USDA
United States Department of Agriculture

Indiana Timber Industry, 2013

Resource Update FS-116

This resource update provides an overview of timber product output (TPO) and use in Indiana 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 Indiana Department of Natural Resources (IN DNR) and the Forest Inventory and Analysis (FIA) unit at the Northern Research Station (NRS) of the USDA Forest Service. IN DNR surveyed all known primary wood-using mills and FIA processed and analyzed the survey responses. This update presents results from the 2013 survey with comparisons to the 2008 and 2005 surveys. The data were accessed from the FIA database in December 2016. 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).

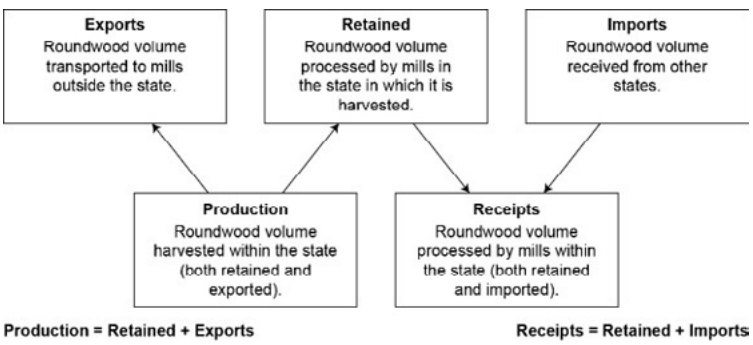

Figure 1.—Diagram of the movement of industrial roundwood.

Overview

In 2013, Indiana's primary wood-using industry included 130 sawmills, 5 veneer mills, and 1 mill producing other products (Fig. 2, Table 1).

Total production of industrial roundwood from Indiana forests in 2013 was 69.1 million cubic feet, of which 63.3 million cubic feet was processed by mills within the State and 5.8 million cubic feet was exported to primary wood-using mills in other states or other countries, the majority of which went to Kentucky.

Saw log harvests accounted for 92 percent of the total production within the state. Industrial roundwood harvests resulted in 55.6 million cubic feet of logging residues. Primary mills generated 1.1 million green tons of mill residues, of which 32 percent were used for mulch and a further 32 percent used for fiber products. About 1 percent of mill residues were not used for other products (landfilled). Total receipts at Indiana primary mills totaled about 74.7 million cubic feet—63.3 million cubic feet from Indiana sources and 11.3 million cubic feet from Ohio, Michigan, Illinois, Kentucky, other states, and Canada.

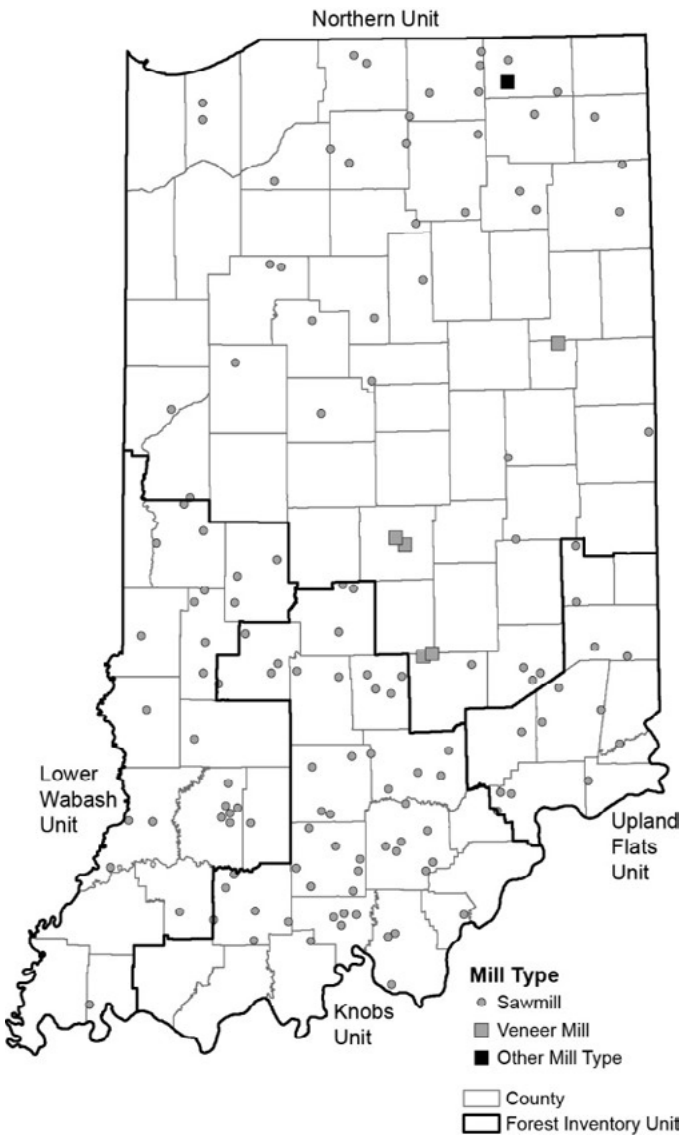

Figure 2.—Primary wood-using mills, Indiana, 2013.

