	--	110	5	430	74	314	205
Marquette	26,174	--	1,097	1,308	320	2,650	1,250	860	0	941	127	8,554	194	5,716	433
Ontonagon	12,278	--	324	407	26	224	417	57	0	281	11	1,747	347	4,591	579
Total	100,500	--	3,715	3,231	902	4,819	4,849	1,525	2	3,524	321	22,888	1,457	21,757	3,470
Northern Lower Peninsula															
Alcona	3,871	--	4	2	76	168	470	23	4	13	2	761	74	1,600	70
Alpena	3,661	--	8	1	104	61	325	47	3	45	3	596	166	1,539	68
Antrim	3,120	--	1	4	1	29	234	4	3	0	--	276	133	439	496
Arenac	1,284	--	0	1	15	15	201	13	--	0	--	247	102	447	9
Bay	507	--	--	2	--	--	2	5	--	--	--	9	26	227	3
Benzie	2,644	--	2	5	--	109	373	21	0	7	--	516	94	568	93
Charlevoix	1,625	--	4	4	3	7	254	15	--	4	4	295	44	237	174
Cheboygan	6,136	--	16	4	6	206	916	32	0	18	6	1,204	103	2,715	417
Clare	4,517	--	12	3	0	249	722	15	--	1	1	1,003	77	1,954	51
Crawford	5,046	--	9	8	1	1,371	1,034	38	1	9	2	2,473	6	1,062	35
Emmet	2,534	--	6	2	3	30	316	6	4	6	3	376	135	452	245
Gladwin	3,249	--	3	1	4	162	352	35	0	0	0	558	104	1,669	56
Grand Traverse	3,513	--	16	4	--	128	940	85	17	8	4	1,202	53	704	63
Iosco	3,116	--	5	3	1	342	1,693	42	--	5	2	2,092	34	404	9
Isabella	1,764	--	--	2	0	22	163	7	5	0	1	199	127	649	55
Kalkaska	7,306	--	57	9	1	382	2,683	69	23	8	1	3,233	58	1,807	173
Lake	4,567	--	--	4	0	488	1,420	73	8	9	1	2,004	17	894	60
Leelanau	1,489	--	1	13	--	20	180	34	1	0	2	251	116	91	38
Manistee	3,562	--	0	16	--	149	1,105	96	5	--	0	1,371	64	371	44
Mason	4,130	--	1	8	--	45	1,043	38	11	2	--	1,148	70	1,324	31
Mecosta	2,000	--	0	17	--	29	351	50	65	17	0	529	45	811	15
Midland	1,397	--	--	--	--	4	37	28	1	--	--	71	95	480	24
Missaukee	3,629	--	40	5	4	157	988	26	8	19	3	1,250	44	1,257	65
Montmorency	5,813	--	36	2	166	349	640	47	1	40	1	1,283	53	2,735	208
Newaygo	4,262	--	2	5	--	196	1,206	94	51	--	--	1,554	87	578	33
Oceana	3,102	--	2	6	--	43	817	22	40	21	--	951	103	376	31
Ogemaw	2,696	--	3	2	8	208	399	32	--	1	0	654	42	1,204	22
Osceola	3,345	--	11	10	3	53	475	33	103	2	0	690	74	1,615	26

(Table 11 continued on the next page)

(Table 11 continued)

Oscoda	4,500	--	2	--	4	687	1,164	31	0	5	0	1,893	51	1,354	98
Otsego	7,024	--	2	3	1	299	1,330	21	2	6	1	1,665	58	2,180	396
Presque Isle	3,437	--	61	2	215	223	588	16	--	88	2	1,193	58	1,256	105
Roscommon	3,669	--	12	0	1	290	734	36	0	1	1	1,075	42	1,215	11
Wexford	6,141	--	13	4	--	310	2,652	29	30	23	1	3,061	100	1,154	109
Total	118,655	--	331	151	618	6,830	25,807	1,164	387	357	40	35,683	2,457	35,370	3,334
Southern Lower Peninsula															
Allegan	1,368	--	--	--	--	0	3	1	1	0	--	6	57	6	4
Barry	1,688	--	--	--	--	--	18	3	21	32	--	74	33	8	13
Berrien	576	--	--	--	--	--	--	0	1	--	--	1	57	2	7
Branch	604	--	--	--	--	--	--	--	49	--	--	49	53	3	8
Calhoun	960	--	--	--	--	--	1	0	0	2	--	3	65	5	15
Cass	1,171	--	--	--	--	--	4	4	--	1	--	9	22	4	6
Clinton	164	--	--	--	--	--	0	--	0	--	--	0	14	0	8
Eaton	563	--	--	--	--	--	1	1	0	--	--	2	70	2	18
Genesee	360	--	--	--	--	--	0	--	0	--	--	0	40	4	17
Gratiot	412	--	--	--	--	--	12	5	--	--	--	18	89	5	13
Hillsdale	563	--	--	--	--	--	--	5	0	--	--	5	47	3	9
Huron	273	--	--	0	--	2	3	0	0	--	--	5	27	66	2
Ingham	583	--	--	--	--	--	1	1	--	0	--	2	110	3	13
Ionia	649	--	--	--	--	--	95	1	3	--	--	99	46	9	22
Jackson	1,117	64	--	--	--	--	--	--	0	1	--	64	39	12	14
Kalamazoo	822	0	--	--	--	--	17	4	1	1	--	22	59	4	8
Kent	1,524	--	--	--	--	15	93	10	17	12	--	148	70	64	9
Lapeer	403	--	--	0	--	--	9	10	3	0	--	23	34	13	6
Lenawee	398	0	--	--	--	--	--	1	0	--	--	1	18	--	4
Livingston	464	--	--	--	--	--	0	2	--	1	--	3	46	4	1
Macomb	662	--	--	--	--	--	348	0	--	--	--	348	97	1	9
Monroe	159	--	--	--	--	--	0	0	--	--	--	0	21	--	1
Montcalm	823	--	--	--	--	9	136	7	2	--	--	154	30	178	7
Muskegon	1,130	--	--	--	--	3	183	9	4	--	--	199	22	47	2
Oakland	1,375	--	--	--	--	--	4	1	0	0	--	5	124	8	20
Ottawa	1,424	--	--	1	--	13	888	12	38	1	--	952	38	17	4
Saginaw	599	--	--	--	--	1	17	11	11	1	--	41	75	36	7
Sanilac	405	--	--	0	--	1	2	3	0	--	--	6	93	109	4
Shiawassee	184	--	--	--	--	--	2	--	--	--	--	2	16	1	5
St. Clair	848	--	--	0	--	--	--	10	0	0	--	10	151	12	28
St. Joseph	676	--	--	--	--	--	4	20	0	--	--	24	40	7	22
Tuscola	700	--	--	0	--	1	8	2	0	2	--	14	80	154	14
Van Buren	1,970	--	--	--	--	--	4	0	0	0	--	4	39	6	10
Washtenaw	698	--	--	--	--	--	3	4	0	0	1	7	24	5	6
Wayne	319	--	--	--	--	--	--	--	0	--	--	0	12	0	0
Total	26,632	64	--	2	--	45	1,857	127	153	54	1	2,302	1,855	802	335
State total	314,769	64	6,823	5,097	6,576	20,285	38,466	3,542	545	7,443	651	89,492	6,523	70,311	8,192

(Table 11 continued on the next page)

(Table 11 continued)

