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The remains of a Leyland cypress tree that has been completely defoliated by bagworms. Photo courtesy of Blake Layton, Mississippi State University Extension Service, extension.msstate.edu

Be on the lookout for bagworms

By Valerie West

Warm weather is here, and once again, tree pests begin to flourish. One of the more aggressive pests of ornamental and landscape conifers is the evergreen bagworm moth (*Thyridopteryx ephemeraeformis*). There are

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Introduction to herbicide terminology for wildlife habitat managers

By Luke Stamper

Herbicides are one of many tools available to wildlife habitat managers. When used in accordance with label instructions, they can prevent or control woody encroachment in moist soil impoundments, eliminate competing vegetation from supplemental food plots, limit spread of non-native invasive species like Chinese tallow, and remove less desirable trees from woodlots, among many others. Given the large number of options on the market, choosing the right herbicide can be difficult. Below we've defined common terms used to describe herbicides so that you

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several species of bagworms that feed on shrubs and trees during their larval stage. They feed heavily on many species of coniferous trees, deciduous trees (including fruit trees), and perennial flowers such as roses. In most cases, the feeding activity of these moth larvae results in slowing the growth of the plant. When the host plant is a conifer with no or slow needle shed and regrowth, such as cedars, junipers or cypress, they can be deadly due to slow foliar recovery. The plant simply starves to death before it can reestablish foliage, and any foliage that begins to grow while the larvae are still feeding is quickly consumed, further draining the tree's resources for survival.

So, what can be done to control bagworms? First, be observant. If you see one bagworm there are most likely more. Start looking for bagworms during the winter or early spring. Bagworm egg sacks are brown and 1/2 to 2 inches (3.8 to 5 cm) long. They are covered with dead needles, so they appear more noticeable in contrast to the green deciduous needles at this time. Bagworm sacks can be very hard to find because they look like pinecones. To get rid of bagworms you have two choices. You can remove them by hand, or you can treat your landscape with an insecticide during specific stages of the bagworm's development.

To remove them by hand, it is recommended that you clip the entire bag from the branch and submerge it in a bucket of soapy water. You can then place the soggy bags into a sealed container or bag and toss them in the trash. This method will need to be repeated every year to keep the population under control and applied to every



Close up view of a single bagworm caterpillar in its namesake bag. Photo courtesy of Gerald Holmes, Strawberry Center, California Polytechnic State University in San Luis Obispo, Bugwood.org

bagworm case that is removed from your trees. If you choose to use insecticides, spray in late May, June and early July. This is when it can kill young larvae. Stop by late July and August when the bagworms are resilient, and the insecticide no longer works. Read the label of the insecticide to make certain it is effective against bagworms. Some of the better products for the treatment of bagworms are foliar sprays containing spinosad. Fertilome, Green Light, Monterey and Bonide all sell such products, and commercial applicators can use Conserve. You may also consider a systemic insecticide that can be taken up by the tree as an added layer of protection.

Again, you should check the label to make certain the product will kill bagworms before purchasing or applying. Once September and early October begin, the adult bagworms begin fertilizing their eggs. You should begin the process of handpicking the egg sacks at this time. Adult male bagworms are moths with black wings and brown spots. They die after fertilization. Female bagworms remain inside the sack in their larval state.

Bagworms have big appetites. The best defense is a good offence to control this pest in your landscape.

Valerie West is a forestry extension agent in northeast Louisiana.

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can select a product that will help you meet your management goals.

Trade name — Trade name is the brand or trademark by which a commercial product is identified. The same active ingredients can be found under a multitude of trade names. The most used example is glyphosate with tradenames such as Cornerstone, Roundup and Accord that all contain the same active ingredient.

Active ingredient — The active ingredient is the chemical formulation responsible for phytotoxicity and control of targeted weed species. Active ingredients are important to understand because of the many trade names an active ingredient is marketed by. When you know the active ingredient you are searching for, you can better understand the herbicide label and ensure you are purchasing the correct product.

Mode of action — In general, the mode of action (MOA) is the way an herbicide controls a group of weed species through the interruption of key plant functions. Examples of MOAs are growth regulators, photosynthetic inhibitors, amino acid synthesis inhibitors and many others.

Pre-emergent/Pre-emergence herbicide — According to the Weed Science Society of America, pre-emergence describes herbicides that are applied to the soil before the emergence of the intended weed or crop. This herbicide application method can control weeds before or soon after they emerge.

Residual herbicide — Any herbicide that remains active in the soil for some period (days, weeks, months) that cause injury or death

to emerging weeds. Soil-applied pre-emergent herbicides are an example of herbicides that have residual activity because they can control emerging weeds for several days or weeks giving the intended crop time to become established.

Post-emergent/Post-emergence herbicide — A herbicide that is applied post or after the target weed has emerged. This type of application can control already established weeds unlike the majority of pre-emergent herbicides which have little activity on established weeds.

Systemic herbicide — When the herbicide is applied and is translocated throughout the plant causing injury or death. University of California Weed Science illustrated this by writing that systemic pre-emergent herbicides can be taken up by the roots and moved to leaves while post-emergent herbicides can be taken up by the leaves and moved to the roots.

Contact Herbicides — Unlike systemic herbicides, contact herbicides only affect plant tissue that is directly applied with herbicide and does not have the ability to move to untreated plant parts.

Adjuvant — An adjuvant is any substance that already exists in a herbicide formulation or that is added to the tank in which it modifies the herbicidal activity or the characteristics of the application.

Herbicides are just a small component in the toolbox of habitat management but absolutely have a place here in the Deep South where weed seed banks are prolific and often problematic. Gaining some understanding of the terminology used to describe these products can increase your success along the way. Good luck this growing season!

Luke Stamper is a wildlife and forestry extension agent in northeast Louisiana.

Example herbicides. Photo by Luke Stamper, LSU AgCenter.



Exotic species: Cuban tree frogs

By Keith Hawkins

"Hey there! My name is Kurt. I live in Lake Charles, Louisiana, and I believe we have a Cuban tree frog at our house. I've never seen one, but we recently bought a sabal palm from Florida, and I suspect it's one. If you could help me with identifying it, I would be very grateful. We think it's either a Cuban or a grey."

