The Woodland Steward

Promoting the Wise Use of Indiana's Forest Resources

2019 Indiana Consulting Foresters Stumpage Timber Price Report

This stumpage report is provided annually and should be used in association with the Indiana Forest Products Price Report and Trend Analysis. Stumpage prices were obtained via a survey to all known professional consulting foresters operating in Indiana. Reported prices are for sealed bid timber sales only (not negotiated sales) between a motivated timber seller and a licensed Indiana timber buyer. The data represents approximately 10 to 15 percent of the total volume of stumpage purchased during the periods from April 16, 2018 through April 15, 2019. This report has been published since 2001.

The results of the stumpage price survey are not meant as a guarantee that amounts offered for your timber will reflect the range in prices reported in this survey. The results simply provide an additional source of information to gauge market conditions

Categories of timber reported: The prices reported are broken into three sale types; high quality, average quality, and low quality. A high quality sale has more than 50 percent of the volume in # 2 or better red oak, white oak, sugar maple, black cherry, or black walnut. The low quality sale has more than 70 percent of the volume in # 3 (pallet) grade or is cottonwood, beech, elm, sycamore, hackberry, pin oak, aspen, black gum, black locust, honey locust, catalpa, or sweet gum. The average sale is a sale that is not a low quality or a high quality sale as defined above.

In the 2008 report some minor adjustments were made in the categories from the previous surveys. White ash was previously included as a component of the high quality sales and hickory was previously in the low quality group. No changes have been made in the categories so the 2019 data should compare well with the data collected since 2008.

Slight increase in sales activity: There were 15 consulting firms that reported in 2019 which is a decline from 16 that reported in 2018 and from the 18 firms that reported since 2015. The two firms that did not report this year represented 8 sales and the new firm represented 5 sales. The main 14 firms have reported every year since 2011. The data from 14 firms has historically represented over 95 percent of the total sales reported making the data very consistent.

In 2018-19 there were 230 sales (plus 6 negotiated sale) compared to 212 sales (plus 8 negotiated sales) last year which was a significant drop from the 310 sales (plus 16 negotiated sales) held in 2016-17. The number of sales has been declining for several years; 339 sales (plus 20 negotiated sales) in 2015-16, 368 sales (plus 12 negotiated) in 2014-15, and 330 sales (plus 14 negotiated) reported in 2013-14.

The decline in the number of sales may be due to several factors including but not limited to 1) recommendations by some foresters to delay their sales until invasive species are controlled as the disturbance created during the harvest tends to exacerbate the spread of the invasive species and increases in control costs, and 2) a decline in the number of sales

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Calendar of Events

February 3-5, 2020

Indiana Hardwood Lumbermen's Association Convention & Exposition Indianapolis Marriott Downtown www.ihla.org

February 4- March 24, 2020

Forest Management for the Private Woodland Owner Purdue 8-week short course Southeast Purdue Ag Center, 4425 E 350 N, Butlerville, Jennings County Contact 812-689-6511 or osbornda@purdue.edu.

February 13

Tree Planting Workshop 1-4 PM EST 1009 W Third St, Rochester, Fulton County Call 219-843-4827 to register. \$10 cost

March 5- April 23

Forest Management for the Private Woodland Owner Purdue 8-week short course Pinney Purdue Agriculture Center, 11402 South County Line Road, Wanatah, LaPorte County. Contact Lenny Farlee at 765-494-2153 or Ifarlee@purdue.edu.

March 26

2020 CISMA Conference Hamilton County 4H Fairgrounds Learn more at tinyurl.com/CISMA2020

April 8

Marketing Hardwood Veneer Logs and Trees Edinburgh Contact jackson@purdue.edu or 765-583-3501.

Upcoming LOCAL CISMA EVENTS: See https://www.entm.purdue.edu/iisc/ for times, locations, contact info for upcoming invasive management meetings in various counties around the state.

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The opinions expressed by the authors do not necessarily reflect those of the Woodland Steward Institute. The objectives of the newsletter are to provide general and technical natural resource information to woodland owners of Indiana, improve information distribution and build support for responsible forest resource management.

Member Organizations Indiana Woodland Steward Institute





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2019 Stumpage Timber Price Report Continued from page 1

in northern Indiana which may be due to a decline in the ability to still salvage the ash mortality caused by the emerald ash borer.

Volume of Timber Sold: The total stumpage volume sold increased to 21,123,950 board feet (plus 710,410 board feet in negotiated sales) from 19,630,108 board feet (plus 642,774 board feet - negotiated sales) in 2018 which is still less than the 24,700,232 board feet (plus 983,276 board feet in negotiated sales) reported in 2017 and 29,044,240 board feet (plus an additional 1,257,863 board feet in negotiated sales) reported in 2016 and a drop from the record high reported of 36,773,866 board feet (plus 683,235 board feet in negotiated sale) reported in 2015. Historically the average amount sold each year has been around 25 million board feet (with the exception of the recession years in 2009 and 2010).