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Table 1.—Summary of the Indiana timber industry, 2005, 2008, and 2013

	2005	2008	2013	Percent Change 2008-2013
Number of primary wood-using mills	185	141	136	-3.5%
Industrial roundwood production—MMCF[a]	74.2	63.8	69.1	8.3%
Saw log production—MMBF[b]	294.8	247.1	276.6	11.9%
Industrial roundwood receipts—MMCF[a]	84.1	68.4	74.7	9.2%
Saw log receipts—MMBF[b]	328.9	272.9	301.6	10.5%
Growing-stock removals from timberland for industrial roundwood—MMCF[a]	88.6	75.7	82.1	8.4%
Sawtimber removals from timberland for industrial roundwood—MMBF[b]	338.6	292.3	316.7	8.3%
Wood material harvested for industrial roundwood—MMCF[a]	133.4	114.5	124.7	8.9%
Harvest residue generated by industrial roundwood harvesting—MMCF[a]	59.2	50.6	55.6	9.9%
Residues produced at primary wood-using mills, in thousand green tons	1,271.1	1,033.5	1,129.7	9.3%

[a]Million cubic feet
[b]Million board feet, Doyle rule

Primary Timber Industry

Industrial Roundwood Production

Indiana's timber industry saw an increase in industrial roundwood production by 8.3 percent in 2013, roughly 5.3 million cubic feet more than what was produced in 2008. A majority of the wood produced from Indiana forests was processed by mills in the State, with 8 percent being exported to other states and countries. Nearly 99 percent of industrial roundwood production was hardwood species (Fig. 3). Saw logs accounted for 92 percent of total production (Fig. 4).

Primary wood-processing mills in Indiana operating in 2013 included 130 saw mills, 5 veneer mills, and 1 mill producing other products. Receipts at these primary wood-using mills have increased, from 68.4 million cubic feet in 2008 to 74.7 million cubic feet in 2013. A majority of receipts came from Indiana industrial roundwood production, however 15 percent of receipts were imported from other states and countries.

The increases in industrial roundwood production and mill receipts from 2008 may represent a rebound from the downturn in the U.S. forest products industry during the Great Recession of 2007–2009 (Woodall et al. 2012). However, production and receipts have not yet returned to 2005 levels, with production in 2013 being 93 percent of what it was in 2005 and receipts being 89 percent of 2005 receipts (Table 1).

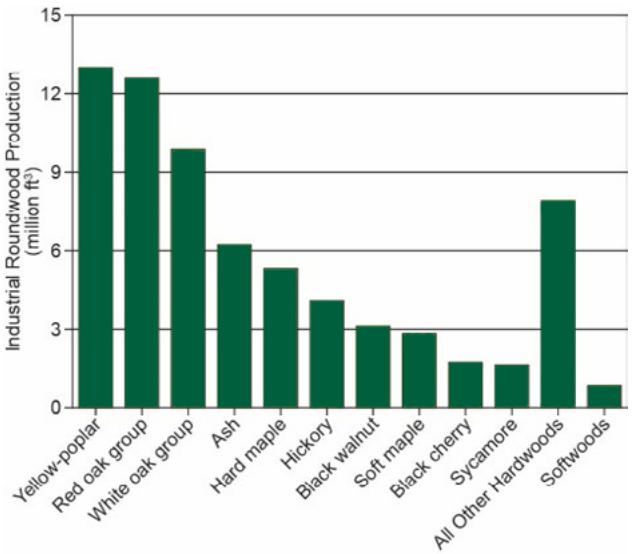

Figure 3.—Industrial roundwood production by species group, Indiana, 2013.

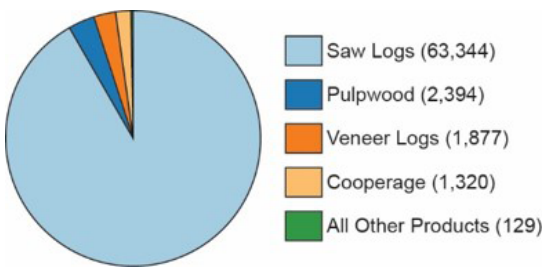

Figure 4.—Industrial roundwood production (in thousand cubic feet) by product, Indiana, 2013. All other products includes cabin logs, industrial fuelwood, posts, and other miscellaneous products.

