

Michigan Timber Industry, 2014

Resource Update FS-169



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 surveyed all known primary wood-using mills and FIA processed and analyzed the survey responses. Mill responses from earlier TPO studies, or other ancillary data were used for any mills that did not respond to the 2014 TPO study. This update presents results from the 2014 survey with comparisons to the 2010 survey. Certain terms used in this report—retained, export, import, production, and receipts—have specialized meanings and relationships unique to the FIA program that surveys timber product output (Fig. 1). These and other definitions are on page 6 of this report. Supplemental data tables with further information can be found at <https://doi.org/10.2737/FS-RU-169>

Primary Wood-using Industry

In 2014, Michigan's primary wood-using industry included 213 sawmills, 5 veneer mills, 3 pulp mills, 4 composite panel mills, 10 industrial fuelwood mills, 8 cabin log mills, 12 post, pole, and piling mills, and 4 mills that produced other products (Fig. 2, Table 1). Total industrial roundwood receipts at Michigan mills totaled 376.7 million cubic feet, an increase of 16 percent from 2010. Saw mills, pulp mills, and composite panel mills were the largest consumers of industrial roundwood in 2014, consuming 39 percent, 33 percent, and 16 percent of the total industrial roundwood receipts, respectively.

Wisconsin and Canada were the largest suppliers of imported industrial roundwood for Michigan's primary wood-using industry, accounting for 71 percent and 28 percent of the total imports, respectively. Industrial roundwood was also imported from Indiana, Maine, Massachusetts, New York, Ohio, and Vermont.

Aspen accounted for more than 20 percent of the total industrial roundwood processed by Michigan's mills. Nearly 50 percent of the aspen industrial roundwood receipts went

to the composite panel mills in the State. Other important species processed by Michigan mills were red pine (14 percent), hard maple (10 percent), red oaks (7 percent), and soft maple (6 percent) (Note: Some mills reported species as mixed hardwoods and/or mixed softwoods instead of the more detailed species. The species percent listed represent the amounts where the species were reported.).

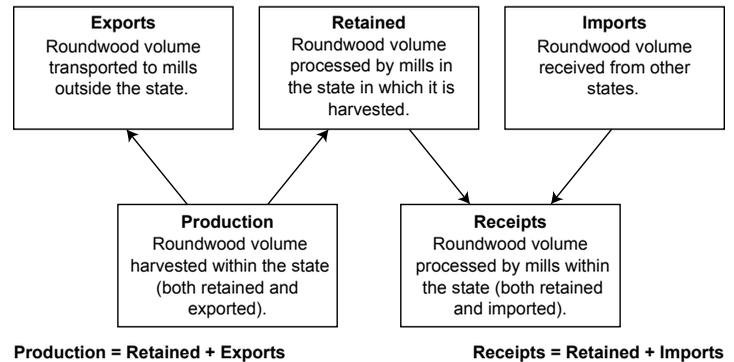


Figure 1.—Diagram of the movement of industrial roundwood.