The volume for the high quality sales totaled 7,650,681 up from 6,819,117 board feet reported in 2018 and down slightly from the 8,089,611 and 7,728,890 board feet reported in 2017 and 2016. The highest total was reported in 2015 at 11,861,259 board feet. The volume reported between 2011 and 2014 was between 8.5 to 8.7 million board feet.

The medium quality sales totaled 12,168,667 board feet in this reporting period is nearly the same as last year 12,075,284 board feet witch was down from the 14,928,599 board feet reported in 2017 which was down significantly from the 19,782,273 board feet reported in 2016 and just over half of the 22,606,525 board feet reported in 2015. An increase in ash on the market due to mortality or pending mortality caused by emerald ash borers likely influenced the high volumes sold in 2016 and 2015.

Lower quality sales increased to 1,304,602 board feet from last year's 735,707 board feet which is more in line with the 1,682,002 and 1,533,077 board feet reported in 2017 and 2016 although down significantly from 2,486,082 board feet and 2,657,366 board feet in 2015 and 2014, respectively. Historically the volume of lower quality sales has generally been around 3 million board feet.

Value of Timber Sold: Total timber value sold in the 2018-19 reporting period increased significantly to \$14,057,036 from \$11,878,170 and \$12,272,227 reported in 2018 and 2017. The value, however, is similar to the \$14,939,352 reported in 2016. A record high of \$19,207,898 was reported in 2015. The high quality sales brought \$6,966,410, the medium quality \$6,635,847, and the low quality \$454,779.

Interest in Sale Stays High: A total of 1,393 bids were received for the 230 timber sales for an average of 6.06 bids per sale which is nearly identical to the average of 6.07 bids per sale last year which was up considerably from the 4.83 bids, 5.14 bids reported in 2017 and 2016 and 4.62 bids per sale received in 2015 and 2014. The high quality sales received 6.93 bids per sale down from the 7.85 bids last year but up from 6.3 and 6.4 the previous two years and the 5.82 and 5.85 bids received in 2015 and 2014. Medium quality sales received an average of 5.67 bids per sale this year up from 5.23 bids reported in 2018 and up considerably from 4.3 bids in 2017 which had been very consistent for several years. The number of bidders on the low quality sales also increased to 4.1 bids per sale up from 3.6 bids last year and the 2.8 bids per sale which had been fairly consistent since 2014.

The high number of bids reflects the strong market for the all timber. More competition, typically results in a higher stumpage price which is reflected in the data.

Stumpage Prices (Table 1): The average stumpage price was the highest since the report began in 2001 for all the sales and all the categories of sales. The average stumpage price for all sales was \$666/MBF which is up from last year's record stumpage price of \$605/MBF.

The average stumpage price for high quality sales increased to \$911/MBF (\$856/MBF median value) for the reporting period which is up from \$844/MBF (average and median value) last year and up from an average stumpage value of \$682/MBF (median value of \$713/MBF) reported in 2017. The previous record high was reported in 2016 with a value of \$814/MBF (median value of \$744/MBF).

The average stumpage price for the medium quality sales was a record \$545/MBF (median value \$483/MBF) up from a record high \$490/MBF (median value \$459) reported in 2018 and \$422/MBF (median value of \$424) reported in 2018 and



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												2.14
lab	Ble 1. Statistical Summary for High, Average High (97 sales)				., and Low Quality Sealed Bid Timber Sales Medium (112 sales)				April 16, 2018 thru April 15, 2019.			
	BF ¹	Value	Bids	\$/MBF ²	BF	Value	Bids	\$/MBF	BF	Value	Bids	\$/MBF
Total	7,650,681	\$6,966,410	672	\$911	12,168,667	\$6,635,847	635	\$545	1,304,602	\$454,779	86	\$349
Low	4,248	\$6,328	1	\$472	5,223	\$5,195	1	\$215	9,742	\$2,392	1	\$160
High	577,154	\$429,359	17	\$8,317	823,784	\$493,788	14	\$1,040	227,321	\$56,750	8	\$589
Mean	78,873	\$71,819	6.93	\$911	108,649	\$59,249	5.67	\$545	62,124	\$21,656	4.1	\$349
Median	49,990	\$50,000	7	\$856	74.645	\$33.093	5	\$483	39,571	\$13,000	4	\$359

 $^{1}BF = board feet$, $^{2}MBF = thousand board feet$

2017. Prior to 2018 the highest average stumpage price for the medium quality stumpage was \$433 reported in 2004.

The average stumpage value for the low quality category was also a record at \$349/MBF (median value \$359/MBF) which was a significant increase from the \$275/MBF (median value \$284/MBF) and \$272/MBF (median value of \$286/MBF) reported in 2018 and 2017. The previous record high was reported in 2015 at \$290/MBF. The range for the stumpage prices for the low quality sales has generally been between \$200-\$230/MBF since 2001. Although demand for timber has been good resulting in part of the stumpage increase, the high stumpage price for black walnut and the inclusion of a few walnuts trees in the lower quality sales appears to have driven much of the price increase.