Kurt also followed up with more observations. "So the main reason we wondered was because it looked way different than the Cope's grey tree frogs we've seen. We were watching it for weeks on our porch at night and got some good looks of it. We have a lot of little green tree frogs on our glass at night, too. And to be honest we euthanized the Cuban tree frog. We were as sure as we could be that it was Cuban tree frog. It was a lot faster and dartier than other frogs. I didn't want to kill it, but

I did it to hopefully keep the greens and greys around."

Brad Glorioso, a research ecologist with the U.S. Geological Survey, described the problems with Cuban tree frogs "Homeowners may be familiar with the nuisance species as they have noxious skin secretions, lay their eggs in bird baths and ponds, and can clog plumbing and cause power outages by short-circuiting utility switches where they seek refuge." Cuban tree frogs also displace native tree frogs and disrupt local ecologies. "They often end up in places with unsuitable climates, but in south Louisiana, Cuban tree frogs appear capable of withstanding seasonal cold spells by seeking appropriate refuge," said Glorioso.

According to the Florida Wildlife Extension at the University of Florida, "The secretions from their skin can be very irritating to your skin and

eyes. To avoid getting the secretions in your eyes, always wash your hands immediately after handling any toad or frog. The secretions from the skin of any frog or toad can cause eye irritation for some people, but this is especially true with the Cuban tree frog."

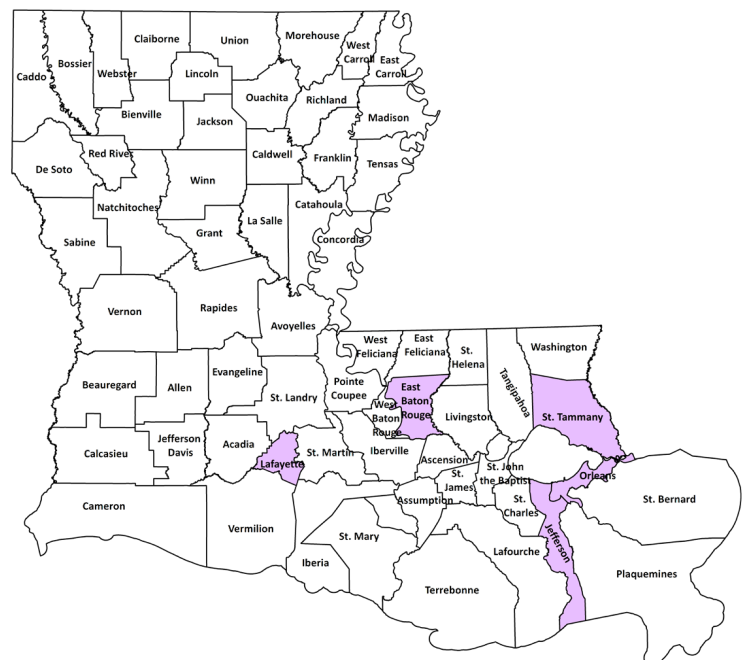
The map below shows the parishes with Cuban tree frog infestation and includes Lafayette, East Baton Rouge, Jefferson, Orleans and St. Tammany parishes. If you suspect you have a Cuban tree frog, bring a specimen or send a photo to the LSU AgCenter or to the Louisiana Department of Wildlife and Fisheries.

To contact the author, send your questions and pictures to Keith Hawkins, area horticulture agent, at khawkins@agcenter.lsu.edu or call 318-264-2448. Please include the name of your parish.



Figure 1. Cuban tree frogs, like this one seen in Louisiana, can outcompete native species and become a nuisance to homeowners. Photo by Brad Glorioso, U.S. Geological Survey.

Figure 2. A map of Louisiana showing known infestations of Cuban tree frogs. Image: NOLA.com



Louisiana Stumpage Report

First Quarter 2022

By Jingang Guo

The stumpage prices below are the statewide averages and are intended to demonstrate the general trends in the market. The current value of timber can differ greatly across parishes, species, tree quality, market access and other factors. Forest landowners considering a timber sale are encouraged to contact a consulting forester for assistance. Average stumpage prices for the six major products for the first quarter of 2022 were reported as follows:

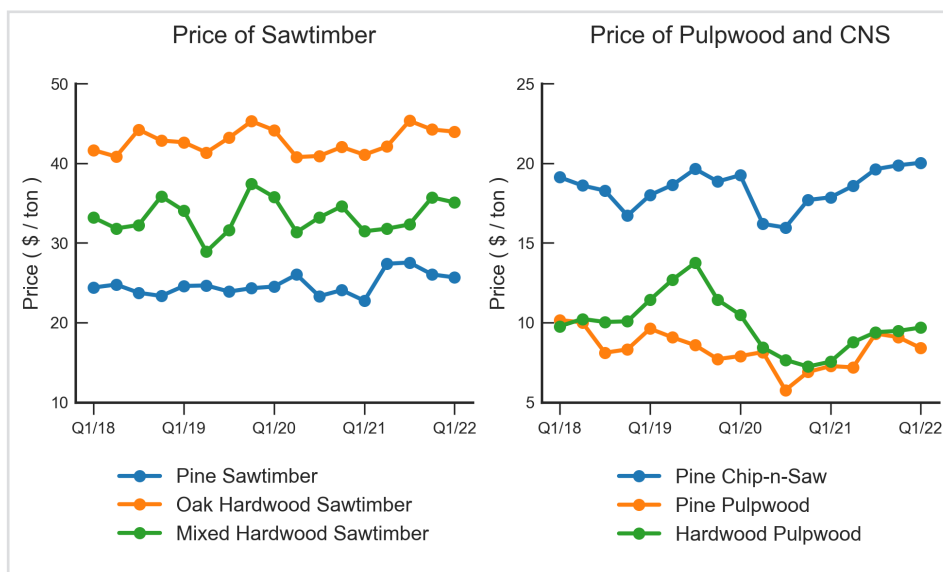
Average stumpage prices*(\$/ton) Q1/2022

	Q1/2022	Q4/2022	% Change
Pine Sawtimber	25.68	26.05	-1.42
Oak Sawtimber	43.99	44.25	-0.59
Mixed Hardwood Sawtimber	35.10	35.73	-1.76
Pine Chip-n-Saw	20.04	19.88	0.80
Pine Pulpwood	8.40	9.09	-7.59
Hardwood Pulpwood	9.69	9.48	2.22