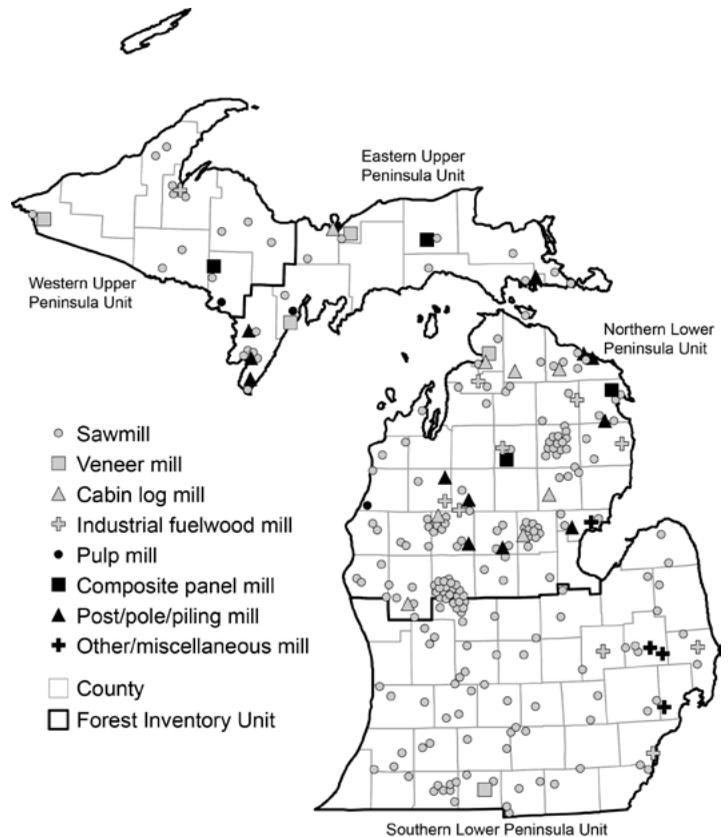


Figure 2.—Primary wood-using mills, Michigan, 2014.

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Table 1.—Summary of the Michigan timber industry, 2008, 2010, and 2014

	2008	2010	2014	Change 2010-2014
Number of primary wood-using mills	283	260	259	-0.4%
Industrial roundwood receipts—MMCF ^a	349.8	324.5	376.7	16.1%
Saw log receipts—MMBF ^b	647.6	736.6	853.2	15.8%
Industrial roundwood production—MMCF ^a	346.4	338.8	386.3	14.0%
Saw log production—MMBF ^b	654.1	738.8	880.1	19.1%
Growing-stock removals from timberland for industrial roundwood—MMCF ^a	314.8	314.6	354.6	12.7%
Sawtimber removals from timberland for industrial roundwood—MMBF ^b	1,046.9	1,102.6	1,312.7	19.1%
Harvest residue generated by industrial roundwood harvesting—MMCF ^a	98.9	99.4	116.4	17.1%
Total harvest removals for industrial roundwood—MMCF ^a	445.2	438.2	502.7	14.7%
Residues produced at primary wood-using mills—thousand green tons	5,666.5	2,742.5	2,968.0	8.2%

^a Million cubic feet.

^b Million board feet, International ¼-inch Rule.

Industrial Roundwood Production

Industrial roundwood production in Michigan increased from 338.8 million cubic feet in 2010 to 386.3 million cubic feet in 2014, an increase of 14 percent. Decreases in industrial roundwood production for veneer, pulp, and cabin logs were more than offset by increases for saw logs, composite panel products, and other products (Fig. 3). Roundwood harvested for sawmills and pulp mills accounted for 39 percent and 34 percent of total industrial roundwood production, respectively. Aspens/balsam poplar was the most harvested species group in 2014, accounting for 20 percent of the total harvest, followed by red pine (13 percent) and hard maple (11 percent).

Saw Logs

Saw logs were the most harvested product in Michigan in 2014, accounting for 39 percent of total industrial roundwood production. Saw log production increased from 738.8 million board feet (127.0 million ft³) in 2010 to 880.1 million board feet (151.2 million ft³) in 2014, an increase of 19 percent. Even though industrial roundwood production from red pine decreased by 3 percent between 2010 and 2014, it still remains the most harvested species for saw logs, accounting for 20 percent of the total (Fig. 4). Other important species harvested for saw logs were hard maple, red oaks, aspens/balsam poplar, soft maple, and jack pine. Ninety-one percent of Michigan's industrial roundwood production for saw logs was processed by Michigan mills.

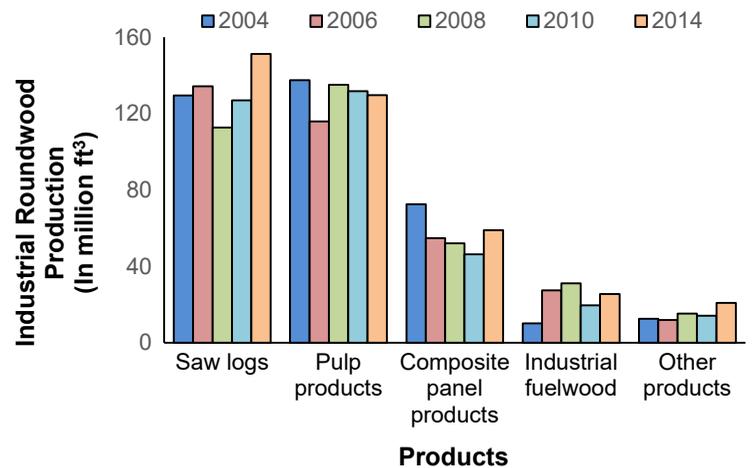


Figure 3.—Industrial roundwood production by product and survey year, Michigan. Other products include veneer logs, cabin logs, posts, and other miscellaneous products.