This year there were 35 sales (15.2 % of all sales) compared to 29 sales (13.7%) last year that brought over \$1.00 per board foot. The percentage of higher value sales reported the last two years (15.2 % and 13.7%) is up from the 9 to 10% conducted the previous three years. This increase is due to the high prices associated with black walnut and to a lesser degree white oak with foresters and landowners trying to take advantage of those high prices. These very high value sales are generally outliers that distort the average stumpage value all the sales, which is why the median value is often the best indicator of value for most woods and sales. The highest stumpage price

reported for a sale this period was over \$8 per board foot (all black walnut). The lowest price was \$160/MBF or 1/50th of the stumpage price for the highest individual sale. This indicates the significant difference in the value of each tree.

Landowners should keep in mind that markets are only one factor to consider when selling timber. The condition of the tree is the most important factor that determines when it is the right time to sell a specific tree (is the tree increasing in value or declining? - is the trees condition (health and vigor) going to decline, stay the same, or improve?). Trees should be sold based on their problems or lack of potential rather than their current value. Another factor to consider when selecting harvest trees is what impact that tree will have on the health, vigor, and resiliency of the future stand? (Is it competing with a better tree or will it benefit or negatively impact natural regeneration, etc?). The lower quality sales are generally improvement harvests (commercial weeding) and the opportunity cost in lost productivity of the forest by not conducting these sales can be significant. Ideally, you should sell your good trees when they have reached their peak or highest potential. Someone asked me at a field day when to sell high dollar trees; part of the answer is you don't sell trees based on their value, that \$1,000 tree will never be worth \$2,000 or \$5,000 if you cut it now. You need to evaluate the risk of growing the tree forward and the potential reward (which



can be over 10 % annually) and decide is the reward is worth the risk? It often is. If done properly the value per board foot should increase in subsequent sales along with the financial productivity, quality and value of the trees in the woods. Many of the sales reported in this report have come from woods that have been well managed for many years, through several harvests. This is likely part of the reason there are fewer low quality sales reported and part of the reason high prices are reported. Good forest management definitely provides higher returns.

Fig 2. Average Stumpage Price per Year



The stumpage prices for all sales, high quality sales, medium quality sales, and low quality sales held between April 16, 2018 and April 15, 2019 are reported in Figure 1. The curve indicates the range in values that the sales fall into. The jagged line at the higher end of the high quality and all sales lines is evidence of the variations in value some trees, especially high value walnut can have on the price.

All sales; low, medium, and high quality can be affected by sales with potential veneer or by the presence of a few high value trees, particularly black walnut and white oak. It is important for landowners reading this report to realize their timber typically will fall within the range of stumpage prices but probably will not fall into the outlying values. This makes it important to work with a professional who works for you when selling timber so that you know exactly what you have, an educated seller and an educated professional buyer generally results in a very successful sale.

The weighted average stumpage price by sale type (obtained from this survey in 2000, 2002, 2004, 2006, 2008-19) is reported in Figure 2. The weighted average of the stumpage price is the total dollar value for each sales category. The median stumpage price per year for each sales category is reported in Figure 3. The median price is the amount where half of the sales are higher and half are lower. The price reported is per 1,000 board feet (\$/MBF) for standing timber.

Comments: Tariffs are still part of most discussions at this time. Indiana exports a considerable amount of high value



timber and China is the largest importer. Exported timber is generally higher quality and higher value, therefore, some species (red oak, black cherry, and black walnut) will be impacted more than the lower quality timber (pallet) and specialty uses (staves, quarter sawn, etc) that stay in the domestic market. Because of the uncertainty and the volatility of the market related to the tariffs it is even more important to work with a professional forester that is looking out for your long term financial interests.

Standing timber prices often vary during the year and can change rapidly based on supply and demand. The prices are influenced by many factors including the tree species, the tree quality and size, where you are in the state, the distance to various types of sawmills, the access to infrastructure, and the accessibility of the trees (steep slopes, water crossings, drainage, etc.), the size of the harvest, the terms of the sale, etc.

At this time the tariffs and threats of tariffs have impacted the timber markets with some species affected much more than others. For example, the markets for red oak have been very volatile due to the uncertainty about the tariffs. This report and the comments below are merely a snapshot in time and the markets can change quickly. It is therefore very important to work with a forester to get an up to the minute view of the existing markets.

Several consultants indicated, as the data shows, the markets this year have been some of the best they have seen with

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Green Snakes in Your Woods?

