

# Michigan Timber Industry, 2010

## Resource Update FS-78

This resource update provides an overview of timber product output (TPO) and use in Michigan based on 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. This study was a cooperative effort between the Michigan Department

of Natural Resources (MI-DNR) and the Forest Inventory and Analysis (FIA) unit at the Northern Research Station (NRS) of the U.S. Forest Service. The MI-DNR surveys all known primary wood-using mills and FIA processes and analyzes the survey responses. This update presents results from the 2010 survey with comparisons to the 2008 survey. The data were accessed in September 2014 from the FIA database (<http://www.fia.fs.fed.us/tools-data/>). A summary of the data collected can be found as resource files at <http://www.nrs.fs.fed.us/pubs/50686>. Certain terms used in this report—retained, export, import, production, and receipts—have special meanings and relationships unique to the FIA program that surveys timber product output (Fig. 1).

### Overview

In 2010, Michigan's primary wood-using industry included 216 sawmills, 4 veneer mills, 7 pulp and composite product mills, 6 industrial fuelwood mills, 12 post and pole mills, and 18 mills that produced other products (Fig. 2, Table 1).

There were 23 fewer medium and small mills in 2010 than in 2008.

Total production of industrial roundwood harvest from Michigan forests in 2010 was 340 million cubic feet, of which 300 million was processed by mills within the state, and 40 million cubic feet were exported to primary wood processing mills in other states, primarily in Wisconsin, Minnesota, and Indiana (Table 1). Saw log harvests accounted for 47 percent of the total wood material harvested within the state. Industrial roundwood harvests resulted in 99.7 million cubic feet of logging residues. Primary mills generated 2.8 million green tons of mill residues, and 43 percent of mill residues were used for industrial fuel. About 1 percent of mill residues were not used for other products (sent to landfills). Total receipts at Michigan primary mills totaled about 325.7 million cubic feet—300 million cubic feet from Michigan sources and 26 million cubic feet from other States and Canada.

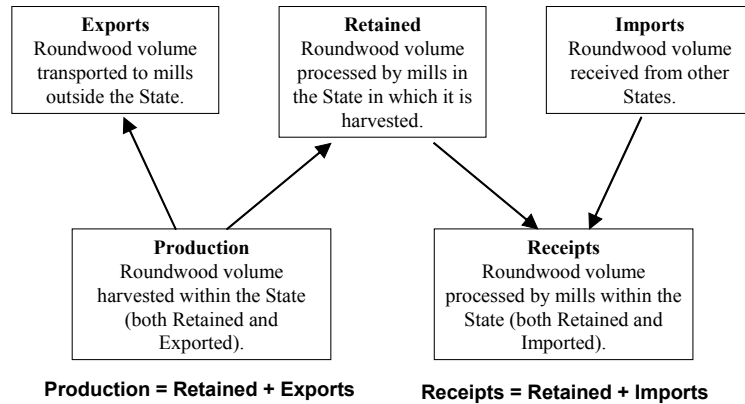


Figure 1.—Diagram of the movement of industrial roundwood.