Forest Inventory Unit and county	Hardwoods																
	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak group	White oak group	Sweet-gum	Syca-more	Yellow-poplar	Other hardwoods	Total hardwoods
Eastern Upper Peninsula																	
Alger	454	744	214	150	--	--	13	--	2,104	1,787	42	--	--	--	--	--	6,500
Chippewa	348	683	62	45	--	--	9	--	852	1,114	52	0	--	--	--	--	5,424
Delta	339	419	131	94	--	--	2	--	1,142	1,204	42	--	--	--	--	1	5,392
Luce	633	869	97	87	--	--	14	--	1,649	2,172	347	130	--	--	--	--	8,012
Mackinac	263	573	65	25	--	--	24	--	876	776	22	--	--	--	--	--	4,103
Menominee	205	461	79	31	--	--	16	1	1,192	627	169	5	--	--	--	1	6,698
Schoolcraft	307	464	93	43	--	--	11	--	636	1,138	26	--	--	--	--	--	4,234
Total	2,549	4,214	742	474	--	--	89	1	8,451	8,817	700	136	--	--	--	1	40,362
Western Upper Peninsula																	
Baraga	475	697	355	169	--	--	19	--	3,956	2,853	148	1	--	--	--	1	10,901
Dickinson	237	500	77	66	--	--	13	1	1,901	710	205	1	--	--	--	1	7,965
Gogebic	23	276	243	157	--	--	13	0	4,127	974	266	2	--	--	--	18	8,341
Houghton	169	342	295	174	--	--	3	--	4,034	2,360	218	0	--	--	--	0	9,922
Iron	86	561	215	113	--	--	15	--	2,685	609	150	--	--	--	--	18	7,637
Keweenaw	87	599	122	74	--	--	1	--	1,805	1,247	166	--	--	--	--	--	4,695
Marquette	928	1,343	337	252	--	--	6	--	4,286	3,751	373	--	--	--	--	1	17,620
Ontonagon	114	339	233	117	--	--	9	--	2,688	1,276	220	--	--	--	--	18	10,531
Total	2,120	4,658	1,877	1,124	--	--	79	1	25,482	13,782	1,746	4	--	--	--	56	77,612
Northern Lower Peninsula																	
Alcona	24	42	1	39	0	--	1	0	129	312	799	18	--	--	--	--	3,110
Alpena	7	67	2	3	0	2	8	0	211	563	416	11	--	--	--	1	3,065
Antrim	87	101	15	15	4	--	3	0	1,122	411	12	1	--	--	--	5	2,843
Arenac	10	13	4	4	0	10	3	2	49	220	131	31	--	--	--	3	1,037
Bay	--	4	--	0	6	1	2	13	1	148	9	57	--	--	--	--	498
Benzie	80	8	4	33	2	--	1	0	882	295	39	5	--	--	--	21	2,128
Charlevoix	21	39	7	6	--	--	1	--	666	109	21	1	--	--	--	4	1,330
Cheboygan	41	171	11	11	2	--	2	0	625	757	65	10	--	--	--	1	4,933
Clare	14	11	--	33	0	10	5	6	311	494	429	110	--	--	--	7	3,514
Crawford	48	10	--	28	1	--	0	0	365	429	501	84	--	--	--	3	2,574
Emmet	21	15	4	18	4	--	1	0	1,101	137	23	2	--	--	--	--	2,158
Gladwin	11	23	--	4	0	3	4	0	108	540	117	45	--	--	--	6	2,691
Grand Traverse	29	3	2	42	49	--	1	0	513	339	315	185	--	--	--	11	2,310
Iosco	0	11	0	9	0	--	1	0	7	236	292	19	--	--	1	--	1,024
Isabella	10	4	0	55	1	13	8	9	280	208	111	30	--	--	--	5	1,565
Kalkaska	81	20	2	36	2	--	1	0	861	603	354	48	--	--	--	25	4,073
Lake	13	2	--	10	0	0	1	0	98	144	952	367	--	--	--	3	2,563
Leelanau	36	6	0	11	3	--	4	0	710	99	109	10	--	--	--	4	1,237
Manistee	29	12	1	56	14	--	2	0	529	431	502	125	--	--	0	11	2,191
Mason	64	3	1	25	0	0	3	1	375	383	472	211	--	--	--	20	2,982
Mecosta	16	4	1	17	1	--	6	3	178	204	139	29	--	--	--	3	1,471
Midland	8	7	--	15	0	1	4	18	99	370	73	129	--	--	--	3	1,326
Missaukee	22	13	2	33	1	--	2	0	351	408	142	33	--	--	--	5	2,379
Montmorency	21	96	0	2	1	--	1	0	295	614	488	15	--	--	--	--	4,530
Newaygo	39	4	2	66	0	--	4	1	355	322	875	335	--	--	--	7	2,708
Oceana	73	1	5	64	0	0	4	4	464	436	468	104	--	--	--	17	2,151
Ogemaw	8	40	1	2	0	3	1	0	89	387	201	37	--	--	--	2	2,042
Osceola	50	7	18	24	1	--	3	0	372	285	156	8	--	--	--	14	2,654

(Table 11 continued on the next page)

(Table 11 continued)

Oscoda	12	20	--	11	0	0	1	0	123	343	573	22	--	--	--	0	2,607
Otsego	107	113	43	17	3	--	6	0	1,529	758	142	7	--	--	--	0	5,359
Presque Isle	13	102	3	0	1	--	5	0	211	349	138	2	--	--	--	--	2,245
Roscommon	7	15	1	9	0	--	2	0	55	416	637	182	--	--	--	3	2,594
Wexford	56	4	3	67	3	--	6	0	989	355	203	18	--	--	--	13	3,080
Total	1,060	991	133	769	101	44	98	59	14,056	12,105	9,906	2,288	--	--	1	200	82,972
Southern Lower Peninsula																	
Allegan	2	--	0	154	121	2	4	17	166	154	380	258	--	1	31	4	1,361
Barry	16	--	0	217	131	0	3	32	310	184	430	236	--	0	0	1	1,614
Berrien	1	--	--	89	12	11	5	15	99	99	67	52	--	4	49	6	575
Branch	1	--	1	31	85	13	22	28	34	142	37	63	1	1	24	8	555
Calhoun	1	--	0	196	83	13	31	66	17	221	120	111	--	1	3	8	957
Cass	1	--	1	284	60	1	8	27	183	226	240	58	--	--	34	8	1,163
Clinton	4	0	--	8	13	5	2	13	13	40	30	15	--	--	0	--	164
Eaton	7	--	--	69	56	4	15	27	118	81	37	55	--	--	0	0	561
Genesee	1	0	0	13	2	13	6	11	50	69	67	66	--	--	--	0	360
Gratiot	6	0	--	16	0	5	4	5	123	26	72	31	--	--	--	1	394
Hillsdale	1	--	--	84	92	0	6	23	78	52	85	63	1	1	8	7	558
Huron	0	2	1	4	0	8	6	0	4	68	63	17	--	--	--	--	268
Ingham	0	--	--	91	126	14	28	23	15	92	20	44	--	1	--	--	581
Ionia	24	--	--	42	67	4	5	31	59	83	95	62	--	--	--	0	550
Jackson	0	--	0	158	86	29	10	82	18	60	300	231	--	--	10	2	1,052
Kalamazoo	--	--	1	128	23	17	12	24	62	74	207	126	--	19	24	14	800
Kent	2	0	2	121	13	2	8	19	452	191	314	107	--	--	0	0	1,376
Lapeer	2	1	1	17	4	3	15	10	43	84	68	78	--	--	--	0	379
Lenawee	0	--	--	35	67	44	7	31	48	31	31	77	--	2	0	0	397
Livingston	--	--	--	67	14	2	7	17	9	70	129	94	--	--	--	--	460
Macomb	3	--	3	14	1	12	21	7	7	109	8	19	--	0	1	--	314
Monroe	--	--	--	5	15	17	1	5	5	34	29	26	--	--	0	0	159
Montcalm	3	1	0	24	4	0	5	5	42	75	180	117	--	--	--	1	669
Muskegon	12	0	2	22	2	--	0	2	69	130	509	111	--	--	--	1	931
Oakland	6	0	--	101	5	24	38	84	58	286	319	295	--	--	--	2	1,369
Ottawa	7	1	1	35	2	7	3	0	80	97	114	61	--	0	1	3	472
Saginaw	1	2	--	14	1	46	7	31	37	150	91	60	--	--	--	--	558
Sanilac	1	5	--	6	1	19	25	1	15	114	2	3	--	--	--	--	398
Shiawassee	5	--	0	9	10	8	4	15	8	32	35	34	--	--	--	0	182
St. Clair	1	2	2	11	0	80	29	8	43	239	93	126	--	5	--	6	838
St. Joseph	7	--	1	86	64	1	18	41	36	135	119	41	1	1	22	10	652
Tuscola	2	4	0	50	6	42	11	12	100	88	68	57	--	--	--	--	687
Van Buren	20	--	3	311	169	10	11	41	305	338	432	221	--	2	33	15	1,966
Washtenaw	0	--	0	46	217	3	9	31	25	41	125	155	--	--	4	0	691
Wayne	2	--	--	8	1	12	8	2	21	30	49	22	--	0	2	150	318
Total	141	19	19	2,564	1,553	470	396	784	2,754	3,945	4,965	3,193	2	39	247	248	24,331
State total	5,868	9,882	2,771	4,931	1,653	514	661	846	50,742	38,649	17,316	5,621	2	39	248	506	225,277