By Mike Everidge

While some folks might not be comfortable with the topic of snakes, there are many advantages of such. A caring steward of the land understands this value and will promote habitat favorable to many plants and animals, snakes included. Yes, all snakes have value. From insect and rodent control to having attractive patterns and/or colors.

Indiana is home to two species of green snakes. The smooth green snake (*Opheodrys aestivus*) occurs in the northwestern corner of Indiana while the more common rough green snake (*Opheodrys vernalis*) is found in most of the southern third of the state.

Most snakes spend their active lives at ground level. Leaf litter, rock outcrops and water sources can be good places to view them if you are so inclined. However, this snake, will more likely be seen hanging around in the shrub layer, moving slowly and deliberately from branch to branch. The rough green snake is almost invisible with its nearly fluorescent green top and yellowish or whitish underside. Woodlands managed by prescribed fire, TSI, timber harvests and invasive removals can help create good habitat for them and multiple other plants and animals by allowing native plant species to thrive. These management activities allow at times for a healthy shrub component. Woodland edges are also good habitat for them. With a favored diet of grasshoppers, spiders and crickets, the edges and shrub layers will keep them returning to feed on these and other insects which commonly hang out there as well.

The largest threat to this species minus habitat loss and my neighbor's hoe is the invasion of exotic invasive species which have little trouble outcompeting the native species. These exotic species displace native species disallowing preferred habitat and stealing valuable resources. This unwanted invasion creates a snowball effect involving and changing everything from soil moisture and insect habitation to fungal associates and density on the forest floor. This unnatural disruption eliminates some of the natural habitat thus making foraging and protection more difficult.

Early detection and removal are the easiest steps to controlling these unwanted pests. A good resource for identification, reporting and treatment options of nonnative invasive plant species is *https://www.mipn.org/ publications/* Your local forester as well as your county extension agent may also be a helpful resource.

It can be easy to overlook or forget the importance of a whole and healthy native ecosystem especially if you are looking at only a portion of such. But know and trust these complex relationships within your woodlands. They are always striving to advance life. Even when potentially outcompeting aggressive exotic species are constantly edging their way into our woodlands, we can stay ahead of this advancement and help keep our native species around for many more millennia.

When you walk through your woodlands and may (or may not) be startled by a green snake imitating a sassafras branch, smile, and remember this snake to be a sign of a healthy and happy ecosystem you are managing and protecting. For additional information on herpetological conservation, see *http://parcplace.org/*

Mike Everidge is a Field Steward and self-proclaimed plant nerd for The Nature Conservancy in Indiana.



Conservation Program Engages Women Landowners

Women4theLand (W4L) is a partnership of Indiana agricultural and natural resource conservation agencies and organizations working together to provide information, networking opportunities, education and resources to Indiana women landowners and farmers. The goal is to empower women to make good science-based land use management decisions that are economical, productive, sustainable and environmentallyfriendly.

W4L uses the learning circle model to provide information in a comfortable, informal setting where women learn from professional conservationists as well as from each other. The meetings are facilitated in a way that builds knowledge and confidence. Participants are encouraged to share their own experiences, conservation needs and goals rather than to listen to a presenter.

W4L provides information about conservation practices, new technology, financial assistance programs, where to find assistance and more on topics such as planting for pollinators, improving soil health, invasive species control, managing a woodland, restoring a wetland, etc.

Our participants include beginning and established farmers or landowners, those that rent their land, or a combination of both. They represent all types of farming from commodity crops to livestock to forestland to organic to urban farming to truck crops. Everyone is welcome.

If you are interested in learning about the Women4theLand initiative and when ladies only events are being held in your county, please email Heather Bacher at hbacher@women4theland.org with your email address and county. You can also find Women4theLand on Facebook and at www.women4theland.org.



W4L provides education and information about conservation management practices, new technology, communicating effectively with tenants, financial assistance programs, where to find assistance and more.



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Post-Harvest Blues

by Dan Shaver

The night is dark and rumbly, thunderstorm warnings and tornado warnings are going off on the emergency weather radio all night. You wake to a soggy dawn and news reports about tornados in your local area. When you step out of your house, you realize that something is wrong in your woods. As you make your way to woods there are leaves and limbs down everywhere, trees are snapped and broken. Familiar trails seem confusing and changed and your favorite hunting area is suddenly more open and sunnier instead of cool and shaded and the forest just feels different, unknown and disturbed. Overnight the tornado changed your forest. You are upset, frustrated, confused, angry and flat out unsure what to do.

These same feelings can occur after a timber sale. A timber sale is often compared to a controlled tornado. It is controlled because we can decide when it is going to happen, which trees will be harvested, and whether there will be openings or single tree selection. If we work with a professional forester, have a contract that protects us and manage the harvest properly we can help ensure that our forest will recover and be healthy and productive over time. But even the best timber sale is ugly, messy and changes the forest. The change, the mess, and the disturbance to the forest can be very unsettling. The postharvest blues can set in quickly unless you have a plan to help the forest recover. Here are somethings you need to be aware of before you harvest timber and how to help the forest recover.