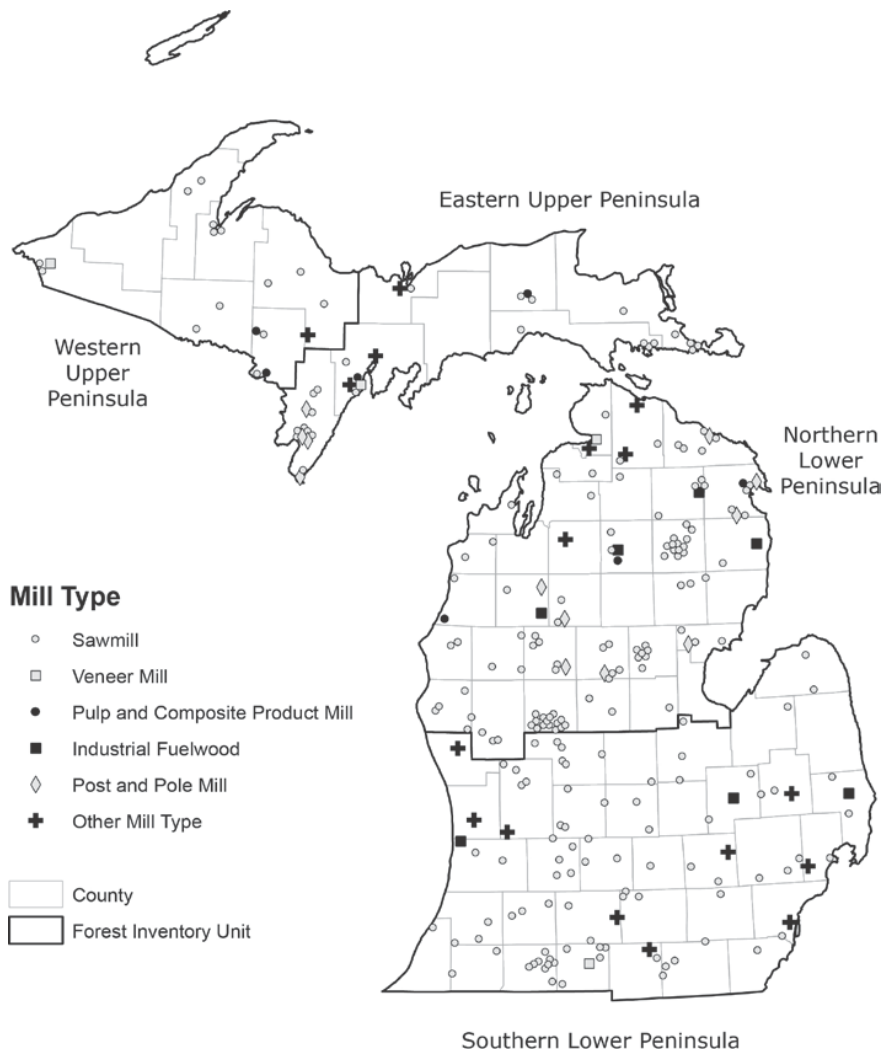


Figure 2.—Primary wood-using mills, Michigan, 2010.

**Table 1.—Summary of the Michigan Timber Industry, 2006, 2008, and 2010**

|                                                                                   | Estimates |         |         | Percent Change |
|-----------------------------------------------------------------------------------|-----------|---------|---------|----------------|
|                                                                                   | 2006      | 2008    | 2010    | 2008-2010      |
| Number of primary wood-using mills                                                | 286       | 283     | 263     | -7%            |
| Industrial roundwood production—MMCF <sup>a</sup>                                 | 344.2     | 345.9   | 340     | -2%            |
| Saw log production—MMBF <sup>b</sup>                                              | 779.9     | 653.7   | 745.9   | 14%            |
| Industrial roundwood receipts—MMCF <sup>a</sup>                                   | 354.9     | 349.7   | 325.7   | -7%            |
| Saw log receipts—MMBF <sup>b</sup>                                                | 804.3     | 647.5   | 744.1   | 15%            |
| Growing-stock removals from timberland for industrial roundwood—MMCF <sup>a</sup> | 304.2     | 314.8   | 315.9   | 0.3%           |
| Sawtimber removals from timberland for industrial roundwood—MMBF <sup>b</sup>     | 1,070.9   | 1,046.9 | 1,107.2 | 6%             |
| Wood material harvested for industrial roundwood—MMCF <sup>a</sup>                | 426.5     | 445.2   | 439.7   | -1%            |
| Harvest residue generated by industrial roundwood harvesting—MMCF <sup>a</sup>    | 96.6      | 98.8    | 99.7    | 0.9%           |
| Residues produced at primary wood-using mills, in thousand green tons             | 2,950.6   | 2666.5  | 2,760.2 | 3%             |