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 12.—Sawtimber removals from timberland for industrial roundwood, in thousand board feet, International 1/4-inch rule, by Forest Inventory Unit, county, and species group, Michigan, 2008

Forest Inventory Unit and county	All species	Softwoods											Hardwoods		
		Eastern redcedar	Balsam fir	Hemlock	Northern white-cedar	Jack pine	Red pine	White pine	Other pine	Spruce	Tama-rack	Total softwoods	Ash	Aspen/ balsam poplar	Bass-wood
Eastern Upper Peninsula															
Alger	26,270	--	1,164	976	307	1,701	3,501	252	--	1,075	112	9,088	389	1,183	312
Chippewa	32,684	--	1,063	561	529	9,642	4,915	170	--	3,213	41	20,136	208	4,148	120
Delta	32,467	--	1,377	739	2,112	4,682	6,048	535	0	1,015	156	16,664	345	3,517	559
Luce	31,162	--	709	425	228	7,153	3,197	242	0	1,364	61	13,379	472	4,293	245
Mackinac	19,936	--	1,016	156	2,310	1,371	2,398	124	--	1,921	42	9,338	249	2,410	205
Menominee	41,155	--	2,080	1,135	12,151	796	1,123	729	9	1,694	275	19,993	893	8,657	1,354
Schoolcraft	24,651	--	963	306	934	5,843	5,603	297	--	1,228	97	15,270	176	2,352	96
Total	208,325	--	8,372	4,298	18,572	31,189	26,785	2,350	10	11,511	783	103,868	2,732	26,560	2,892
Western Upper Peninsula															
Baraga	37,408	--	1,416	1,450	155	1,770	1,686	209	--	1,118	90	7,894	564	3,442	604
Dickinson	29,175	--	1,767	276	541	1,024	1,397	412	--	1,718	153	7,289	390	7,533	2,239
Gogebic	33,501	--	669	358	88	144	3,431	517	7	1,136	22	6,371	900	3,759	1,212
Houghton	40,109	--	609	1,000	117	2,350	3,100	124	--	879	30	8,209	653	3,477	913
Iron	37,747	--	2,237	564	176	1,402	4,312	968	--	2,641	181	12,479	318	5,846	1,507
Keweenaw	13,972	--	349	176	116	60	233	112	--	429	15	1,490	200	721	307
Marquette	74,228	--	3,213	3,274	629	9,863	5,324	4,136	0	3,237	343	30,020	608	11,287	1,004
Ontonagon	33,107	--	1,050	1,022	62	654	1,942	230	1	1,064	31	6,054	1,094	9,179	1,250
Total	299,248	--	11,309	8,119	1,884	17,266	21,426	6,708	8	12,221	865	79,806	4,727	45,244	9,036
Northern Lower Peninsula															
Alcona	13,337	--	10	5	97	518	2,571	77	18	43	4	3,342	336	3,578	238
Alpena	10,960	--	22	2	134	170	1,745	154	10	124	6	2,368	579	3,479	178
Antrim	11,200	--	2	10	2	91	1,153	21	14	1	--	1,293	581	1,295	1,326
Arenac	4,713	--	0	3	24	63	1,126	53	--	0	--	1,269	499	1,155	30
Bay	1,373	--	--	4	--	--	14	21	--	--	--	39	117	446	15
Benzie	8,761	--	3	12	--	238	1,777	75	0	9	--	2,114	335	1,182	275
Charlevoix	6,604	--	10	9	4	16	1,352	58	--	9	9	1,468	180	556	486
Cheboygan	19,022	--	41	9	11	818	4,536	110	1	47	14	5,587	456	6,290	1,241
Clare	15,577	--	17	7	1	807	3,439	48	--	2	3	4,324	329	5,340	214
Crawford	18,964	--	25	19	3	5,727	5,002	106	2	24	5	10,913	18	2,375	86
Emmet	10,734	--	16	4	7	65	1,652	18	16	17	6	1,800	683	1,456	728
Gladwin	8,738	--	5	2	19	437	1,619	138	0	0	0	2,221	460	3,558	217
Grand Traverse	12,455	--	24	9	--	358	3,967	233	35	11	8	4,645	169	1,361	237
Iosco	13,756	--	14	7	2	1,212	9,055	176	--	16	4	10,485	147	937	37
Isabella	6,320	--	--	4	0	47	782	29	18	0	3	882	537	1,618	232
Kalkaska	25,550	--	83	20	2	1,275	12,518	166	43	12	2	14,120	165	3,563	521
Lake	16,777	--	--	8	2	1,837	6,106	198	33	14	2	8,201	60	2,221	260
Leelanau	6,205	--	3	29	--	58	900	100	2	0	5	1,099	503	251	133
Manistee	12,574	--	1	36	--	420	4,841	266	11	--	1	5,575	216	937	151
Mason	13,255	--	1	21	--	203	4,643	116	27	3	--	5,013	182	2,787	81
Mecosta	6,253	--	1	48	--	63	1,673	212	135	25	1	2,158	179	1,517	57
Midland	4,173	--	--	--	--	10	198	93	2	--	--	303	410	888	100
Missaukee	12,211	--	58	14	19	498	4,553	73	17	28	8	5,268	160	2,786	211
Montmorency	16,935	--	97	4	489	1,434	3,476	183	5	112	4	5,803	173	6,094	483
Newaygo	18,011	--	2	12	--	906	5,467	301	109	--	--	6,796	362	1,672	125
Oceana	11,842	--	2	15	--	161	3,865	80	88	28	--	4,239	358	1,070	91
Ogemaw	8,558	--	7	5	10	873	2,141	153	--	3	0	3,193	160	2,905	56

(Table 12 continued on next page)

(Table 12 continued)