Chunk pile and log yard – During the harvest the trees must be pulled out of the woods and put on a truck to go to the mill. Major defects are cut out of the logs before they are loaded on the truck and sent to the mill. The cut off pieces or "chunks" are piled up on the edge of the log yard. When the harvest is done the log yard will typically be compacted bare dirt with a large chunk pile on one side. The chunks are yours to use for firewood or just left to rot. The log yard itself may need some help. Depending on where it is located, you might want to turn it into a wildlife food plot, seed it with native plants or maintain it as an open area to park and work on forest projects. Hopefully it will be used as a log yard for



The log yard can be dusty, rutted and messy during the harvest. Before equipment leaves the site the log yard should be graded smooth and large debris pushed to the chunk pile.

the next harvest. Before the logging company leaves your property make sure you are happy with how the log yard looks. Once the equipment is gone it is much harder to get it back to fix something.

Skid Trails - Modern day skidders will leave a trail in your woods 16-18 feet wide along the main skid road and narrower on the side trails. The forester may flag some of the major skid trails for the loggers to follow, but many skid trails are put in by the skidder operator as they are trying to find and haul out trees that have already been cut. Skid trails typically go from the woods to the log yard as straight as possible. Loggers want to minimize the distance they have to pull logs. A timber sale contract should always specify in what condition the skid trails will be left and that Best Management Practices (BMPs) for water quality are required. At a minimum skid trails should be smooth and free of ruts deeper than 6 inches when harvesting is done. Waterbars should be installed on all slopes and before any creek crossings to get water off the skid trails and prevent soil erosion. More information on Best Management Practices for Water Quality can be found at *https://www.in.gov/dnr/* forestry/2871.htm . The requirement for Best Management Practices should be in your contract and enforced by you or the professional forester.





Damage to Residual Trees - Driving big machinery and pulling long trees out of the woods is going to result in some residual damage to standing trees. We try to minimize residual damage by laying out the timber sale in the way that gives the logger room to pull trees out and by marking trees for harvest that we know are going to be hit by equipment or logs. It is important to monitor your timber sale and stop loggers if they are causing too much residual damage. Residual damage is often due to the loggers being careless or trying to go too fast. Your forester should be on site to check on the loggers, but between visits the landowner should pay attention to how the loggers are doing. Excessive residual damage can degrade the future value of trees on your property. Small bumps or abrasions to bark will often heal or disappear with time, but if the damage is extensive the loggers need to be stopped and the situation corrected. Once it is done, it cannot be undone.

Tree tops – Most timber sale contracts state that the tree tops remain the property of the seller. The loggers will cut down the tree and haul out the merchantable part of the tree to the log yard. The rest of the tree will be left in the woods. For many landowners the tops are the worst part of a harvest. They make the forest look messy. The reality is that tops left in the forest break down pretty quick and provide dead woody debris for many species to live in and on. As a landowner you can go through the woods and cut the tops up for firewood or just cut the main limbs down to make them

look nicer and put more wood in contact with the soil. It will rot faster if it is laying on the ground. Care should be taken when cutting up tops. There are often branches under tension that can snap, kickback or even explode when hit with a chainsaw. Use extreme caution and wear PPE when cutting up tops or in a chunk pile.

You may run into other problems on your timber sale as well. Stream crossings, gates, culverts, tree stands, or access roads can all be damaged or messed up during a timber sale. Work with your forester to identify all these issues in advance of the timber sale and build provisions into the contract as needed to protect your woods. Just be warned, even with a professional forester and a good contract a timber sale may not go the way you hope. The post-harvest blues may find you no matter what. Be prepared to invest 15-20% of what you make on your timber sale back into the woods to fix it up, do forest stand improvement, control invasive plants and in general clean up your woods after the timber sale.

Most importantly remember forest management takes time. The disturbance from a tornado takes just seconds or a harvest may take a few weeks, but recovery from the disturbance can take a few years. Our forests are resilient, and many species benefit from forest disturbance and the recovery that takes place over time.

Dan Shaver is the Forest Bank Operations Manager for The Nature Conservancy's Forest Bank Program in Indiana.





Even small damage to the base of a good tree can hurt future value, but major damage (like the tree on the right) may never heal over and severely degrade or kill the tree.

New Resources in the Battle Against Invasive Plants

By Marion Mason

Invasive plants threaten our natural ecosystems, cost us money and in some cases, endanger our health. Non-native invasive plants are plants that are not native to the area, and which cause (or are likely to cause) harm to environmental, economic, and/or human health. Some arrived by mistake, hitching a ride in the global transportation system. Others were planted intentionally, and only later discovered to be problematic. Regardless of how they got here, the bad news is as they continue to spread, they take over our yards, farms, and woodlands, invade our natural areas, and pose a major threat to our biodiversity. Invasive species cost the U.S. economy over \$138 billion each year and almost 50% of all threatened and endangered species are at risk because of habitat loss due to invasive species.