Saw Logs

Saw logs are by far Indiana's most important industrial roundwood product, in both production and receipts. Production of saw logs in Indiana in 2013 has increased by 12 percent over saw log production in 2008, from 247.1 million board feet (Doyle rule) to 276.6 million board feet (Doyle). Receipts of saw logs at Indiana sawmills saw a similar increase of about 11 percent over 2008 receipts, from 272.9 million board feet to 301.6 million board feet (Doyle) (Fig. 5).

Timber Removals

During the harvest of industrial roundwood from Indiana's forests in 2013, 64.3 million cubic feet of wood material from growing stock (e.g., sawtimber and poletimber) and 4.8 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 17.9 million cubic feet of logging residue from growing-stock sources and 37.7 million cubic feet of logging slash from non-growing-stock sources (Fig. 6). Growing stock removals totaled 82.2 million cubic feet of material, with 78 percent being sawtimber-sized trees used for products, less than 1 percent poletimber-sized trees used, and 22 percent left on the ground as logging slash. Non-growing-stock removals totaled 42.5 million cubic feet of material, with 11 percent being used for products and 89 percent left on the ground as logging slash.

Harvest Intensity

Estimating harvest intensity involves combining the data from this timber products output study with FIA national forest inventory data, which is an annual inventory of forests to quantify such metrics as area, number of live trees, net volume, etc. In 2013, there were nearly 4.9 million acres of forest land in Indiana (Gormanson 2014). With 124.7 million cubic feet of wood material harvested, Indiana's statewide harvest intensity was 25.6 cubic feet of wood material removed per acre of forest land. That is an increase in harvest intensity over 2008, which had 24.1 cubic feet of removals per acre of forest land, but less than the intensity of 2005 which had 28.2 cubic feet of removals per acre of forest land.

Individual county harvest intensity ranged from less than 1 cubic foot of wood removed per acre to as high as 85 cubic feet per acre (Fig. 7). Only 11 counties had more than 40 cubic feet of wood removals per acre of forest land.

Primary Mill Residues

In converting industrial roundwood into products, such as lumber, Indiana's primary wood-using mills generated 1.1 million green tons of coarse wood residue (e.g., slabs or edgings), fine wood residue (e.g., sawdust), and bark residue (Fig. 8).

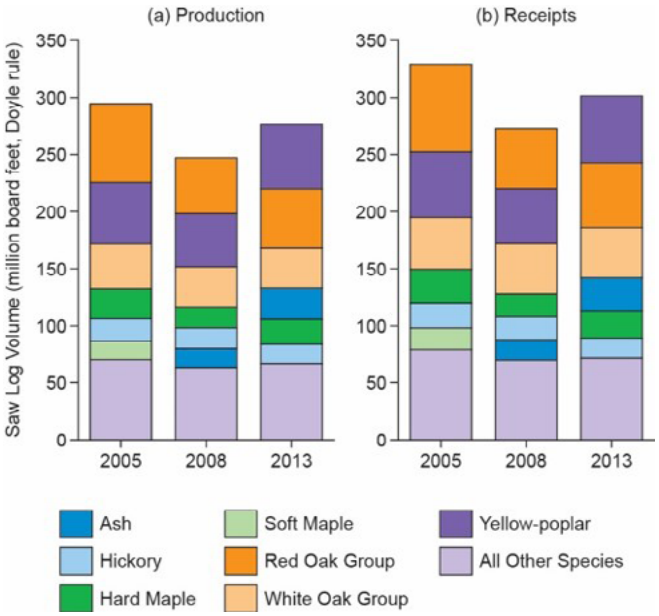

Figure 5.—Saw log production (a) and receipts (b) by survey year and species group, Indiana, 2013. The top six species groups by volume are represented in each survey year.

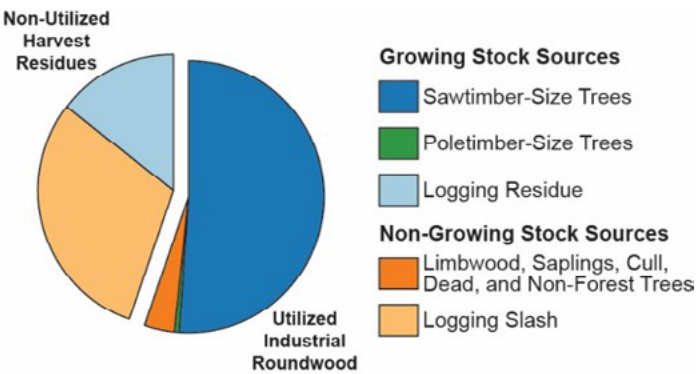

Figure 6.—Distribution of timber removals for industrial roundwood by source of material and utilization, Indiana, 2013.