Osceola	10,281	--	15	26	14	163	2,199	117	412	8	1	2,955	270	3,734	72
Oscoda	15,933	--	6	--	11	2,657	6,070	153	1	13	1	8,913	191	2,937	242
Otsego	22,557	--	6	16	1	1,100	6,993	87	8	14	2	8,227	176	4,220	1,114
Presque Isle	9,934	--	161	5	286	745	3,147	65	--	236	4	4,648	168	2,618	290
Roscommon	12,846	--	30	1	3	834	3,492	145	1	3	1	4,510	171	2,871	38
Wexford	22,654	--	19	9	--	865	11,495	75	66	34	2	12,565	381	2,451	382
Total	409,065	--	680	376	1,143	24,666	123,568	3,901	1,074	835	96	156,338	9,709	80,148	9,946
Southern Lower Peninsula															
Allegan	7,169	--	--	--	--	0	20	7	8	0	--	35	298	30	21
Barry	8,383	--	--	--	--	--	48	8	26	47	--	129	160	33	63
Berrien	3,007	--	--	--	--	--	--	0	7	--	--	7	307	10	35
Branch	3,019	--	--	--	--	--	--	--	123	--	--	123	284	14	38
Calhoun	4,713	--	--	--	--	--	3	0	0	4	--	7	314	19	77
Cass	6,148	--	--	--	--	--	22	21	--	6	--	49	117	17	31
Clinton	870	--	--	--	--	--	3	--	0	--	--	3	77	0	39
Eaton	2,753	--	--	--	--	--	3	7	0	--	--	10	321	7	91
Genesee	1,871	--	--	--	--	--	0	--	0	--	--	0	210	20	86
Gratiot	2,116	--	--	--	--	--	71	13	--	--	--	84	446	20	66
Hillsdale	2,825	--	--	--	--	--	--	12	0	--	--	12	221	9	46
Huron	1,087	--	--	0	--	5	12	0	0	--	--	18	105	238	8
Ingham	2,975	--	--	--	--	--	7	4	--	0	--	11	563	12	64
Ionia	3,301	--	--	--	--	--	541	7	13	--	--	562	225	36	112
Jackson	5,236	79	--	--	--	--	--	--	0	1	--	81	186	37	74
Kalamazoo	4,276	0	--	--	--	--	98	21	4	3	--	126	318	19	39
Kent	7,384	--	--	--	--	74	428	32	40	18	--	591	327	158	46
Lapeer	1,719	--	--	0	--	--	26	31	11	1	--	69	137	44	31
Lenawee	1,921	2	--	--	--	--	--	3	1	--	--	6	70	--	22
Livingston	2,155	--	--	--	--	--	1	4	--	3	--	8	193	11	6
Macomb	3,401	--	--	--	--	--	1,998	0	--	--	--	1,998	428	2	44
Monroe	693	--	--	--	--	--	0	1	--	--	--	1	73	--	3
Montcalm	3,725	--	--	--	--	27	773	41	8	--	--	847	158	353	34
Muskegon	5,911	--	--	--	--	13	1,052	52	21	--	--	1,138	117	210	7
Oakland	6,439	--	--	--	--	--	12	2	1	1	--	15	571	27	95
Ottawa	7,104	--	--	2	--	61	4,892	30	79	1	--	5,065	153	62	15
Saginaw	2,710	--	--	--	--	2	91	39	54	1	--	187	370	79	37
Sanilac	1,489	--	--	0	--	3	5	6	0	--	--	15	444	222	22
Shiawassee	860	--	--	--	--	--	11	--	--	--	--	11	68	4	25
St. Clair	3,604	--	--	0	--	--	--	29	1	0	--	30	696	42	141
St. Joseph	3,272	--	--	--	--	--	13	93	0	--	--	106	179	29	112
Tuscola	2,945	--	--	1	--	2	32	7	0	5	--	48	386	382	70
Van Buren	10,369	--	--	--	--	--	22	1	0	0	--	23	208	27	49
Washtenaw	3,418	--	--	--	--	--	7	10	0	1	1	19	98	13	29
Wayne	1,437	--	--	--	--	--	--	--	0	--	--	0	46	1	0
Total	130,308	82	--	4	--	186	10,192	483	396	92	1	11,435	8,872	2,186	1,679
State total	1,046,945	82	20,361	12,796	21,599	73,307	181,970	13,440	1,487	24,659	1,745	351,446	26,040	154,138	23,553

(Table 12 continued on next page)

(Table 12 continued)

Forest Inventory Unit and county	Hardwoods																
	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak group	White oak group	Sweet-gum	Syca-more	Yellow-poplar	Other hardwoods	Total hardwoods
Eastern Upper Peninsula																	
Alger	1,732	1,571	870	450	--	--	20	--	7,214	3,419	22	--	--	--	--	--	17,182
Chippewa	1,068	1,341	253	73	--	--	15	--	3,005	2,144	171	1	--	--	--	--	12,549
Delta	1,016	1,521	571	343	--	--	11	--	4,614	3,143	161	--	--	--	--	3	15,803
Luce	2,014	1,423	340	153	--	--	20	--	4,884	3,674	199	64	--	--	--	--	17,782
Mackinac	911	1,209	261	46	--	--	35	--	3,415	1,787	69	--	--	--	--	--	10,598
Menominee	574	1,181	316	101	--	--	46	4	5,533	1,614	859	28	--	--	--	3	21,162
Schoolcraft	985	1,031	369	88	--	--	17	--	2,018	2,182	67	--	--	--	--	--	9,381
Total	8,301	9,278	2,980	1,254	--	--	164	4	30,683	17,962	1,547	93	--	--	--	6	104,457
Western Upper Peninsula																	
Baraga	1,259	1,391	1,456	355	--	--	29	--	14,167	5,831	413	0	--	--	--	3	29,514
Dickinson	629	1,171	315	155	--	--	19	4	7,288	1,359	774	4	--	--	--	3	21,886
Gogebic	62	622	1,044	539	--	--	20	1	15,481	2,234	1,141	11	--	--	--	104	27,130
Houghton	448	831	1,263	473	--	--	5	--	17,076	5,935	828	0	--	--	--	1	31,901
Iron	229	1,459	1,088	513	--	--	23	--	11,791	1,647	744	--	--	--	--	103	25,268
Keweenaw	232	1,094	533	119	--	--	1	--	6,369	2,505	402	--	--	--	--	--	12,483
Marquette	2,468	3,202	1,293	635	--	--	10	--	14,945	7,186	1,568	--	--	--	--	3	44,208
Ontonagon	302	736	892	252	--	--	14	--	9,616	2,740	878	--	--	--	--	100	27,052
Total	5,628	10,506	7,885	3,041	--	--	120	5	96,734	29,436	6,748	16	--	--	--	316	219,442
Northern Lower Peninsula																	
Alcona	119	119	2	202	3	--	2	0	626	779	3,910	81	--	--	--	--	9,995
Alpena	13	137	4	16	2	9	25	0	827	1,456	1,817	50	--	--	--	1	8,592
Antrim	354	154	42	70	20	--	7	1	5,054	924	63	8	--	--	--	7	9,907
Arenac	38	37	16	17	0	48	11	10	175	619	635	150	--	--	--	4	3,444
Bay	--	14	--	0	35	8	7	69	6	311	46	262	--	--	--	--	1,334
Benzie	255	33	17	145	12	--	4	1	3,554	700	102	9	--	--	--	25	6,647
Charlevoix	97	170	21	25	--	--	1	--	3,253	244	95	3	--	--	--	7	5,136
Cheboygan	154	407	33	56	12	--	5	1	2,719	1,706	305	48	--	--	--	1	13,435
Clare	39	29	--	162	2	51	17	33	1,363	1,330	1,847	488	--	--	--	10	11,253
Crawford	236	34	--	141	4	--	0	0	1,627	870	2,282	373	--	--	--	5	8,051
Emmet	111	39	16	92	23	--	2	1	5,306	366	103	9	--	--	--	--	8,934
Gladwin	27	59	--	11	0	10	13	0	359	1,052	538	204	--	--	--	9	6,517
Grand Traverse	79	8	5	202	269	--	4	0	2,081	994	1,493	896	--	--	--	12	7,810
Iosco	0	39	0	48	0	--	3	0	35	536	1,392	88	--	--	7	--	3,270
Isabella	32	10	0	267	5	56	28	46	1,357	629	482	132	--	--	--	7	5,438
Kalkaska	291	87	7	154	11	--	4	1	3,439	1,275	1,650	227	--	--	--	36	11,430
Lake	42	6	--	49	1	0	2	0	344	413	3,613	1,559	--	--	--	5	8,576
Leelanau	119	15	1	50	16	--	12	1	3,353	311	322	15	--	--	--	3	5,107
Manistee	69	29	2	276	77	--	6	0	2,093	1,226	1,554	343	--	--	0	17	6,999
Mason	176	8	4	101	1	0	8	3	880	1,122	1,969	899	--	--	--	20	8,242
Mecosta	58	11	3	81	3	--	17	14	735	688	604	126	--	--	--	4	4,096
Midland	29	15	--	72	1	5	11	95	453	848	340	597	--	--	--	4	3,869
Missaukee	89	46	5	164	4	--	4	0	1,561	1,127	629	149	--	--	--	8	6,943
Montmorency	61	201	0	9	4	--	3	3	1,022	1,291	1,725	62	--	--	--	--	11,132
Newaygo	143	16	6	330	3	--	12	4	1,607	1,237	4,155	1,533	--	--	--	10	11,215
Oceana	240	3	22	304	3	1	15	20	1,525	1,408	2,097	428	--	--	--	18	7,603
Ogemaw	23	66	2	8	2	8	4	0	311	656	977	183	--	--	--	3	5,365