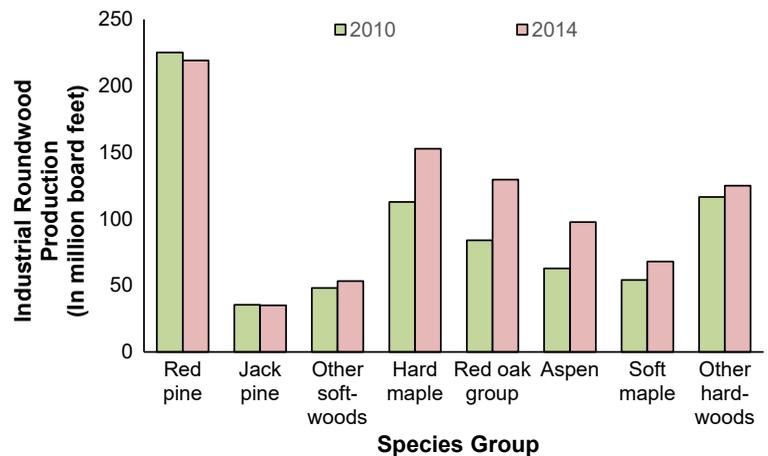


Figure 4.—Saw log production by species group and survey year, Michigan.

Pulpwood

Pulpwood is the second most harvested product in Michigan, accounting for a third of the industrial roundwood production. Pulpwood production decreased from 1.7 million standard cords (131.7 million ft³) in 2010 to 1.6 million standard cords (129.7 million ft³) in 2014, a decrease of nearly 2 percent (Fig. 5). Seventy-eight percent of the industrial roundwood produced for pulpwood were hardwoods. Eighty-eight percent of Michigan's industrial roundwood production for pulpwood was processed by Michigan mills.

Composite Panel Products

Production of industrial roundwood for composite panel products increased by 27 percent, from 586,600 cords in 2010 to 746,400 cords in 2014. Aspen accounted for 64 percent of the industrial roundwood harvested for composite panel products in 2014. Other important species harvested were hard maple at 10 percent, jack pine at 6 percent, and basswood at 5 percent. Nearly all of Michigan's industrial roundwood production for composite panel products was processed by Michigan mills.

Other Products

Nearly 7 percent, or 366,000 standard cords (25.6 million ft³) of the industrial roundwood harvested in 2014 was used for industrial fuelwood (Fig. 6). This was an increase of greater than 30 percent from 2010. Seventy percent of the industrial fuelwood produced came from hardwoods.

Posts and poles accounted for 2 percent (7.1 million ft³) of the industrial roundwood production in 2014, an increase of 16 percent from 2010. All of the posts and poles reported came from softwood species.

Industrial roundwood production of veneer logs was 31.0 million board feet (5.0 million ft³) in 2014, a decrease of 8 percent from 2010. Hardwoods accounted for 91 percent of the veneer logs produced.

Other products harvested from Michigan's forest land in 2014 were cabin logs, excelsior/shavings, and other miscellaneous products.

Timber Removals

During the harvest of industrial roundwood from Michigan's forests in 2014, 327.5 million cubic feet of wood material from growing stock (e.g., sawtimber and poletimber) and 58.8 million cubic feet from non-growing stock (e.g., limbwood, saplings, and cull, dead, or nonforest trees) were used for primary wood products. The unused portion of timber removals amounted to 27.1 million cubic feet of logging residue from growing-stock sources and 89.3 million cubic feet of logging slash from non-growing-stock sources (Fig. 7).

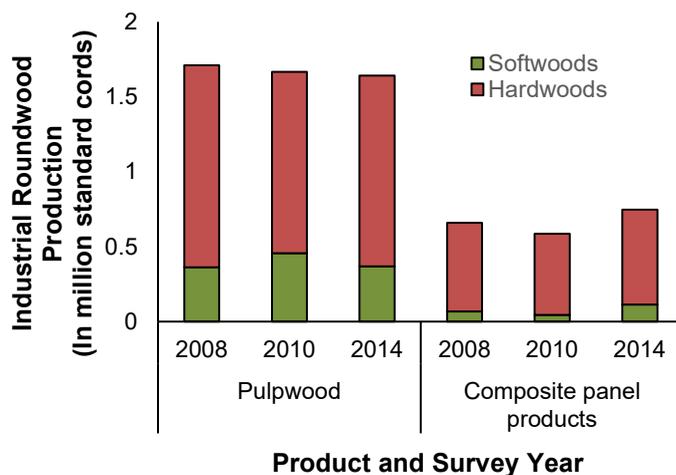


Figure 5.—Industrial roundwood production for pulpwood and composite panel products by hardwoods and softwoods, and survey year, Michigan.