**Oak sawtimber includes both red oak and white oak species. The sawtimber and pulpwood price data included in this newsletter are published with permission from TimberMart-South Athens, Georgia. Contact TimberMart-South via email at tmart@timbermart-south.com. — This document is intended for use by forestry stakeholders of Louisiana. The source of these prices is proprietary in nature.*

Market Trends

Southwide stumpage prices were all pushed up due to the steady demand along with labor and logger shortages, however, stumpage prices in Louisiana didn't follow the southwide average trend in the first quarter of 2022. Prices for four major products in Louisiana decreased in this quarter. The prices of pine sawtimber and oak sawtimber fell by 1.4% and 0.6% to \$25.68 per ton and \$43.99 per ton, respectively. The mixed hardwood stumpage price was down to \$35.10 per ton in the first quarter of 2022. Among all six products, the pine pulpwood market experienced the largest decline from \$9.09 per ton to \$8.40 per ton, more than 7.5% below last quarter's average. The pine chip-n-saw market change was subtle, with the price increasing slightly from \$19.88 per ton to \$20.04 per ton, reaching its highest level in more than 15 years. The hardwood pulpwood price continued to climb up from the fourth quarter of 2021, with average



stumpage prices at \$9.69 per ton. If inflation is factored in, there may be no rise in the statewide average stumpage prices.

One of the factors that may drive the disconnect between the Southwide and statewide stumpage prices is the dry weather. Louisiana's average rainfall for the

first three months of 2022 was 11.21 inches, the lowest quarterly recorded rainfall in more than a decade (average first-quarter rainfall between 2012 and 2021 was 15.65 inches). Timber prices tend to decrease during dry weather since the dry tracts make the timber more accessible and therefore enhance the supply.

Where does timber come from?

By Jinggang Guo

Trees are the No. 1 agricultural commodity in Louisiana. More than half of the state is covered by forest land. The Forest Inventory and Analysis (FIA) data showed that the volume of live trees on forest land in Louisiana was 28.1 billion cubic feet in 2018, with the removal of about 696 million cubic feet (2.5% of the total standing volume). Timber Products Output (TPO) surveys conducted by the U.S. Forest Service FIA estimate

the industrial uses of roundwood in a state. The TPO surveys of 2020 estimated that the volume of timber imported into Louisiana was 172,563 million cubic feet (MCF), which was roughly equivalent to a quarter of the annual production (619,459 MCF). One might wonder why we still import timber from other states given that the timber market has been suffering from an oversupply issue for a very long time in Louisiana.

Table 1. Volume (MCF) of industrial timber in Louisiana, 2020

	Types	Production	Exported	Imported	Retained	Receipts
Softwood	Bioenergy/Fuelwood	23,289	447	34,279	22,842	57,122
	Miscellaneous	51,116	403	3,470	50,713	54,183
	Poles/Posts/Pilings	4,103	0	333	4,103	4,437
	Pulpwood	268,736	16,276	108,333	252,461	360,794
	Sawlogs	115,806	20,925	18,651	94,881	113,532
	Veneer logs	156,409	11,465	7,495	144,944	152,439
	Total	619,459	49,516	172,563	569,944	742,506
Hardwood	Bioenergy/Fuelwood	350	0	1,518	350	1,868
	Miscellaneous	384	0	0	384	384
	Pulpwood	27,181	20,702	1,336	6,479	7,815
	Sawlogs	8,753	908	1,880	7,845	9,725
	Total	36,668	21,610	4,734	15,058	19,792
Grand Total		656,128	71,126	177,296	585,001	762,298

Source: TPO; Visualized by Huizhen Niu; Numbers may not sum due to rounding

Before answering this question, we first need to understand the difference between stumpage price and delivered price. Stumpage price refers to the price received by the forest owners for selling their standing timber. It is a common way to estimate the market value of standing trees before harvest and removal. Delivered price, on the other hand, is what a logger gets paid for delivering timber to the sawmills which implicitly

includes the logging, hauling and transporting costs alongside the stumpage cost. Delivered prices reflect the value of harvested timber when purchased by mill facilities.

According to an IBISWorld report, timber purchase is the single largest operating expense at sawmill facilities. In order to maximize the profit made from each log purchased, the sawmill managers will strive to raise lumber prices

and/or reduce the operation costs, which is more under their control. Sawmills usually draw timber from a certain mile radius of the plant to keep the hauling costs down. TimberMart-South estimated that the average haul distance (miles) was around 48 miles. This is also considered procurement distance.

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Breakdown of sawmill operating costs

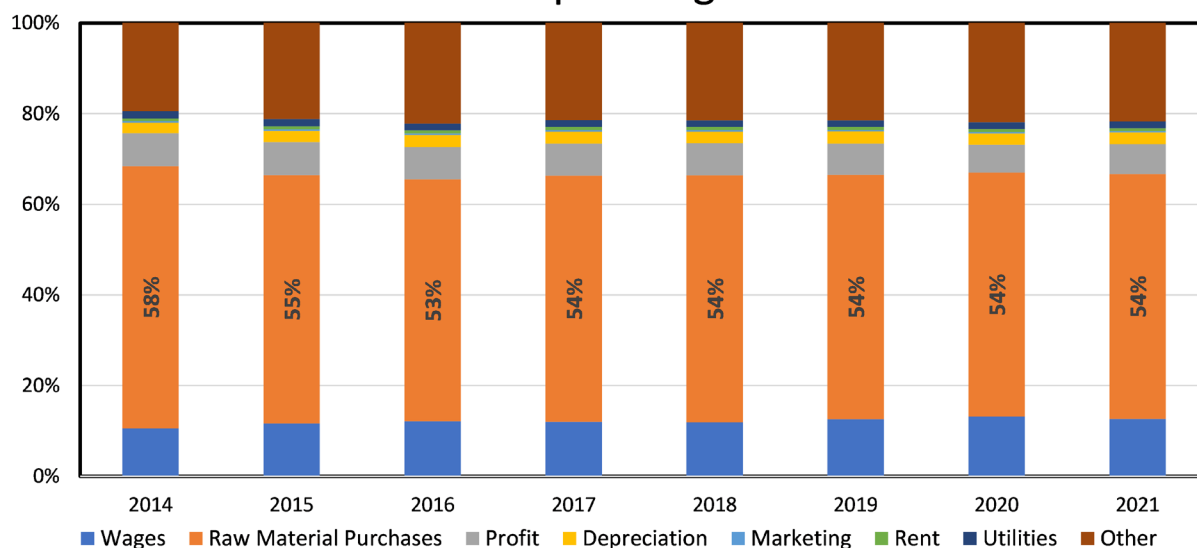


Figure 1. Sawmill operating costs components
Source: IBISWorld industry research reports