<sup>a</sup>Million cubic feet

<sup>b</sup>Million board feet, International 1/4-inch rule

## Primary Timber Industry

### Industrial Roundwood Production

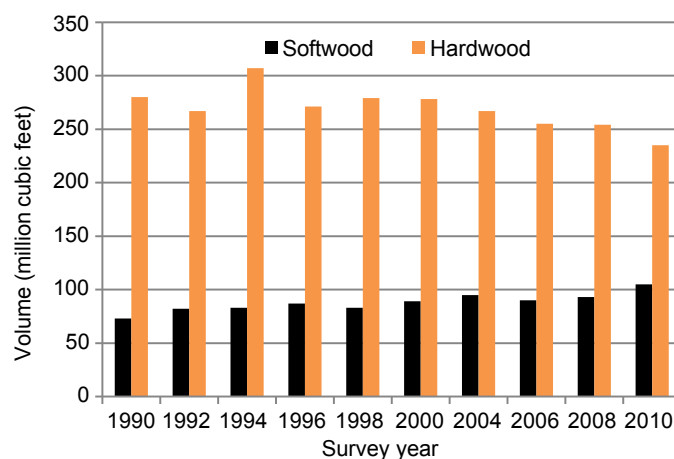
Industrial roundwood production decreased by 2 percent, or 6 million cubic feet in 2010 (Fig. 3). Of the 340 million cubic feet of industrial roundwood produced from Michigan's forests, roughly 88 percent, or 300 million cubic feet, was processed at Michigan mills. About 40 million cubic feet were exported to primary mills in other states. Wisconsin mills received the largest share, about 9 percent of industrial roundwood exports. Canadian mills received less than 1 percent of the State's exports. Michigan mills imported about 26 million cubic feet, and Wisconsin supplied the majority of imported wood. Sixty-nine percent of the industrial roundwood processed by Michigan's primary wood-using mills was hardwood species. Aspen, hard and soft maple, and red pine accounted for 60 percent of the total volume processed in the State. Other species of importance to the forest products industry were red oak, jack pine, spruce, ash, and basswood (Fig. 4).

### Saw Logs

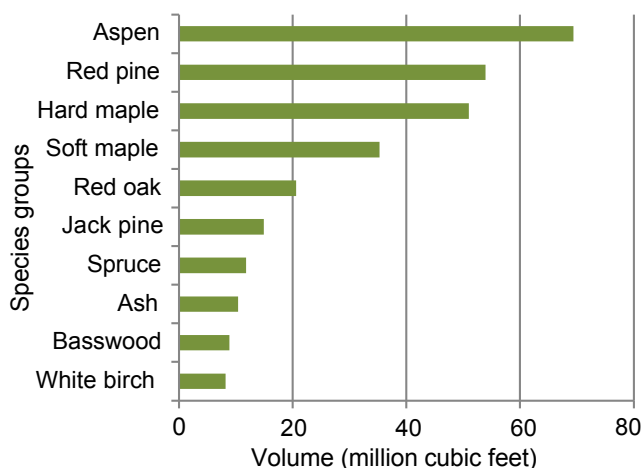
Saw logs represented 34 percent of the total industrial roundwood production in 2010 (Table 1). Production of saw logs increased by 14 percent or 92 million board feet between 2008 and 2010. In 2010, red pine and hard maple accounted for 45 percent of the total harvest of saw logs from Michigan's forests. Other important species/species groups harvested were red oak, aspen, soft maple, jack pine, ash, and spruce. Michigan saw log receipts totaled 744 million board feet in 2010, an increase of 15 percent from 2008. Softwood saw log receipts were at 335.5 million board feet, while those of hardwoods were 408.6 million board feet.

### Other Products

Production of pulpwood from Michigan's forests amounted to 178 million cubic feet, a decrease of 5 percent over the 187 million cubic feet harvested in 2008. Receipts at Michigan pulp and composite product mills decreased 14 percent from 190 million cubic feet in 2008 to 164 million cubic feet in 2010.



**Figure 3.—Industrial roundwood production by softwoods and hardwoods, and survey year, Michigan.**



**Figure 4.—Industrial roundwood production for the top ten species group, Michigan 2010.**

(See Piva et al. (2014) for the results of a separate National pulpwood study conducted for 2010.) There were 5.4 million cubic feet of veneer logs harvested from Michigan forests in 2010, a decrease of 5 percent from the 5.7 million cubic feet harvested in 2008. The remaining industrial roundwood harvested in 2010 included industrial fuelwood, posts, poles, cabin logs, and other miscellaneous products, accounting for 8 percent of the total volume produced 2010.

Timber Removals

During the harvest of industrial roundwood from Michigan’s forests in 2010, 340 million cubic feet of wood material from growing stock (e.g., sawtimber and pole timber) and non-growing stock (e.g., limb wood, saplings, cull trees, dead trees) was used for primary wood products and another 99.7 million cubic feet of wood material from growing stock (e.g., logging residue) and non-growing stock (e.g., logging slash) was left on the ground as harvest residues (Fig. 5). Growing-stock sources, at 315.9 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, while the remaining 7 percent, was left as harvest residue. Sawtimber-size trees accounted for 66 percent of the growing-stock volume used for products, and the remainder came from pole-size trees.