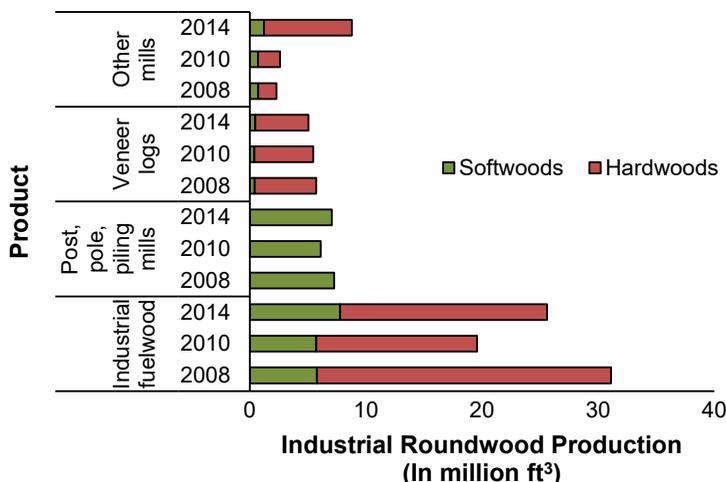


Figure 6.—Industrial roundwood production of other products by hardwoods and softwoods, and survey year, Michigan.

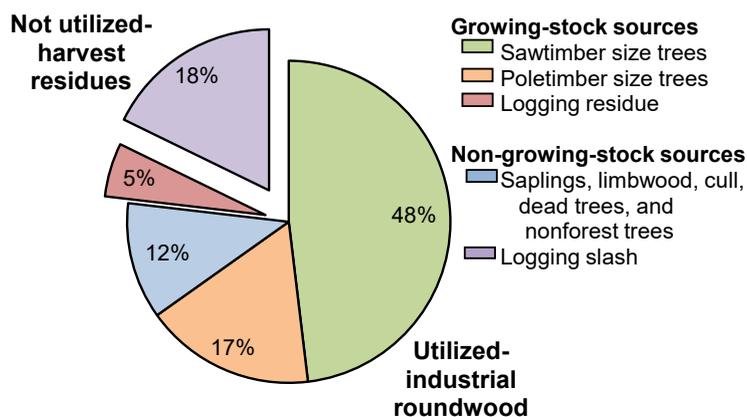


Figure 7.—Distribution of timber removals for industrial roundwood by source of material and utilization, Michigan, 2014.

Harvest Intensity

Estimating harvest intensity involves combining the data from this TPO study with forest inventory data from FIA, which is an annual inventory of forests to quantify such metrics as area, number of live trees, or net live tree volume. In 2014, FIA reported that there were 20.3 million acres of forest land in Michigan (Pugh 2015). This TPO study estimates that there were 502.7 million cubic feet of wood material harvested, including material utilized for products and left as harvest residue. This results in a statewide harvest intensity of 24.8 cubic feet of wood material removed per acre of forest land. That is an increase in harvest intensity from 2010, which saw 22.0 cubic feet of removals per acre of forest land. Individual county harvest intensity ranged from 3.1 cubic feet of wood removed per acre to as high as 51.9 cubic feet per acre (Fig. 8).