If we add a 50-mile buffer around each mill and treat them as the primary source of timber, it's not surprising to see that there will be a lot of buffer zones crossing the state's boundary. For illustration purposes, only seven

buffer zones are marked on the map. If we factor in accessibility and harvestability, harvesting timber across state boundaries becomes commonplace. Timber purchased from other states will be recorded as the import

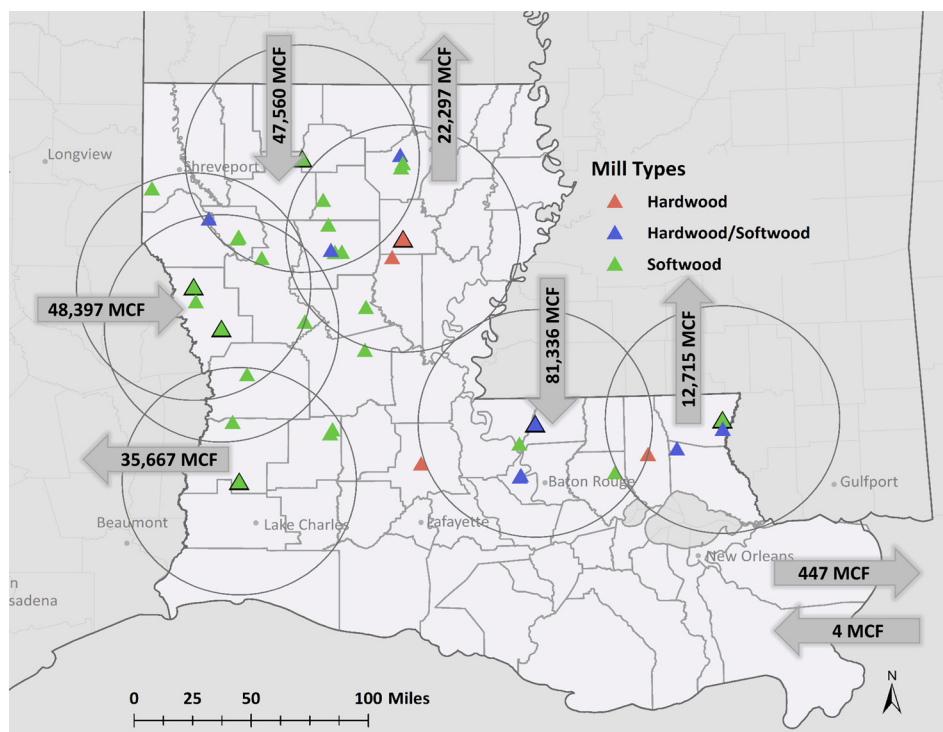


Figure 2. Industrial roundwood movement, Louisiana 2020
Source: TPO; Visualized by Huizhen Niu

volume in TPO surveys. Figure 2 also explains why Louisiana's domestic trading partners are mainly our neighboring states. A similar concept can be applied to explain our exports. Sawmills in our neighboring states that are close to Louisiana's border may prefer to buy logs from our state when the hauling and cutting costs exhibit a comparative advantage in Louisiana. If this is the case, timber purchased by other states will be recorded as the export volume in TPO surveys (Figure 2).

In summary, importing or exporting timber doesn't mean there is not enough timber to sustain the existing mill demand, but it's quite the opposite. The timber resources are abundant. The South is known as the "wood basket." Sawmill/loggers can choose the resources that are more accessible and available, to reduce the operational costs and maximize their profit.

Dr. Jinggang Guo is a forest economist with the LSU AgCenter.



Graysen Wallace, 9th grader, uses a dibble to plant bare root seedlings in a detention pond located in Slidell, LA.

Adopt-a-Pond program, incorporating forestry into stormwater management programs

By Whitney Wallace

Youth are being engaged as citizen scientists to help build local knowledge all while learning about natural resources and the importance of urban forest ecosystems in their communities. A new urban natural resources stewardship program is gaining momentum in Southeast Louisiana.

If you are from Louisiana, you have most likely experienced flooding events from severe weather such as hurricanes, or increased run off from development during heavy rains, and you are familiar with the term stormwater management. Stormwater basins such as detention or retention ponds are constructed depressions in the ground designed to temporarily store stormwater allowing slow release to local waterways. Many communities use these systems to improve water quality through the sedimentation of particulate matter. However, stormwater basins have normally been covered with turf which leads to increasing maintenance and costs. Some management districts have decided to promote a different approach — the use of naturalized



Students from Pitcher Junior High planting trees.

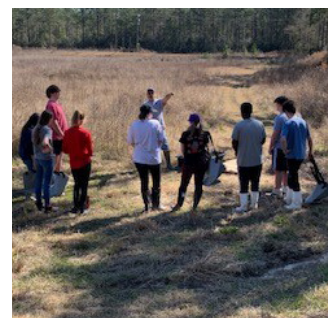
basins containing wetland plants, micropools and trees. St. Tammany Parish utilizes these natural methods and incorporates their youth to help.

What began as a small pilot program quickly evolved into a mixture of high school and junior high students bringing what they learned in the classroom to the field. The students test water quality and plant trees in parish stormwater ponds. They record their findings for the assigned ponds and share

the data with parish officials. You may ask, “Why trees?” The decision to plant trees was made to support parish efforts to increase tree canopy due to huge losses after devastating impacts from hurricanes and the pressures of development.

This multiyear project, called Adopt-a-Pond, began with students from Pope John Paul High School, Slidell Junior High, St. Tammany Junior

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Students from Fontainebleau High in Mandeville, LA plant seedlings of native tree species that are adapted for basins along a grid.