(Table 12 continued on next page)

(Table 12 continued)

Osceola	173	24	62	107	5	--	10	2	1,364	765	684	35	--	--	--	19	7,326
Oscoda	63	56	--	54	1	0	3	0	527	716	2,126	102	--	--	--	1	7,019
Otsego	351	237	99	64	17	--	16	1	6,037	1,440	524	32	--	--	--	1	14,329
Presque Isle	38	250	6	1	4	--	13	0	697	747	448	5	--	--	--	--	5,286
Roscommon	23	53	5	40	0	--	6	0	196	1,063	3,000	867	--	--	--	5	8,337
Wexford	206	10	8	330	15	--	16	1	4,486	838	871	79	--	--	--	18	10,089
Total	3,752	2,420	387	3,651	558	196	288	309	58,970	29,686	42,400	10,040	--	--	7	261	252,728
Southern Lower Peninsula																	
Allegan	12	--	0	784	665	10	21	93	938	778	1,965	1,332	--	4	163	21	7,134
Barry	82	--	0	1,087	723	1	11	155	1,749	888	2,135	1,161	--	1	0	5	8,254
Berrien	5	--	--	456	65	54	22	81	552	498	346	267	--	19	251	33	3,000
Branch	3	--	4	160	468	67	108	152	194	708	192	329	4	6	123	42	2,896
Calhoun	3	--	1	948	459	61	148	335	94	1,027	590	564	--	7	15	43	4,706
Cass	6	--	6	1,452	332	6	39	146	1,036	1,152	1,241	301	--	--	174	42	6,099
Clinton	22	0	--	42	71	24	8	69	76	204	155	80	--	--	0	--	867
Eaton	25	--	--	333	309	18	48	120	667	360	173	268	--	--	2	0	2,743
Genesee	8	0	0	65	10	68	29	62	280	347	345	340	--	--	--	0	1,871
Gratiot	27	0	--	79	1	22	17	26	696	121	355	153	--	--	--	3	2,032
Hillsdale	7	--	--	399	503	0	26	111	439	239	408	321	4	6	40	34	2,813
Huron	0	6	1	16	0	30	19	1	24	267	273	78	--	--	--	--	1,069
Ingham	0	--	--	452	692	63	133	120	86	449	104	221	--	4	--	--	2,965
Ionia	130	--	--	204	370	19	19	159	329	374	471	291	--	--	--	0	2,739
Jackson	1	--	0	752	474	127	39	411	104	277	1,452	1,160	--	--	51	12	5,156
Kalamazoo	--	--	4	652	124	85	59	129	348	373	1,062	647	--	95	124	71	4,150
Kent	9	0	8	586	71	11	30	95	2,547	853	1,522	529	--	--	0	2	6,793
Lapeer	6	3	2	62	21	13	56	34	237	346	292	362	--	--	--	1	1,649
Lenawee	1	--	--	155	367	203	20	145	273	125	139	388	--	5	1	1	1,915
Livingston	--	--	--	303	78	7	24	88	48	300	615	473	--	--	--	--	2,147
Macomb	15	--	15	65	8	51	93	31	36	483	38	88	--	1	6	--	1,403
Monroe	--	--	--	22	80	69	4	24	31	132	125	129	--	--	1	0	692
Montcalm	14	3	0	120	20	2	23	27	227	361	927	606	--	--	--	2	2,878
Muskegon	63	2	10	113	12	--	1	10	380	642	2,633	571	--	--	--	2	4,773
Oakland	28	0	--	470	30	107	172	398	303	1,306	1,493	1,412	--	--	--	12	6,424
Ottawa	19	1	3	155	12	32	10	1	371	377	523	289	--	1	5	10	2,039
Saginaw	7	5	--	68	7	218	27	161	211	593	443	297	--	--	--	--	2,523
Sanilac	3	12	--	26	7	88	111	4	82	427	12	15	--	--	--	--	1,475
Shiawassee	27	--	0	39	57	31	13	73	44	136	166	166	--	--	--	0	849
St. Clair	4	6	11	40	0	364	133	39	110	1,017	344	581	--	16	--	29	3,573
St. Joseph	34	--	3	413	351	7	83	198	204	605	561	210	4	6	114	53	3,166
Tuscola	6	11	0	248	32	201	35	60	567	295	325	280	--	--	--	--	2,898
Van Buren	110	--	17	1,591	929	52	54	219	1,724	1,727	2,236	1,144	--	13	170	77	10,347
Washtenaw	1	--	0	215	1,197	12	34	142	136	169	558	774	--	--	19	1	3,399
Wayne	5	--	--	34	3	41	30	8	113	119	208	104	--	0	10	715	1,437
Total	683	50	86	12,605	8,551	2,164	1,699	3,927	15,256	18,074	24,426	15,933	13	183	1,271	1,214	118,873
State total	18,364	22,254	11,339	20,550	9,108	2,360	2,273	4,246	201,643	95,159	75,120	26,081	13	183	1,278	1,797	695,499

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 13.—Harvest residue generated by industrial roundwood harvesting, in thousand cubic feet, by Forest Inventory Unit, county, and species group, Michigan, 2008