Although the issue may seem overwhelming, there have been some recent positive developments on this front in Indiana. In March, 2019, Governor Holcomb signed the Terrestrial Invasive Plant Rule. The rule designates 44 species of plants as invasive pests. This rule makes it illegal to sell, gift, barter, exchange, distribute, transport, or introduce these plants in the State of Indiana. This rule goes into effect in two stages. As of April 18, 2019, it is illegal to introduce plant species on this list not already found in Indiana. Plant species already in trade will be prohibited from sale one year later (April 18, 2020). To see a list of affected plants visit *https://www.in.gov/ dnr/6351.htm*.

Non-native, invasive plants already present need to be controlled to reduce further spread. The Indiana Invasives Initiative (III) was recently established with that goal. Spearheaded by SICIM (Southern Indiana Cooperative Invasives Management), the III is focused on grassroots

A Note from the Editor

At the Woodland Steward we very much appreciate feedback from the readers. We received a letter regarding the story, *About a Woods in North Central Indiana*, that was published in our most recent issue. The reader had a question about the validity of the financial numbers listed in the article since data on management costs over time and opportunity cost over the time period listed was not included. We published the article as a case study that demonstrates that good management yields positive results. It was not intended to be a complete financial analysis of the property. We sincerely apologize if the article was interpreted that way.



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efforts at the county level throughout Indiana to form cooperative invasive species management areas, or CISMAs. These organizations are made up of local partners including federal, state, and local governmental agencies; universities; the tourism industry; master gardeners; clubs and interested landowners who share a common concern about the negative impacts of invasives. Although groups vary, the common core is the pooling of resources and knowledge to provide education and take action on a broad scale across jurisdictional and landownership boundaries. Many CISMAs offer private landowner invasive plant assessments, management plans and cost share assistance for control. The III is partially funded through an agreement between USDA Natural Resource Conservation Service and SICIM, and various other grants, donations, and contributions. Contact sicim.info@gmail.com, visit www.sicim.info, or look for a Weed Wrangle near you to get involved.

Every woodland is different, local markets change over time, and the inputs necessary to manage a woodland vary by the resources available to a particular woodland owner. In order to gauge the potential of your woodland, seek the guidance of professionals such as professional foresters, tax advisors or accountants who are knowledgeable about woodland finances and tax laws.

In the meantime, enjoy what is left of the fall weather and keep those letters coming.

Brian MacGowan, editor



Another resource for controlling the spread of invasives is the national PlayCleanGo campaign. Even if you don't own land, or have invasives on your property, we can all play a role in stopping the spread of invasives by taking a few simple actions. Seeds and plant fragments can easily attach to clothing, shoelaces and get stuck in the mud on the bottom of shoes. These propagules hitch a ride, fall off at another

location and start a new infestation. Carry a small brush and clean your shoes after you have been outdoors. Pick seeds and plants off of clothing and pets and dispose of them in the trash. OHVs, tractors, bikes and other wheeled vehicles can also spread seeds and should be cleaned after each use. To reduce the spread of aquatic invasives boats should be cleaned after use as well. For more information visit www.playcleango.org.

Moving firewood can transport nonnative forest insects and diseases, resulting in the death of thousands of trees. Recommendations to reduce the spread of invasives through firewood include buying or using locally harvested firewood, gather wood on site where permitted, use packaged heat treated firewood with a USDA APHIS heat



treatment seal, or a state based (such as a State Department of Agriculture) heat treatment seal. Policies can vary between sites, so always research beforehand. For more information visit www.dontmovefirewood.org.

Unfortunately, new invasive plants and animals can appear where they have not been documented. If new infestations are caught and controlled early, they can be successful, so

> reporting any possible new invasives is advised. It is easy to do online using www.EDDMaps.org/Indiana/, or by smartphone using the Great Lakes Early Detections Network app.

> Lastly, it comes down to supply and demand. The more customers that refuse to purchase invasives and request native plants at nurseries, garden centers, chain stores, seed catalogs, websites, etc., the more likely these businesses are to make the switch.

Marion Mason is the public affairs specialist for the Hoosier National Forest and the Forest Service representative to the Daviess-Martin CISMA.