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High, Fontainebleau Junior High, Boyet Junior High, Madisonville Junior High and Covington High, just to name a few. Throughout the winter months, you will find students testing water quality and planting native saplings within designated ponds. Students first learn in the classroom how trees add valuable services including the reduction of water temperature through shading, enhancing wildlife habitat, water transpiration and community aesthetics.

Students learn about the potential benefits that these trees can provide in stormwater management such as improving compacted subsoils in stormwater systems through root growth and how higher transpiration rates of wetland adapted species could also contribute to the reduction of stormwater volume, which poses a challenge for most municipalities.

This program has been developed to not only assist in mitigating flooding through evapotranspiration, improve water quality, lower temperatures and provide habitat for wildlife, but to also add quality of life for residents all while engaging students in hands-on learning and a sense of community stewardship.

St. Tammany Parish Landscape and Parkway Manager Johnn “Spaff” Goodnow, who founded the program, is usually found on site at every student field trip to lend hands-on support for the tree planting portion of the program. With the help of Louisiana Sea Grant agent Carol Franze, St. Tammany Parish Government Engineer Elizabeth Smythe St. Tammany School Board Curriculum Coordinator Shannon Leger and AgCenter agent Whitney Wallace, the group passes out dibbles to plant the seedlings and explains how to arrange the seedlings on a grid, starting at the top and working down to the water. The students plant native species well adapted for the basins which contain a mix of live oak, cow oak, sweetbay, nuttall oak, overcup oak, pond cypress, cypress, crab apple or plum trees within the pond.

In 2018, AgCenter agent Whitney Wallace joined the program to help add additional material for forestry and wildlife aspects. Students take part in plant and wildlife surveys which include taxonomic guides, wildlife guides including pelts, and wildlife tracks to help document community development over time. Previously planted saplings will be located, identified and monitored for survival and growth.

The best part of this program is when you get to see the youth get

enthusiastic. When they are ankle deep in mud and water planting trees and discovering tracks or wildlife, they start to correlate the classroom material, and you see it click. They then can tell you how tree roots will grow to eventually pull up the nitrates from animal waste, the phosphorus from fertilizers from stormwater runoff and what animals are using these developed habitats.

Because the program is multi-year, new students are brought back the next year and will retest water quality. They use this data over time to compare and contrast and see how well planting the trees has really aided to mitigate the negative impacts of urbanization. Between 2018 and 2021, student volunteers planted approximately 27,000 trees. Wallace says the goal of this program is to not only help restore the tree canopy in St. Tammany Parish and develop an engaged citizenry, but perhaps spur youth interest in a natural resource career path such as forestry, wildlife or ecology. Adopt-A-Pond is a project led by St. Tammany Parish Government in collaboration with St. Tammany Parish Public Schools, as well as Louisiana Sea Grant and LSU AgCenter Youth Wetlands Programs.

To learn more about this program, contact Whitney Wallace at wwallace@agcenter.lsu.edu.

Part 2 of Forest Landowner Basics: The value of timber cruises

By Robbie Hutchins

As described in Part 1 of our Forest Landowner Basics series, a timber cruise is a statistical sample conducted by a forester that is designed to locate and estimate the quantity of timber on a specific area of land at a specific point in time. During a cruise, foresters record different attributes of the individual trees growing in the designated sample areas, including the species, size (diameter at breast height and height), the tree's quality or grade and the tree's expected product type or use. During a cruise, foresters can also gather useful information about the tract, including spatial data for creating maps of the property, and they may assess wildlife habitat conditions, survey for endangered species or other nontimber resources (e.g., medicinal plants), look for signs of illegal activities (e.g., timber theft) and record many other details the landowner may want to know about their stand.

Since a timber cruise is basically a snapshot of our stand, it is logical that we should get our timber cruised intensively at each important milestone for the stand. The first important milestone is within one year of acquiring the tract. This cruise should happen whether the forest land was purchased or inherited. This initial cruise is important because it gives you the information you need to develop a management plan for the stand, and it provides information you need to determine your timber basis for the tract. In Part 2 of the Forest Landowner Basics series, we'll take a closer look at what exactly a basis is and why

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establishing basis is so important to forest landowners.

Simply put, basis is the amount of money invested to acquire a tract of forest land. Basis includes all acquisition costs including the purchase price, legal costs, cruising and appraisal costs, title searches, title insurance, survey costs and any other costs associated with the purchase. Since timber has a unique value on every tract of forest land and the land has a unique value on every tract, the Internal Revenue Service allows forest landowners to divide the total basis for a tract of forest land into timber basis and land basis. The timber basis is the cost of the timber, fair market value, at the time of acquisition plus any other costs directly associated with the acquisition of the timber. The land basis is the cost of the land, fair market value, plus the value of improvements on the property plus any costs directly associated with the acquisition of the land. For forest land acquired by inheritance, the IRS allows the new owner to establish a stepped-up basis for both the timber and the land

based on the fair market value of both at the time of inheritance. Please remember that proper documentation is crucial when calculating initial basis and making adjustments to your basis during your ownership.

Now that we know what basis is, we will look at two of the benefits of establishing timber basis on a tract and why basis is so important. First, from the standpoint of the IRS, timber basis is the documented cost basis a landowner has in the timber. In the event of a timber sale, the income tax a landowner must pay is the difference between the price paid to a landowner and the timber basis the landowner has in the harvested timber. For example, if a landowner is paid \$27 per ton for pine sawtimber in a pay-as-cut sale on a tract and the timber basis on the tract is \$25 per ton, then the landowner is only responsible to pay taxes on the gain of \$2 per ton. However, if initial timber basis has not been calculated the IRS treats the entire \$27 as profit and the landowner is responsible for paying income taxes on a gain of the entire \$27 per ton. To conclude our example, the tract our landowner owns is 40 acres and the harvest averaged 60 tons, two loads, per acre of pine sawtimber. If the revenue was taxed at the current capital gains rate of 15%, having a documented basis saves our landowner \$9,000 in federal income taxes. From our example you can clearly see the difference the having a timber basis makes to your bottom line.