In 2010, 123.8 million cubic feet of non-growing-stock wood material was removed in the production of industrial roundwood, but only 38 percent of this material was used for products and the remainder was left on the ground as logging slash. Forty-six percent of the non-growing-stock material used for industrial roundwood came from limbs of growing-stock trees, 44 percent from dead trees and the other 10 percent came from cull and sapling trees.

Harvest Intensity

Statewide in 2010, average annual net growth (gross growth minus mortality) and removals of growing stock per acre on forest land were 38 cubic feet and 16.5 cubic feet, respectively (data accessed through EVALIDator; see Miles 2015). Only six counties had more than 30 cubic feet of total growing stock removed per acre of forest land (Fig. 6). (For reference, a cord of roundwood contains about 79 cubic feet of wood.)

In 2010, there were over 20 million acres of forest land in Michigan (Pugh 2011). The net volume in live trees on forest land was over 32 billion cubic feet. The 364 million cubic feet of total wood material removed due to harvesting was less than 2 percent of the total live volume of trees on forest land in Michigan.

The Western Upper Peninsula Forest Inventory Unit had the greatest harvest intensity in 2010, with an average of 19.9 cubic feet of total wood removals per acre of forest land. The Eastern Upper Peninsula Unit had 19.4 cubic feet of total wood removals per acre of forest land followed by the Northern Lower Peninsula Unit with 18.4 cubic feet, and the Southern Lower Peninsula Unit with 13.6 cubic feet.

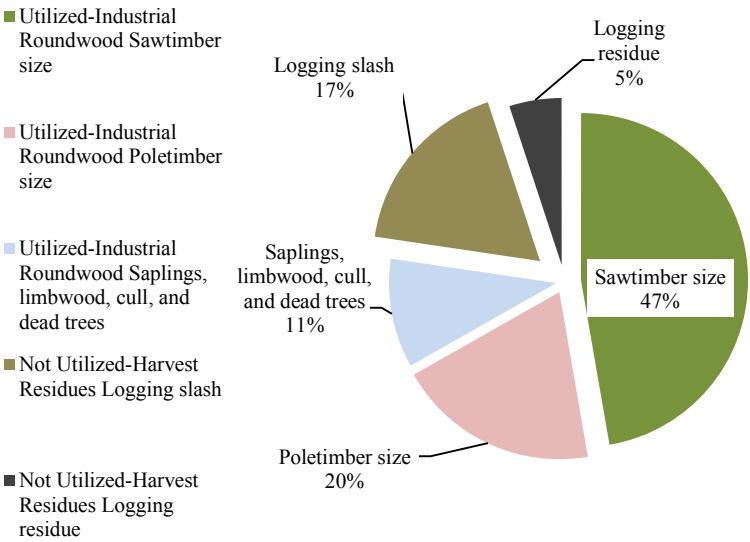


Figure 5.—Distribution of timber removals for industrial roundwood by source of material, Michigan, 2010.