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A Simple Guide to Understanding and Using Indiana **Forest Products Prices**

By Mo Zhou, Jeff Settle, Lenny Farlee, and Ron Rathfon

For over six decades, delivered log prices in Indiana have been collected and reported on an annual basis. previously by the Department of Forestry and Natural Resources of Purdue University (FNR) and currently by the Indiana Division of Forestry (INDoF). An interactive online tool (publicly available at foresteconomics.info),



Figure 1. Screenshot of the interactive online tool for timber prices in Indiana.

recently developed by

FNR, visualizes these prices in nominal and real terms, as well as provides custom functions for better comprehending the price trends (Figure 1). Nominal prices reflect values of logs at the time they were delivered to mills while real prices are adjusted for inflation thus represent the true values of logs. Inflation over time is represented by the Consumer Price Index (CPI), published by the Bureau of Labor Statistics (www.bls.gov). To compare changes in prices at different points in time, especially when they are far apart, one is advised to compare them in real terms.

Utilizing this rich and valuable information will help landowners make informed decisions in forest management and timber sales. In order to do that, it is important to understand the relationship between three different prices: stumpage, delivered log, and lumber. Stumpage price is the price paid for standing trees, offered by timber buyers to landowners. Delivered log price, as its name suggests, is the price paid for logs delivered to mills. Lumber price is what mills receive for Green lumber. In general, both stumpage and delivered log prices are derived from lumber prices, also affected by numerous factors including economy, consumers'

Figure 2. Relationship between stumpage, delivered log and lumber prices.



STUMPAGE PRICE MINUS transportation, logging costs, and profit margin

DELIVERED LOG PRICE MINUS milling cost, and profit margin



LUMBER PRICE

preferences, fuel price, site accessibility, topography, species make-up, weather, season, etc. (Figure 2). In particular, stumpage price is greatly influenced by accessibility, local and regional reputation of timber quality, species composition, and if the owner has a competitive sale process in some cases. Moreover, stumpage price is largely



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impacted by competition in related markets. For example, the stave market is driving the prices of white oak stumpage and log high right now and consequently affects sawlog and veneer markets and pricing. Hardwood veneer markets are very specialized and driven by the expected aesthetic qualities of the wood for decorative applications, thus prices can be volatile and difficult to predict.

The readily available delivered log prices make it possible to estimate the stumpage value for trees of specific species, sizes, and grades. The general formula to use is:

Stumpage price = Delivered log price – per-unit logging & hauling costs – profit margin

The statewide average of combined logging and hauling costs are currently estimated at 0.225 - 0.275 per board feet (IDNR 2018), respectively, but it is important to keep in mind that both costs are dependent on fuel price and change with season, weather, distance to mills, and site accessibility and condition. In addition, the logging cost is highly variable and the rule of thumb is the more challenging the harvesting condition, the higher the cost. For example, steep ground slows down logging, so costs per unit harvested increase. The profit margin of loggers is usually rather low.

Tree quality and size are two other critical factors in determining the stumpage value. Forest Service provides standards for grading hardwood trees and logs (Hank 1976, Rast et al. 1973). However, in practice, the relationship between tree grades and log grades is less than evident, because log-grading standards can be rather different across mills. As a general guideline, the rough correlation between the two based on diameter, log length, and number of clear sides for sawlogs is (adapted from *https://sunrisesawmill. com/*):

Log grade	Tree Diameter	Log length	Clear sides
Prime	16″ & up	12'& up *	4
No.1	14″ & up	12 ' & up **	3
No. 2	12″ & up	10' & up	2
No. 3	10″ & up	8′ & up	1

* walnut/cherry/white oak 10' & up ** walnut/cherry/white oak 8' & up

For example, a black walnut tree which has four clear sides, is 24" in diameter, and is estimated to produce one 16-feet log is expected to have 220 board feet (Doyle rule) in merchantable sawlog volume of Prime grade. Readers are referred to the table at the end this article for standing tree volumes. The nominal delivered log price of prime-grade black walnut in 2018 was roughly \$2,000 per MBF, i.e., \$2 per board feet. Thus, at the lower end of log & hauling costs, the estimated stumpage value of such of a tree with a zero profit margin is $(2 - 0.225) \times 220 = 390 , while at the higher end, it is: $(2 - 0.275) \times 220 = 380 . Assuming a profit margin of 5% for timber buyers, the actual price paid may fall in the range of \$360 to \$370.

A relatively good idea of the estimated worth of standing trees on a property is an important piece of information to have on hand, before timber sale. Verifying one's own estimate with a professional forester is highly recommend. It is also critical to take the estimated worth of trees into consideration when making forest management plans. Bigger diameter, higher quality trees can be worth much more, hence investments to improve timber stand quality and growing high quality trees to larger diameters usually generate considerable returns in the future. Stumpage prices fluctuate over time, as delivered log prices, and are often in sync with business cycles. Therefore, when stumpage prices are low, it often makes sense to let the trees grow on the stump until prices recover. It is critical to remember that the price reports we see today do not reflect the actual marketplace for timber, as the information is already out of date. They can be used for comparison, and deriving relative value estimates, but should not be considered an accurate picture of current market value. Landowners are recommended to use services of a professional forester for valuation of standing timber when accuracy is important, such as establishing basis, information for settlement of an estate, or investment decisions.