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A close-up photograph of a tree trunk showing significant damage from laurel wilt disease. The bark is dark brown and deeply fissured. Large sections of the bark have been peeled away, revealing the underlying wood. The exposed wood shows prominent vertical streaks of reddish-brown color, which are the result of vascular staining. The staining is most intense in the areas where the bark has been removed, creating a stark contrast with the lighter, uninfected wood. The overall texture of the bark is rough and irregular.

Laurel wilt disease: The demise of sassafras and other species within the Lauraceae family

Vascular staining caused by laurel wilt disease. Photo
by Ronald F. Billings, Texas A&M Forest Service.

By Crawford “Wood” Johnson, U.S. Forest Service

In 2002, an otherwise unremarkable little brown beetle was detected for the first time in North America in an insect-monitoring trap near Port Wentworth, Georgia. The southeast Asian species, eventually identified as *Xyleborus glabratus*, had presumably just hitchhiked across the Pacific Ocean in wood-packing material on one of the many commercial freighters that arrive each year in the U.S. Our subject would soon be added to the growing list of non-native beetles intercepted annually at U.S. ports of entry, but its name would not simply fade into obscurity.

One short year later, many in the area reported declining and dead redbay (*Persea borbonia*). Reports stated the leaves of seemingly healthy trees would wilt within days, turn brown, but then persist on branches for weeks or months, as if they meant to ensure the world didn’t forget them. Emerging redbay ambrosia beetles were repeatedly collected from dead and dying redbay, and the connection was soon realized between the widespread redbay mortality and the recent arrival of *X. glabratus*. Our subject was later christened with the benign-sounding common name “redbay ambrosia beetle,” but as its list of hosts increased, so would its notoriety.

The redbay ambrosia beetle is now considered the principal vector of laurel wilt disease. After locating her host, the foundress redbay ambrosia beetle oviposits eggs at the termini of multiple branching galleries within the sapwood layer of the xylem. During gallery construction, she deposits spores of the fungus *Harringtonia lauricola* (formerly *Raffaelea lauricola*) carried within specialized pouches located in her mandibles. (The ambrosia beetle group is named for its association with the symbiotic fungi these beetles carry). The mycelium of *H. lauricola* begin decomposing the xylem tissue surrounding the galleries, and in doing so, concentrate nutrients from the otherwise poor food source for the developing beetle larvae. In its native range where it coevolved with Asian Lauraceae plant hosts, the redbay ambrosia beetle exhibits a strong preference for and primarily colonizes dead and dying trees and shrubs. Outside of its native range, however, it locates and kills otherwise healthy Lauraceae hosts. The precise manner by which laurel wilt disease kills its host is thought to be



Adult redbay ambrosia beetle. Photo by University of Florida, Institute of Food and Agricultural Sciences.

caused by a rapid decrease in hydraulic conductivity due to the occlusion of xylem vessels by tyloses and gel formation in response to infection. This is almost like the exaggerated immune response expressed by people infected during the 1918 influenza pandemic.

Laurel wilt now occurs across the southeastern U.S., extending from Virginia west to Kentucky, south to Arkansas and Texas, and east to Florida. Mortality has been reported in additional Lauraceae hosts occurring in North America, including sassafras (*Sassafras albidum*), swampbay (*Persea palustris*), spicebush (*Lindera benzoin*), pondspice (*Litsea aestivalis*), camphor tree (*Cinnamomum camphora*) and the economically important avocado (*Persea americana*).

Sassafras is among the more desirable native horticultural and urban trees on this list, being tolerant of poor soils and having a restricted growth form and outstanding fall colors. It is widely distributed across the eastern U.S., occurring from Maine to Michigan and Texas to Florida (Griggs 1990), and is most abundant in the Ozark regions of Missouri and Arkansas, the Ohio River Valley and the Appalachian Mountains (Randolph 2017). In the eight years since laurel wilt was first detected in Union Parish,

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Good branch angles versus bad branch angles

By Keith Hawkins

Homeowners tend to take the health of trees for granted until the tree fails and causes damage. Trees with both defects and the ability to hit people, homes, fences, power lines or other improved values are considered hazard trees. Professional arborists are trained to evaluate trees for the potential to fail, and the evaluation process can be highly technical.

However, homeowners should look at their trees for cavities and fungal growths because these are obvious to see. Other defects are more subtle and required a trained eye for careful examination.

One place that a homeowner can check their trees easily is at the branch angles. The basic question to ask is, “Is the branch angle U-shaped or V-shaped?” A strong branch angle is U-shaped because there is solid wood attaching the branch to the trunk.

If a homeowner observes a V-shaped branch angle, then that branch has a high probability of failing because there is included bark between the branch and the tree trunk.

In Figure 2, a section from a pecan tree has deep included bark causing a poor attachment with the trunk. As both the branch and trunk grow diametrically, there is pressure on this attachment and splitting will result.

If a small tree has a V-shaped angle, the homeowner can



Figure 1. Both specimens have U-shaped branches with good wood attachment. The specimen on the left is from a pecan tree, and the specimen on the right is from a black cherry tree. Note the small bark inclusion at the red arrow in the black cherry. Photo by Keith Hawkins.



Figure 2. This section from a pecan tree shows a deep V-shaped angle with a major bark inclusion at the red arrow. Photo by Keith Hawkins.

prune out the branch with this poor attachment, and the tree's structure will be improved. If the tree is large with this weak branch union, a professional arborist should be consulted about practical solutions, especially if a home or other improvement is a target of tree failure.

To find a state licensed arborist, visit the Louisiana Horticulture Commission's page at <https://www.lhaf.state.la.us/lhaf-programs/horticulture-programs/louisiana-horticulture-commission/>. From there, choose “Arborist” in the “Licensed Horticulture Professionals” list to see a recently updated list of arborists by parish.

Second, and more important in the event of a catastrophic loss of timber from a storm or fire, timber basis is the primary factor that determines whether a landowner can claim a casualty loss deduction on income taxes. According to IRS rules, “a deductible casualty loss for timber held mainly for business purposes is the smaller of the adjusted basis of timber and the difference in the fair market value of the timber immediately before and after the casualty.” What does this

mean in real terms? If a landowner had no documented timber basis on a tract the IRS rules declare that the timber basis in the tract is zero. Since the IRS rules for a casualty loss deduction say a landowner is only entitled to deduct the lesser amount, a landowner would have no casualty loss deduction for lost timber since zero is the lesser number. Yikes!