Thirty-two percent of mill residues were used to make mulch. Another 32 percent went toward fiber products, 16 percent to industrial fuel, and 11 percent to animal bedding (Fig. 9). Fifty-seven percent of coarse wood residues went toward fiber products; industrial fuel and animal bedding each accounted for 40 percent of fine wood residue disposition, and 89 percent of bark residue was disposed of as mulch.

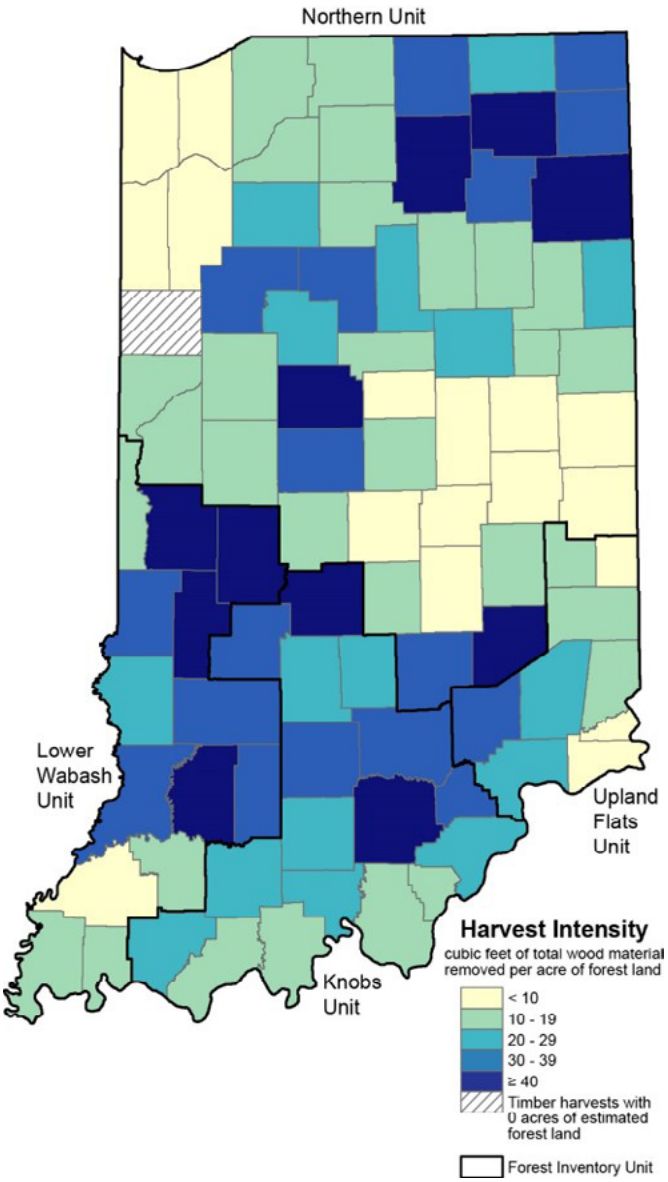

Figure 7.—Harvest intensity of industrial roundwood by county, Indiana, 2013.

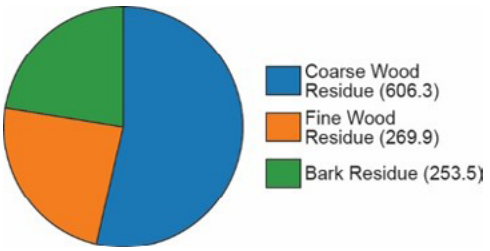

Figure 8.—Distribution of residues generated (in thousand green tons) by primary wood-using mills by type of residue, Indiana, 2013.

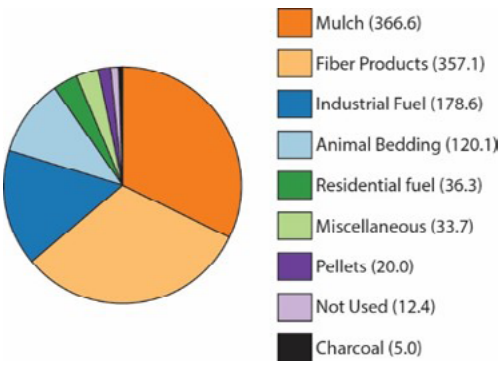

Figure 9.—Distribution of residues generated (in thousand green tons) by primary wood-using mills, by method of disposal, Indiana, 2013.

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Supplemental Tables

Data tables to accompany this report are available at https://doi.org/10.2737/FS-RU-116.

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The published report is available online at http://treesearch.fs.fed.us

Definition of Terms

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.

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.

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 removal. 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