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Appendix:

Dbh	Number of 16-Foot Logs								
(inches)	1/2	1	1-1/2	2	2-1/2	3	3-1/2	4	
Board Feet									
12	20	30	40	50	60				
14	30	50	70	80	90	100			
16	40	70	100	120	40	160	180	190	
18	60	100	130	160	200	220	40	160	
20	80	130	180	220	260	300	320	360	
22	100	170	230	280	340	380	420	460	
24	130	220	290	360	430	490	540	600	
26	160	260	360	440	520	590	660	740	
28	190	320	430	520	620	710	800	880	
30	230	380	510	630	740	840	940	1,040	
32	270	440	590	730	860	990	1,120	1,220	
34	300	510	680	850	1,000	1,140	1,300	1,440	
36	350	580	780	970	1,140	1,310	1,480	1,640	
38	390	660	880	1,100	1,290	1,480	1,680	1,860	
40	430	740	990	1,230	1,450	1,660	1,880	2,080	
42	470	830	1,100	1,370	1,620	1,860	2,100	2,320	

Table 1. Standing Tree Board Foot Volumes—Doyle Rule

From: Ashley, Burl S. 1980. Reference handbook for foresters. USDA NA-FR-15. 35 pp.

Source: https://ohioline.osu.edu/factsheet/F-35-02



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most, but not all, species doing well. We do not know what the complete impact of the tariffs will be or how long the impact will last. The tariffs may be only a short-term blip impacting the markets for several months or they may affect the markets for years, no one knows and no one likes uncertainty. When there is uncertainty, risk increases, and when risk increases the markets generally contract.

- Black walnut continues to be good although it may have dropped slightly for the lower grades.
- Red oak demand has dropped considerably likely due to the tariffs with nearly 75 % of exported red oak from Indiana going to China.
- Cherry markets appeared to be climbing out of a decade long slump last year (since the 2008 recession), but they have dropped back due the drop in exports tied to the tariffs.
- Ash prices for live trees have been good, however, many of the better logs have been exported so the prices have recently dropped.
- Hickory prices have generally been good although the markets are fluctuating. A longer contract (2 years) tends to bring a better price as it lowers the risk for the timber company when markets are volatile.
- Tariffs have mainly hurt red oak and black cherry with the lumber prices being affected more than the standing timber prices. A reckoning of the lumber price and standing timber price eventually will come.

It is anticipated that the following species will not be affected as much by any tariffs.

- White oak remains very strong with high demand for most grades due to diverse markets including barrel staves, ties, and quarter sawn. White oak markets don't seem to be affected much by tariffs.
- Poplar demand remains good and steady, especially for larger trees. This species grows quickly and at higher densities and volumes per acre therefore proper management can yield high returns.

- Sugar maple demand is good, especially for white wood. Sugar (Hard) maple has strong domestic markets.
- Low grade (pallet) demand has been good. The markets should be okay as the economy stays strong.

The following are general comments.

- The wet weather the last couple years has caused major issues with timber harvesting. It is important to work with the timber companies to ensure the process works for everyone.
- Landowners need to have invasive species controlled prior to any harvesting. They are a slow moving wildfire that inflates (expands) rapidly after a disturbance such as a harvest.
- Quality timber continues to sell well and draws more interest and a much higher price from buyers. This further demonstrates that management pays large dividends.
- A few good trees can attract buyers to sales that are generally low quality making them possible to sell. Essentially you make money commercially weeding the woods.
- Sales with low volumes are hard to sell unless some high quality timber is present or access is desirable.

Consulting Foresters that have contributed to this report in alphabetically order include: Arbor Terra Consulting (Mike Warner and Jennifer Boyle Warner), Crowe Forest Management LLC (Tom Crowe and Jacob Hougham), Christopher Egolf, Gandy Timber Management (Brian Gandy), Gregg Forestry Services (Mike Gregg), Habitat Solutions LLC (Dan McGuckin), Haubry Forestry Consulting (Rob Haubry), Multi-Resource Management, Inc. (Thom Kinney and Doug Brown), Meisberger Woodland Management (Dan and Matt Meisberger), Quality Forest Management, Inc (Justin Herbaugh), Abe Bear, Stambaugh Forestry (John Stambaugh), *Turner Forestry, Inc. (Stewart Turner), and Wakeland Forestry* Consultants, Inc. (Bruce Wakeland) and Rooted in Forestry (Mike Denman and Andrew Suseland).

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Days Gone By

Woodland owners had to use what was available to them. W.B. Durnil used cull lumber for fencing a hog yard, Washington County, circa 1931 (left). A large farm gate was constructed of mature oak on the J.D. Grove Farm, location and date unknown (right). Photos by Roy C. Brundage.



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