Forest Inventory Unit and county	All species	Softwoods											Hardwoods		
		Eastern redcedar	Balsam fir	Hemlock	Northern white-cedar	Jack pine	Red pine	White pine	Other pine	Spruce	Tama-rack	Total softwoods	Ash	Aspen/ balsam poplar	Bass-wood
Eastern Upper Peninsula															
Alger	3,540	--	142	153	38	196	262	33	--	125	15	964	72	160	49
Chippewa	3,783	--	125	88	52	975	340	18	--	377	5	1,981	39	491	22
Delta	3,572	--	171	116	228	557	457	63	0	116	20	1,727	32	415	46
Luce	4,441	--	88	66	29	810	271	30	0	155	8	1,457	104	406	42
Mackinac	2,385	--	119	24	230	174	186	14	--	223	5	978	47	307	19
Menominee	4,265	--	265	177	1,206	113	128	84	1	208	36	2,218	63	812	117
Schoolcraft	2,979	--	118	48	96	623	446	36	--	144	13	1,525	34	321	16
Total	24,965	--	1,028	671	1,881	3,449	2,091	278	1	1,348	102	10,849	391	2,912	311
Western Upper Peninsula															
Baraga	5,284	--	174	227	16	201	145	29	--	129	12	932	111	416	83
Dickinson	3,544	--	222	42	67	122	136	47	--	200	20	856	56	829	210
Gogebic	3,960	--	77	55	9	21	220	36	1	119	3	540	127	388	138
Houghton	4,547	--	70	156	13	242	246	14	--	95	4	841	126	416	117
Iron	3,948	--	275	87	20	169	358	91	--	309	24	1,331	40	665	118
Keweenaw	2,045	--	39	28	12	9	20	11	--	45	2	166	47	80	59
Marquette	9,618	--	401	513	75	1,077	452	304	0	367	45	3,233	112	1,357	127
Ontonagon	4,349	--	124	159	7	81	148	22	0	114	4	660	198	1,097	169
Total	37,294	--	1,381	1,266	219	1,922	1,725	555	1	1,379	113	8,561	818	5,248	1,022
Northern Lower Peninsula															
Alcona	917	--	0	0	13	61	148	3	2	3	0	230	18	333	19
Alpena	725	--	1	0	18	21	100	7	1	13	0	161	25	274	12
Antrim	976	--	0	0	0	11	72	1	1	0	--	86	44	99	136
Arenac	341	--	0	0	3	6	66	2	--	0	--	77	28	103	2
Bay	112	--	--	0	--	--	1	1	--	--	--	2	6	46	1
Benzie	654	--	0	0	--	35	111	4	0	1	--	152	25	91	23
Charlevoix	486	--	0	0	1	2	79	3	--	0	0	86	11	52	47
Cheboygan	1,698	--	2	0	1	85	260	5	0	2	0	355	36	626	118
Clare	1,140	--	2	0	0	90	207	2	--	0	0	302	19	445	15
Crawford	1,513	--	3	3	0	570	295	5	0	2	1	878	4	235	10
Emmet	758	--	1	0	1	10	101	1	1	1	0	114	35	93	67
Gladwin	801	--	1	0	2	56	101	7	0	0	0	166	25	356	13
Grand Traverse	854	--	2	0	--	44	258	10	4	1	0	321	11	150	13
Iosco	896	--	1	0	0	130	533	9	--	1	0	674	7	84	2
Isabella	432	--	--	0	0	7	46	1	1	0	0	56	27	139	14
Kalkaska	2,006	--	9	0	0	141	767	8	4	1	0	931	25	388	41
Lake	1,064	--	--	0	0	187	377	9	3	1	0	578	4	191	15
Leelanau	327	--	0	1	--	7	54	3	0	0	0	65	24	11	7
Manistee	770	--	0	1	--	51	305	12	1	--	0	370	12	56	8
Mason	702	--	0	1	--	19	283	5	3	0	--	311	12	114	5
Mecosta	438	--	0	4	--	9	100	11	14	2	0	141	10	152	3
Midland	323	--	--	--	--	1	12	4	0	--	--	17	21	99	6
Missaukee	942	--	6	0	2	57	275	3	2	3	0	348	11	280	18
Montmorency	1,340	--	11	0	27	147	205	9	0	13	0	412	13	541	51
Newaygo	1,013	--	0	0	--	85	334	16	12	--	--	448	19	97	7
Oceana	666	--	0	0	--	17	236	4	10	4	--	271	18	60	5
Ogemaw	725	--	0	0	1	88	125	8	--	0	0	223	11	270	6
Osceola	823	--	2	1	1	19	135	6	40	1	0	205	20	340	6

(Table 13 continued on the next page)

(Table 13 continued)

Oscoda	1,168	--	0	--	1	278	367	8	0	1	0	656	8	279	25
Otsego	1,834	--	0	1	0	118	423	5	1	1	0	549	19	433	88
Presque Isle	749	--	17	0	38	84	185	3	--	28	0	356	7	241	17
Roscommon	901	--	1	0	0	103	198	7	0	0	0	309	11	276	3
Wexford	1,588	--	2	0	--	107	711	3	7	3	0	834	26	229	24
Total	29,683	--	61	14	110	2,647	7,468	187	109	82	3	10,682	595	7,183	826
Southern Lower Peninsula															
Allegan	369	--	--	--	--	0	1	0	1	0	--	2	16	2	1
Barry	441	--	--	--	--	--	4	0	4	5	--	12	8	2	4
Berrien	172	--	--	--	--	--	--	0	1	--	--	1	16	1	2
Branch	173	--	--	--	--	--	--	--	16	--	--	16	15	1	2
Calhoun	247	--	--	--	--	--	0	0	0	0	--	0	16	1	5
Cass	334	--	--	--	--	--	1	1	--	1	--	3	6	1	2
Clinton	46	--	--	--	--	--	0	--	0	--	--	0	4	0	2
Eaton	142	--	--	--	--	--	0	0	0	--	--	1	15	0	5
Genesee	98	--	--	--	--	--	0	--	0	--	--	0	11	1	5
Gratiot	109	--	--	--	--	--	4	0	--	--	--	4	23	1	4
Hillsdale	148	--	--	--	--	--	--	0	0	--	--	0	11	0	3
Huron	55	--	--	0	--	1	1	0	0	--	--	1	5	15	0
Ingham	159	--	--	--	--	--	0	0	--	0	--	1	29	1	4
Ionia	172	--	--	--	--	--	31	0	1	--	--	33	11	2	7
Jackson	266	11	--	--	--	--	--	--	0	0	--	11	9	1	4
Kalamazoo	222	0	--	--	--	--	6	1	0	0	--	8	17	1	2
Kent	414	--	--	--	--	7	25	2	4	2	--	40	16	14	3
Lapeer	84	--	--	0	--	--	1	1	1	0	--	3	6	2	2
Lenawee	101	0	--	--	--	--	--	0	0	--	--	0	3	--	1
Livingston	104	--	--	--	--	--	0	0	--	0	--	0	9	0	0
Macomb	183	--	--	--	--	--	116	0	--	--	--	116	20	0	2
Monroe	33	--	--	--	--	--	0	0	--	--	--	0	3	--	0
Montcalm	225	--	--	--	--	3	45	2	1	--	--	51	9	41	2
Muskegon	305	--	--	--	--	1	61	3	2	--	--	67	6	12	0
Oakland	313	--	--	--	--	--	0	0	0	0	--	1	28	1	5
Ottawa	408	--	--	0	--	6	286	2	9	0	--	303	7	3	1
Saginaw	147	--	--	--	--	0	5	2	5	0	--	12	19	7	2
Sanilac	97	--	--	0	--	0	1	0	0	--	--	1	22	23	1
Shiawassee	41	--	--	--	--	--	1	--	--	--	--	1	3	0	1
St. Clair	171	--	--	0	--	--	--	1	0	0	--	1	34	2	8
St. Joseph	172	--	--	--	--	--	1	5	0	--	--	5	9	2	7
Tuscola	170	--	--	0	--	0	2	0	0	0	--	2	19	31	4
Van Buren	549	--	--	--	--	--	1	0	0	0	--	1	11	2	3
Washtenaw	174	--	--	--	--	--	0	0	0	0	0	1	4	0	2
Wayne	69	--	--	--	--	--	--	--	0	--	--	0	2	0	0
Total	6,912	11	--	0	--	19	592	24	45	8	0	699	439	170	98
State total	98,854	11	2,470	1,951	2,210	8,037	11,876	1,044	155	2,817	218	30,790	2,243	15,513	2,257