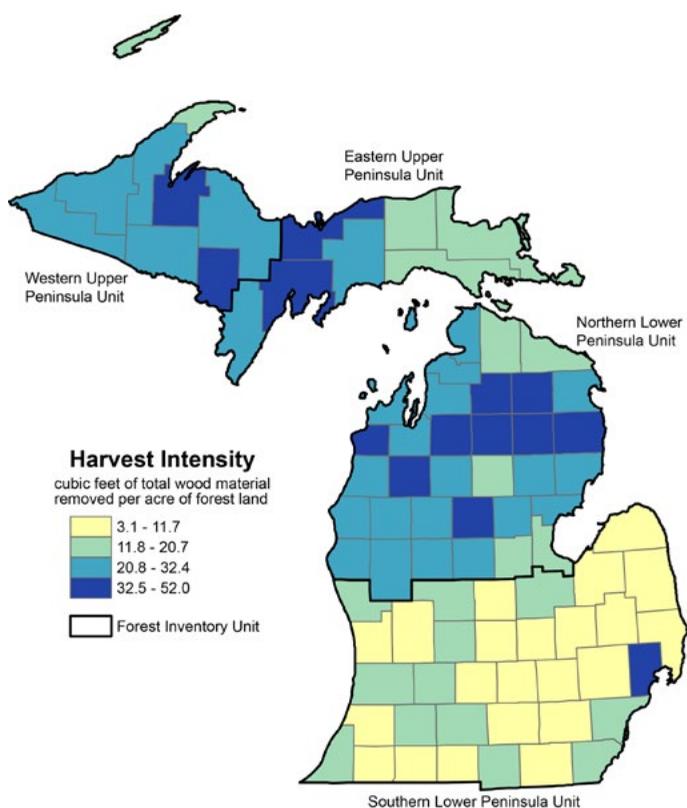


Figure 8.—Harvest intensity of industrial roundwood by county, Michigan, 2014.

Primary Mill Residues

In converting industrial roundwood into products, such as lumber, Michigan’s primary wood-using mills generated 3.0 million green tons of coarse wood residue (e.g., slabs or edgings), fine wood residue (e.g., sawdust), and bark residue (Fig. 9). Forty-one percent of mill residues were used for industrial fuel. Another 22 percent went toward fiber products, 15 percent to mulch, and 10 percent was used for residential fuel or wood pellets (Fig. 10). Only 1 percent of the mill residues generated by Michigan mills in 2014 were not used for other secondary purposes.

Literature Cited

Pugh, Scott A. 2015. **Forests of Michigan, 2014**. Resource Update FS-35. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.

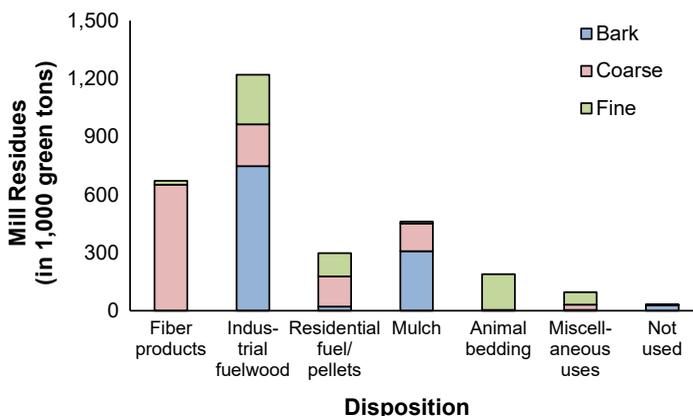


Figure 9.—Distribution of residues generated by primary wood-using mills by type of residue, Michigan, 2014.

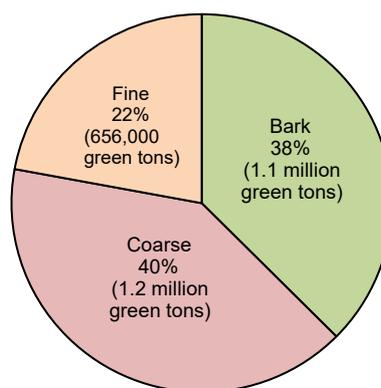


Figure 10.—Distribution of residues generated by primary wood-using mills by residue type and disposition, Michigan, 2014.

How to Cite This Publication

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Supplemental Tables

Data tables to accompany this report are available at <https://doi.org/10.2737/FS-RU-169>

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Common and scientific names of tree species in Michigan by TPO species group

Softwoods

Cedar/juniper	Eastern redcedar	<i>Juniperus virginiana</i>
	Northern white-cedar	<i>Thuja occidentalis</i>
Balsam fir	Balsam fir	<i>Abies balsamea</i>
	White fir	<i>Abies concolor</i>
Hemlock	Eastern hemlock	<i>Tsuga canadensis</i>
	Jack pine	<i>Pinus banksiana</i>
Red pine	Red pine	<i>Pinus resinosa</i>
	White pine	<i>Pinus strobus</i>
Other pine	Austrian pine	<i>Pinus nigra</i>
	Scotch pine	<i>Pinus sylvestris</i>
	Loblolly pine	<i>Pinus taeda</i>
	Other pine species	<i>Pinus spp.</i>
Spruce	Norway spruce	<i>Picea abies</i>
	White spruce	<i>Picea glauca</i>
	Black spruce	<i>Picea mariana</i>
	Blue spruce	<i>Picea pungens</i>
Tamarack	Tamarack	<i>Larix laricina</i>

Hardwoods

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

Hardwoods cont.