Our world and our forests continue to change, sometimes at an

alarming rate. The good news for forest landowners is that there are many knowledgeable people who can help you navigate through change. In Part 3 of our Forest Landowner Basics series, we’ll cover how professional foresters can help us meet our goals and what we should consider when selecting a forester for the job. Stayed tuned!

Robbie Hutchins is a forestry extension agent in central Louisiana.

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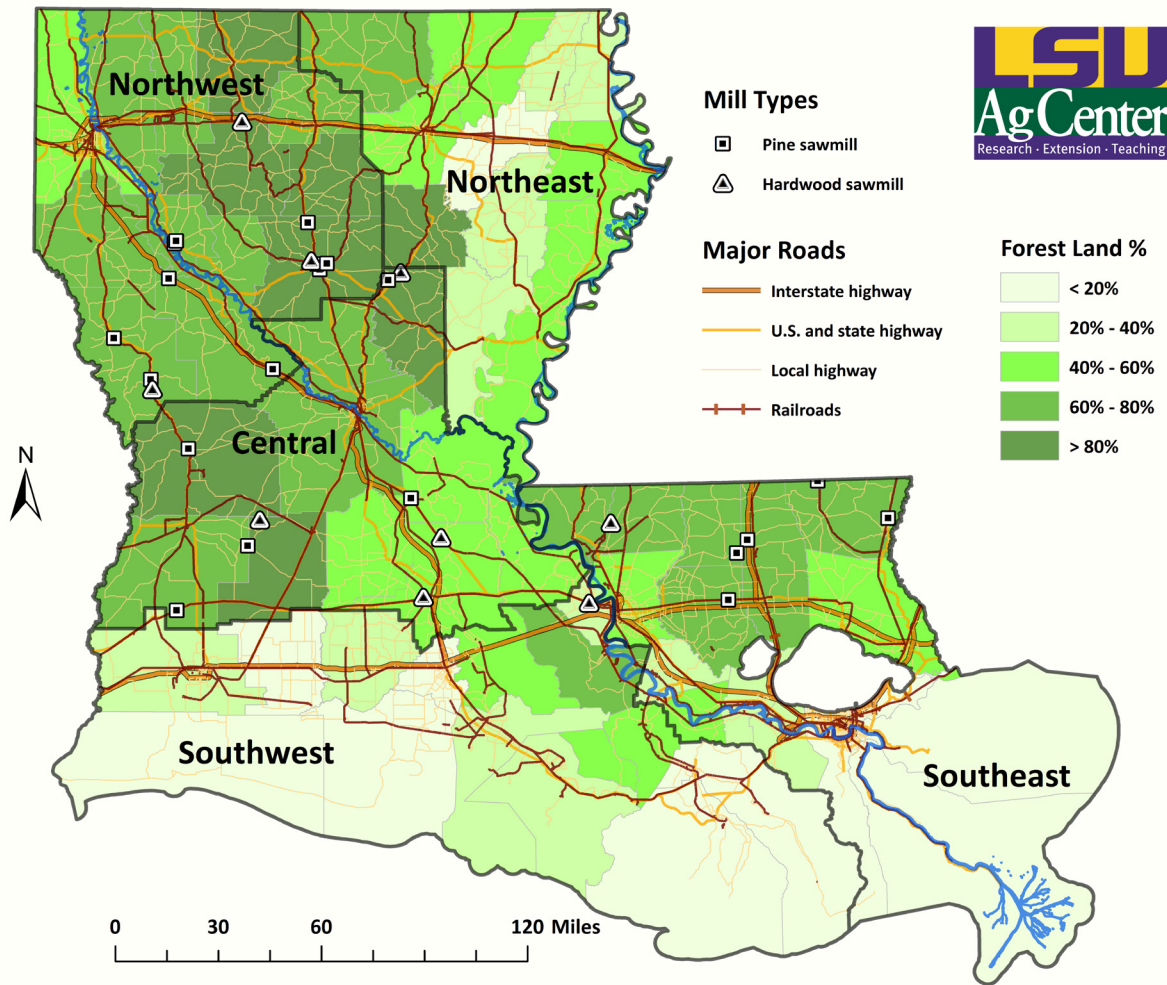
Louisiana, the disease has burned through swampbay and sassafras throughout most of the northwest and central parishes. It’s known to occur in East Feliciana Parish in southeast Louisiana and is likely more widespread in the Florida Parishes as well but has not yet been reported. Monitoring studies where laurel wilt is established in Georgia have found mortality rates among sassafras populations approaching 80%, and surveillance of sassafras in central Louisiana where laurel wilt is present has indicated similar rates of mortality. Near this author’s home in Grant Parish, the only remaining living sassafras are the seedlings and small saplings less preferred by the redbay ambrosia beetle, and even those seem to suffer eventually. And unfortunately, it is now the norm to see brown-topped swampbay trees in the bottoms that drain the reestablished longleaf savannas of the Kisatchie National Forest.

Research on the cold tolerance of redbay ambrosia beetles suggests that 48% of the U.S. sassafras population will not experience sufficient cold to restrict laurel wilt distribution, and urban areas and forests with high sassafras abundance will experience significant rates of mortality. The removal of sassafras from forests of the U.S. will be a significant economic, ecological and cultural loss. Sassafras has some commercial value in southern forests, is a host plant of multiple native pollinator larvae, and provides forage for wildlife. Sassafras also has a unique cultural history and value, as Native Americans and early settlers sought it out for its medicinal properties and as a food additive (think filé gumbo, repeated in the voice of Hank Williams, Sr.).

So, is there any recourse? Tree infusion and injection systems using

fungicides are a relatively safe and effective means for preventive treatments while significantly reducing non-target risks. Simple, pressurized systems used to assist in infusing products, including propiconazole, through shallowly drilled ports will effectively prevent laurel wilt in sassafras and redbay for at least one year if trees are treated prior to expression of disease symptoms. But this is only economical for high-value trees, and retreatment annually is necessary. If one seeks to protect such a tree, seek professional advice from your local LSU Extension agent or a licensed professional arborist for more information. As the sun potentially sets on another American tree species, we can only hope that some may prove resistant or tolerant to this devastating disease, and we, or our grandchildren, will read about that one day.