(Table 13 continued on the next page)

(Table 13 continued)

Forest Inventory Unit and county	Hardwoods																
	Beech	White birch	Yellow birch	Black cherry	Black walnut	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak group	White oak group	Sweet-gum	Syca-more	Yellow-poplar	Other hardwoods	Total hardwoods
Eastern Upper Peninsula																	
Alger	225	217	100	45	--	--	4	--	1,176	520	10	--	--	--	--	--	2,576
Chippewa	204	199	29	13	--	--	3	--	468	324	12	0	--	--	--	--	1,803
Delta	203	137	58	28	--	--	1	--	562	355	10	--	--	--	--	0	1,844
Luce	362	252	52	25	--	--	4	--	999	629	80	30	--	--	--	--	2,984
Mackinac	142	167	31	7	--	--	7	--	447	227	5	--	--	--	--	--	1,407
Menominee	127	143	37	9	--	--	5	0	511	184	38	1	--	--	--	0	2,047
Schoolcraft	176	138	45	13	--	--	3	--	372	331	6	--	--	--	--	--	1,454
Total	1,436	1,253	353	140	--	--	26	0	4,534	2,571	159	31	--	--	--	0	14,116
Western Upper Peninsula																	
Baraga	302	211	167	50	--	--	6	--	2,139	832	34	0	--	--	--	0	4,352
Dickinson	151	153	36	19	--	--	4	0	976	207	47	0	--	--	--	0	2,688
Gogebic	15	84	106	47	--	--	4	0	2,149	284	69	0	--	--	--	8	3,420
Houghton	108	107	134	51	--	--	1	--	1,901	694	50	0	--	--	--	0	3,705
Iron	55	175	76	35	--	--	4	--	1,227	180	33	--	--	--	--	8	2,617
Keweenaw	56	177	53	22	--	--	0	--	983	363	39	--	--	--	--	--	1,879
Marquette	590	417	169	74	--	--	2	--	2,360	1,092	86	--	--	--	--	0	6,384
Ontonagon	73	103	116	34	--	--	2	--	1,455	372	61	--	--	--	--	7	3,689
Total	1,348	1,428	858	332	--	--	23	0	13,190	4,023	419	1	--	--	--	23	28,733
Northern Lower Peninsula																	
Alcona	7	10	0	12	0	--	0	0	42	80	163	3	--	--	--	--	687
Alpena	2	7	0	1	0	1	1	0	52	114	72	2	--	--	--	0	563
Antrim	31	29	8	5	1	--	0	0	416	115	3	1	--	--	--	1	891
Arenac	5	3	1	1	0	3	0	1	26	58	26	6	--	--	--	1	263
Bay	--	1	--	0	2	0	0	4	0	38	2	10	--	--	--	--	110
Benzie	19	2	1	9	1	--	0	0	263	60	4	1	--	--	--	3	502
Charlevoix	8	9	1	2	--	--	0	--	236	29	4	0	--	--	--	1	401
Cheboygan	20	48	6	4	1	--	0	0	255	214	13	2	--	--	--	0	1,342
Clare	7	2	--	10	0	3	1	2	119	117	78	20	--	--	--	2	839
Crawford	15	2	--	9	0	--	0	0	135	118	91	15	--	--	--	1	635
Emmet	6	3	1	6	2	--	0	0	390	35	4	1	--	--	--	--	644
Gladwin	6	4	--	1	0	0	1	0	56	141	21	8	--	--	--	2	634
Grand Traverse	7	0	0	12	14	--	0	0	140	80	61	41	--	--	--	2	533
Iosco	0	2	0	3	0	--	0	0	2	62	56	4	--	--	0	--	223
Isabella	5	0	0	16	0	3	1	2	100	44	19	5	--	--	--	1	376
Kalkaska	31	5	0	11	1	--	0	0	327	158	72	10	--	--	--	7	1,075
Lake	3	0	--	3	0	0	0	0	30	28	147	64	--	--	--	1	486
Leelanau	5	0	0	3	1	--	0	0	180	16	13	1	--	--	--	0	262
Manistee	5	1	0	17	4	--	0	0	135	81	65	12	--	--	0	1	399
Mason	11	0	0	6	0	0	0	0	65	61	79	36	--	--	--	2	391
Mecosta	4	0	0	5	0	--	1	1	46	46	24	5	--	--	--	0	297
Midland	4	0	--	4	0	0	0	5	41	86	14	24	--	--	--	1	306
Missaukee	8	2	0	10	0	--	0	0	130	100	25	6	--	--	--	2	594
Montmorency	8	23	0	1	0	--	0	0	92	135	60	2	--	--	--	--	928
Newaygo	8	1	0	20	0	--	0	0	100	71	176	64	--	--	--	1	565
Oceana	12	0	1	18	0	0	1	1	87	88	86	17	--	--	--	1	395
Ogemaw	5	10	0	1	0	0	0	0	43	107	40	8	--	--	--	1	502
Osceola	16	1	2	7	0	--	0	0	129	66	27	1	--	--	--	3	619

(Table 13 continued on the next page)

(Table 13 continued)

Oscoda	3	2	--	3	0	0	0	0	33	77	77	4	--	--	--	0	512
Otsego	25	23	19	5	1	--	0	0	469	179	19	1	--	--	--	0	1,285
Presque Isle	2	10	1	0	0	--	0	0	40	62	14	0	--	--	--	--	394
Roscommon	3	3	0	3	0	--	0	0	27	108	122	35	--	--	--	1	592
Wexford	17	0	0	21	1	--	0	0	307	87	35	3	--	--	--	3	754
Total	312	203	43	229	33	11	10	16	4,514	2,861	1,712	413	--	--	0	38	19,001
Southern Lower Peninsula																	
Allegan	1	--	0	47	35	1	1	5	53	46	89	60	--	0	10	1	367
Barry	4	--	0	64	39	0	0	8	106	51	92	51	--	0	0	0	429
Berrien	0	--	--	28	4	3	1	4	36	30	15	13	--	1	15	2	171
Branch	0	--	0	10	25	4	6	8	11	42	8	14	0	0	7	3	157
Calhoun	0	--	0	56	25	3	8	17	5	58	25	24	--	0	1	3	247
Cass	0	--	0	88	18	0	2	8	58	69	53	13	--	--	10	3	331
Clinton	1	0	--	3	4	1	0	4	4	12	7	3	--	--	0	--	46
Eaton	1	--	--	19	16	1	2	6	37	20	7	11	--	--	0	0	142
Genesee	0	0	0	4	1	4	2	3	18	20	15	15	--	--	--	0	98
Gratiot	1	0	--	5	0	1	1	1	39	7	15	6	--	--	--	0	104
Hillsdale	0	--	--	23	27	0	1	6	27	14	17	14	0	0	2	2	148
Huron	0	0	0	1	0	2	1	0	1	15	11	3	--	--	--	--	53
Ingham	0	--	--	27	37	3	8	6	5	26	4	9	--	0	--	--	159
Ionia	7	--	--	12	20	1	1	8	18	21	20	12	--	--	--	0	139
Jackson	0	--	0	44	25	7	2	21	6	16	63	53	--	--	3	1	255
Kalamazoo	--	--	0	39	7	5	3	7	20	22	46	28	--	6	7	4	215
Kent	0	0	0	34	4	1	1	5	154	47	70	24	--	--	0	0	374
Lapeer	0	0	0	3	1	1	3	1	16	17	13	16	--	--	--	0	81
Lenawee	0	--	--	9	20	11	1	7	18	6	6	18	--	0	0	0	101
Livingston	--	--	--	17	4	0	1	4	3	16	27	22	--	--	--	--	104
Macomb	1	--	1	3	0	2	4	1	2	23	2	4	--	0	0	--	67
Monroe	--	--	--	1	4	4	0	1	2	7	5	6	--	--	0	0	33
Montcalm	1	0	0	7	1	0	1	1	14	22	44	29	--	--	--	0	174
Muskegon	3	0	1	7	1	--	0	1	22	38	121	25	--	--	--	0	238
Oakland	1	0	--	25	2	5	8	20	16	66	69	66	--	--	--	1	312
Ottawa	1	0	0	9	1	2	0	0	25	20	24	12	--	0	0	1	105
Saginaw	0	0	--	4	0	12	1	8	12	37	18	12	--	--	--	--	134
Sanilac	0	0	--	1	0	5	6	0	5	30	0	1	--	--	--	--	96
Shiawassee	1	--	0	2	3	2	1	4	3	7	7	7	--	--	--	0	40
St. Clair	0	0	1	2	0	20	7	2	3	53	12	24	--	1	--	2	170
St. Joseph	2	--	0	24	19	0	5	10	12	34	24	10	0	0	7	3	167
Tuscola	0	0	0	15	2	12	1	3	34	21	13	12	--	--	--	--	168
Van Buren	7	--	1	95	49	3	3	12	99	103	96	49	--	1	10	5	548
Washtenaw	0	--	0	13	65	1	1	7	8	8	25	38	--	--	1	0	173
Wayne	0	--	--	2	0	2	1	0	6	6	9	4	--	0	1	35	69
Total	36	2	4	740	461	120	89	199	897	1,029	1,069	708	1	10	77	65	6,214
State total	3,132	2,885	1,258	1,441	494	131	148	216	23,135	10,484	3,358	1,154	1	10	77	127	68,064