Hickory	Bitternut hickory	<i>Carya cordiformis</i>
	Pignut hickory	<i>Carya glabra</i>
	Shagbark hickory	<i>Carya ovata</i>
	Mockernut hickory	<i>Carya tomentosa</i>
Hard maple	Black maple	<i>Acer nigrum</i>
	Sugar maple	<i>Acer saccharum</i>
Soft maple	Boxelder	<i>Acer negundo</i>
	Red maple	<i>Acer rubrum</i>
	Silver maple	<i>Acer saccharinum</i>
Red oak	Scarlet oak	<i>Quercus coccinea</i>
	Northern pin oak	<i>Quercus ellipsoidalis</i>
	Shingle oak	<i>Quercus imbricaria</i>
	Pin oak	<i>Quercus palustris</i>
	Northern red oak	<i>Quercus rubra</i>
	Shumard oak	<i>Quercus shumardii</i>
	Black oak	<i>Quercus velutina</i>
White oak	White oak	<i>Quercus alba</i>
	Swamp white oak	<i>Quercus bicolor</i>
	Bur oak	<i>Quercus macrocarpa</i>
	Chinkapin oak	<i>Quercus muehlenbergii</i>
Sweetgum	Sweetgum	<i>Liquidambar styraciflua</i>
	Sycamore	<i>Platanus occidentalis</i>
Tupelo/black gum	American sycamore	<i>Platanus occidentalis</i>
	Blackgum	<i>Nyssa sylvatica</i>
Yellow-poplar	Yellow-poplar	<i>Liriodendron tulipifera</i>
	Other hardwoods	Ohio buckeye
Northern catalpa		<i>Catalpa speciosa</i>
Hackberry		<i>Celtis occidentalis</i>
Honeylocust		<i>Gleditsia triacanthos</i>
Butternut		<i>Juglans cinerea</i>
White mulberry		<i>Morus alba</i>
Red mulberry		<i>Morus rubra</i>
Eastern hophornbeam		<i>Ostrya virginiana</i>
Pin cherry		<i>Prunus pensylvanica</i>
Chokecherry		<i>Prunus virginiana</i>
Black locust		<i>Robinia pseudoacacia</i>
White willow		<i>Salix alba</i>
Peachleaf willow		<i>Salix amygdaloides</i>
Bebb willow		<i>Salix bebbiana</i>
Black willow	<i>Salix nigra</i>	
Willow spp.	<i>Salix spp.</i>	
Sassafras	<i>Sassafras albidum</i>	

Definition of Terms

Composite panel products. A broad generic group of products that include flakeboard, waferboard, medium density fiberboard, hardboard, particleboard, oriented strandboard, and parallel strand lumber that are made from roundwood (includes roundwood that is chipped) and primary wood processing residues that are reduced to individual wood fibers, fiber bundles, chips, or particles by chemical or mechanical means. Also referred to as particleboard or engineered wood panel products.

Growing-stock removals. The growing-stock volume removed from timberland by harvesting industrial roundwood products. 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. 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. 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.

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.

Pulpwood or Pulp products. Roundwood (includes roundwood that is chipped) and primary wood processing residues that are reduced to individual wood fibers, fiber bundles, chips, or particles by chemical or mechanical means used to make a broad generic group of products that include wood pulp, corrugated medium, roofing material, insulation board, and dissolving pulp.

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 removals. As used in supplemental Table 9, sawtimber removals refers to the net volume in the merchantable central stem (includes the saw log and upper stem portions) of sawtimber trees harvested for industrial roundwood products. When referring to the sawtimber volume removed from timberland as in supplemental Table 11, sawtimber removals refers to the net volume in the saw log portion of sawtimber trees harvested for roundwood products or left on the ground as harvest residue.

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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