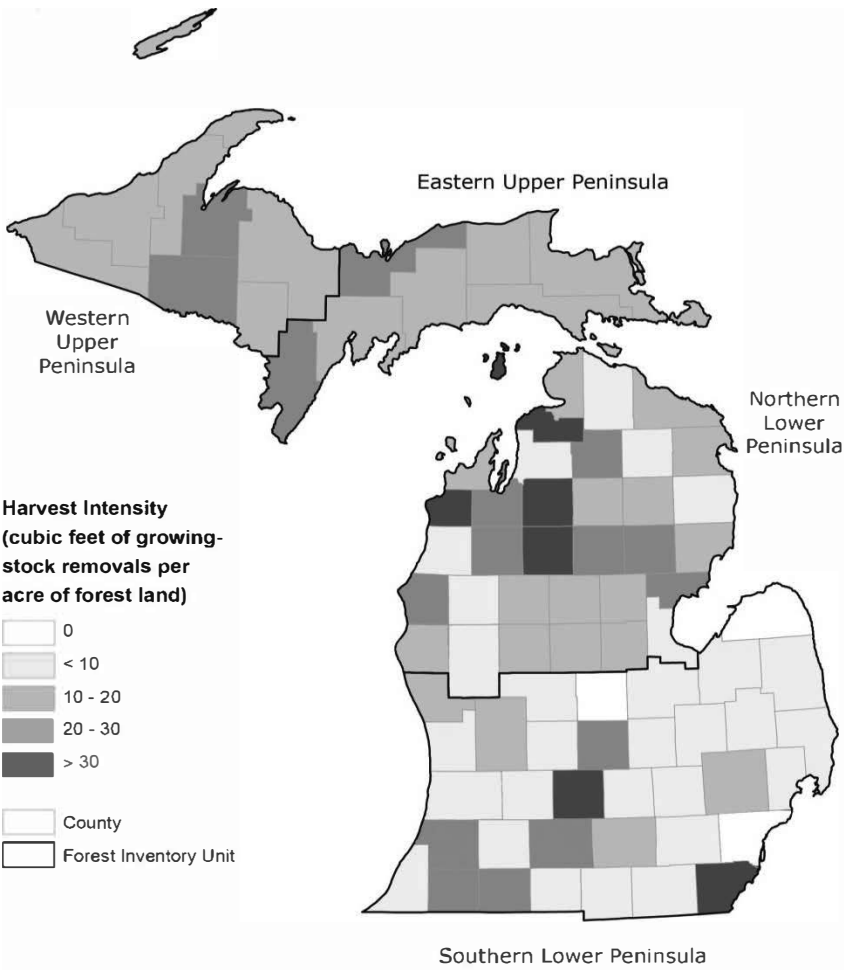


Figure 6.—Harvest intensity for industrial roundwood production, Michigan, 2010.

Primary Mill Residues

In converting industrial roundwood into products, such as lumber, Michigan’s primary wood-using industries generated 2.8 million green tons of wood (coarse and fine residues) and bark residue. Thirty-five percent of the mill residues were from bark. Fine wood residue (e.g., sawdust) made up another 28 percent. Coarse wood residue (e.g., slabs and edgings residue) accounted for the remaining 37 percent (Fig. 7).

Industrial fuel, fiber products, mulch, miscellaneous use (e.g., livestock bedding, small dimension, and specialty items) accounted for 44, 26, 14, and 9 percent, respectively, of the end-use of mill residues generated by the primary wood processors in Michigan (Fig. 8). Sixty-three percent of the coarse residue was used for fiber products. Industrial fuel uses consumed 55 percent of the total fine residue generated, and 65 percent of the bark residue went into industrial fuel.

Literature Cited

Miles, P.D. 2015. **Forest Inventory EVALIDator web-application version 1.6.0.02**. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. <http://apps.fs.fed.us/Evalidator/evalidator.jsp>. (March 29, 2016)

Piva, R.J.; Bentley, J.W.; Hayes, S.W. 2014. **National pulpwood production, 2010**. Resour. Bull. NRS-89. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 74 p.

Pugh, S.A. 2011. **Michigan’s forest resources, 2010**. Research Note NRS-106. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.

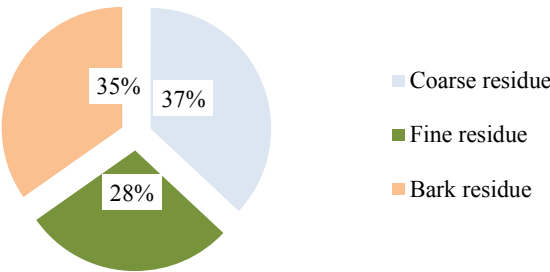


Figure 7.—Distribution of residues generated by primary wood-using mills by type of residue, Michigan, 2010.

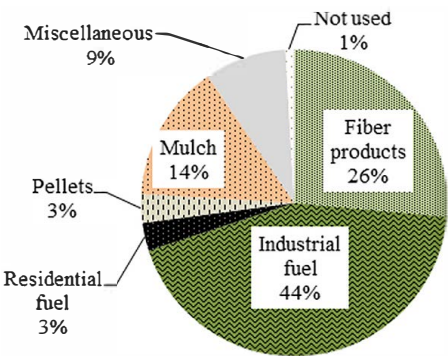


Figure 8.—Distribution of residues generated by primary wood-using mills by method of disposal, Michigan, 2010.

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## Definition of Terms

**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.

**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 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.

**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.

**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).

**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.

**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.

**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.

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