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 14.—Disposition of residues produced at primary wood-using mills, in thousand tons, green weight, by Forest Inventory Unit, disposition, residue type, and softwoods and hardwoods, Michigan, 2008

Forest Inventory Unit and disposition	Total all residues		Residue type							
			Wood residue						Bark	
			Total wood residue		Coarse		Fine			
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
All Units										
Fiber products	252.27	287.24	252.27	287.24	128.48	273.80	123.80	13.44	--	--
Industrial fuel	413.57	924.59	260.66	404.56	197.47	95.79	63.19	308.77	152.91	520.03
Residential fuel	5.81	63.41	4.54	47.28	4.43	47.09	0.11	0.19	1.27	16.13
Pellets	0.33	56.29	0.33	56.26	0.19	40.50	0.14	15.76	--	0.03
Mulch	192.76	181.43	89.52	61.58	58.31	54.65	31.21	6.93	103.24	119.85
Miscellaneousa	70.26	188.82	65.71	147.44	4.54	25.59	61.17	121.85	4.55	41.38
Not used	0.67	29.00	0.35	5.55	0.20	3.55	0.15	2.00	0.31	23.45
Total	935.67	1,730.78	673.39	1,009.92	393.61	540.98	279.77	468.94	262.28	720.86
Eastern Upper Peninsula Unit										
Fiber products	4.84	60.55	4.84	60.55	4.83	60.55	0.02	--	--	--
Industrial fuel	106.97	218.68	34.96	77.21	0.59	6.06	34.37	71.15	72.01	141.47
Residential fuel	0.74	0.22	0.58	0.20	0.58	0.09	--	0.12	0.17	0.01
Pellets	--	8.47	--	8.47	--	2.04	--	6.42	--	--
Mulch	27.48	12.91	19.29	2.80	18.10	2.80	1.19	--	8.19	10.12
Miscellaneousa	18.75	19.37	15.87	4.92	1.86	1.41	14.00	3.51	2.88	14.45
Not used	0.04	0.36	0.03	0.29	0.02	0.18	0.01	0.11	0.01	0.08
Total	158.82	320.56	75.56	154.44	25.98	73.13	49.58	81.31	83.26	166.12
Western Upper Peninsula Unit										
Fiber products	91.81	100.30	91.81	100.30	3.60	100.30	88.21	--	--	--
Industrial fuel	250.74	442.73	187.18	172.93	170.20	16.89	16.97	156.04	63.57	269.79
Residential fuel	0.31	0.10	0.27	0.08	0.27	0.08	--	--	0.03	0.03
Mulch	7.19	2.48	0.14	--	0.14	--	--	--	7.04	2.48
Miscellaneousa	0.23	13.33	0.18	9.34	0.01	--	0.17	9.34	0.06	3.98
Not used	0.04	0.04	0.03	0.02	--	--	0.03	0.02	0.01	0.01
Total	350.32	558.96	279.61	282.67	174.23	117.27	105.39	165.40	70.70	276.29

(Table 14 continued on the next page)

(Table 14 continued)

Northern Lower Peninsula Unit										
Fiber products	155.62	78.67	155.62	78.67	120.05	65.24	35.57	13.44	--	--
Industrial fuel	55.26	236.75	37.93	128.25	26.10	55.47	11.83	72.78	17.33	108.50
Residential fuel	4.23	47.52	3.30	34.53	3.19	34.47	0.11	0.06	0.93	12.98
Pellets	0.33	8.78	0.33	8.78	0.19	4.65	0.14	4.14	--	--
Mulch	157.68	100.30	69.97	39.57	39.98	32.78	30.00	6.79	87.71	60.73
Miscellaneousa	50.93	94.78	49.34	79.95	2.61	14.39	46.73	65.56	1.59	14.83
Not used	0.34	23.28	0.10	2.01	0.04	1.23	0.06	0.78	0.24	21.27
Total	424.40	590.09	316.59	371.77	192.17	208.22	124.43	163.55	107.80	218.31
Southern Lower Peninsula Unit										
Fiber products	--	47.72	--	47.72	--	47.72	--	--	--	--
Industrial fuel	0.60	26.43	0.60	26.17	0.57	17.37	0.02	8.79	0.01	0.26
Residential fuel	0.53	15.57	0.39	12.46	0.39	12.45	0.00	0.01	0.14	3.11
Pellets	--	39.04	--	39.01	--	33.81	--	5.20	--	0.03
Mulch	0.41	65.75	0.12	19.22	0.09	19.08	0.03	0.14	0.30	46.53
Miscellaneousa	0.34	61.35	0.32	53.23	0.05	9.79	0.27	43.44	0.02	8.12
Not used	0.25	5.32	0.19	3.23	0.14	2.14	0.05	1.09	0.06	2.08
Total	2.14	261.17	1.61	201.04	1.24	142.37	0.38	58.68	0.52	60.13

[a] *Includes livestock bedding, small dimension, and specialty items, etc.*

All table cells without observations are indicated by --. Table value of 0.00 indicates the volume rounds to less than 10 green tons.

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

This page intentionally left blank

Haugen, David E.; Walters, Brian F.; Piva, Ronald J.; Neumann, David. 2014. **Michigan timber industry—an assessment of timber product output and use, 2008.** Resour. Bull. NRS-93. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 67 p.

Presents recent Michigan forest industry trends; production and receipts of industrial roundwood; and production of saw logs, veneer logs, pulpwood, and other products in 2008. Logging residue generated from timber harvest operations is reported, as well as wood and bark residue generated at primary wood-using mills and disposition of mill residues.

KEY WORDS: industrial roundwood, harvest residue, mill residue, production, pulpwood, receipts, saw logs, veneer logs.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternate means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202)720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, DC 20250-9410, or call (800)795-3272 (voice) or (202)720-6382 (TDD). USDA is an equal opportunity provider and employer.

Printed on Recycled Paper

Northern Research Station

www.nrs.fs.fed.us