Sawmills of Louisiana



Source: LSU AgCenter extension team compilation; Visualized by Huizhen Niu

2022 Louisiana sawmill locations

By Jinggang Guo

Louisiana is home to 29 sawmills, with 20 softwood sawmills (including six mixed sawmills) and nine hardwood sawmills. These sawmills play a crucial role in shaping the economy and landscape of Louisiana. The sawmill industry provides direct employment for almost 2,000 people in Louisiana and contributed \$662 million to the state's economy.

Selecting the right location for a sawmill is a rather complicated process. Tree species, site productivity, market characteristics and logistical considerations all come into play in determining where to build a sawmill facility. This map shows that a large portion of sawmills is situated in the northwest and central areas of the state

where timber resources are abundant. When taking a closer look at the map, we can find these facilities usually are located adjacent to the highways or railroads. The map confirms that accessibility and availability of timber resources are the two main determining factors in the location of sawmill facilities.

The main purpose of this map is to help landowners find mill facilities and support our state's timber industry. It also allows potential new sawmills to identify competitors and avoid the potential competition despite the fact that the sawmill and wood production industry in Louisiana has remained at a relatively low level of competition for a while.

Zoonotic Diseases: Get the Facts

Brucellosis is a contagious infectious disease caused by bacteria in the genus Brucella.

Impacts to Wildlife

Affects a variety of wild and domestic animals, including cattle, bison, and cervids (e.g., deer, elk).

Widespread in feral swine, which can infect other animals and humans.

Causes infertility, abortions, inflammation, and others; infected animals may look healthy.

Requires blood test to diagnose; there is no cure, but there are vaccines and a national eradication program for livestock.



Impacts to People

Symptoms include fever, chills, weakness, headaches, muscle and joint aches, among others; can result in long-term health problems.



Requires blood test to diagnose and treatment with antibiotics.

Recovery may take a few weeks to several months. If treated, death is rare.

Transmission

Occurs via direct contact with blood, fluid, or tissue from an infected animal.

Breathing in the bacteria may also cause infection.

Can also result from consumption of unpasteurized dairy products.



Prevention

Wash hands with soap and warm water for >20 seconds following any contact with live or dead animals or animal products.

Wear eye protection and disposable gloves when handling carcasses.

Use clean, sharp knives for processing.

Do not eat, drink, smoke, or dip tobacco while dressing game.

Cook meat until it reaches an internal temperature of 165 degrees; freezing, smoking, drying, and pickling does not kill the bacteria.

Do not feed organs or other scraps from wild animals to pets.



More Information

Louisiana Department of Health

Centers for Disease Control and Prevention

Louisiana Department of Wildlife and Fisheries



Source LSU AgCenter (www.agcenter.edu)

By Dr. Ashley Long, Dr. Christine Navarre, and Whitney Wallace with the LSU AgCenter.

Prescribed Burn Workshop with LDAF Certification

A woman wearing a red hard hat, safety glasses, and a full-body yellow protective suit is using a drip torch to ignite a fire in a grassy field. She is holding the torch with her right hand, and the flame is visible at the tip. A man wearing a silver hard hat, safety glasses, and a yellow shirt is standing behind her, observing the process. The background shows a line of trees and a clear sky.

LDAF Forester, Jay Meadows, guiding a teacher participant with a drip torch during a prescribed burn demonstration.

Background: In 1993, the Louisiana State Legislature passed Act No. 589 authorizing the Louisiana Department of Agriculture and Forestry (LDAF) to implement and administer the Louisiana Certified Prescribed Burner program. The statute states:

The application of prescribed burning is a land management tool that benefits the safety of the public, the environment and the economy of Louisiana. Pursuant thereto, the legislature finds that: Prescribed burning reduces naturally produced on-site vegetative fuels within wild land areas. Reduction of the fuel load reduces the risk and severity of major catastrophic wildfire, thereby reducing the threat of loss of life and property, particularly in rural and urbanizing areas.

Prior to the law being instituted, anyone conducting a prescribed burn was considered to be involved in an inherently hazardous activity according to state law. As such, if any damage was linked to the burn, the burner was automatically at fault and liable for the damages. Act No. 589 identified and defined a Certified Prescribed Burner and

instructed LDAF to conduct the needed training for burners to meet the standards to be identified as a Certified Prescribed Burner. The Act further stated that Certified Prescribed Burners are held to the same standards of proof of negligence in court as other professionals.

Why is prescribed burning important? Most of Louisiana's natural communities require periodic fire for maintenance of their ecological integrity. Prescribed burning is essential to the perpetuation, restoration and management of many plant and animal communities. On range land, coastal marshland, agricultural and forest land, prescribed burning improves the quality and quantity of herbaceous vegetation important for livestock production and wildlife habitat and aids in the harvest of sugarcane.

Why is training and certification important? Proper training in the use of prescribed burning is necessary to ensure maximum benefits and protection for the public. As Louisiana's population continues its expansion into rural areas, pressures from liability issues and nuisance complaints

inhibit the use of prescribed burning. The certification provides liability protection if a burn plan is followed.

How do you become a prescribed burner? To meet the standards for identification as a Certified Prescribed Burner, an individual must: 1) Have received either formal or "on the job" training in prescribed burning. (Formal courses are taught by the LSU Cooperative Extension Service: www.lsuagcenter.com.) And 2), have conducted five burns as the supervising professional. These standards include:

- Burn with a written Prescribed Burn Plan.
- Adhere to all Louisiana Voluntary Smoke Management Guidelines and Voluntary Best Management Practice Guidelines.
- Meet the Louisiana Notification of Burn directives.
- Successfully pass the certification exam with a score of 70% or higher.

Contact your area forestry agent for more details or to find out when scheduled workshops will be conducted in your area.

Figure 1. Longleaf burn demonstration in Tangipahoa Parish. Figure 2. AgCenter and LDAF personnel checking perimeter in St. Helena Parish after a field day burn workshop. Figure 3. New growth emerges one week after a prescribed burn in Tangipahoa Parish.





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topics/environment/forestry](http://www.lsuagcenter.com/topics/environment/forestry).

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