Timber Tales

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Jessie Cone, right, and Michael Blazier measure photosynthesis, respiration and water use of sampled branches. Photo by Michael Blazier.

Drought tolerance may be the key to future wood production

By Jessie Cone

The Southeast region of the United States is known as the "Wood Basket" and produces more timber than any other region. During 2011, Louisiana experienced one of the worst droughts ever recorded in the state. Widespread water deficits caused millions of dollars in agricultural losses. Climate scientists predict that harsh droughts will become more common in the coming decades. Pines planted today will experience increased climate variability over their 30-year rotation cycle. Producing drought-tolerant, highly productive plantations is essential to maintain economic growth in the timber industry.

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Hurricane Laura's impacts on La. forests

By Robbie Hutchins and Michael Blazier

Hurricane Laura had a major impact on forest landowners in southwestern and central Louisiana. Trees were uprooted and snapped off from the eye wall and associated "spin-up" tornadoes. In addition, tens of thousands of shade trees in the yards of homes and businesses have been downed or damaged. Damage assessments began shortly afterward, but efforts were challenging initially because of downed timber blocking highways and airport runways. It will take weeks to make an accurate assessment of the damage, and as of press time assessments have just begun. Forestry specialists with the LSU AgCenter are working with state and federal agencies and private industry in a hurricane response team to help with damage assessments and relief efforts. Our next issue of Timber Tales will provide much more information on Laura's impacts on our forests and forest products industry.

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A cooperative study between the LSU AgCenter Hill Farm Research Station and Louisiana Tech University was established to understand how to prepare plantations for future severe droughts. Planting drought-tolerant seedlings is one method to increase plantation drought resilience in newly established plantations. In established plantations, intensive thinning has been suggested as one way to allocate more nutrients and water to robust trees during drought. The current study investigates whether the negative effects of drought can be reduced by thinning and/or using drought-tolerant genotypes.

A pine plantation was established in 2005 with open-pollinated Louisiana seedlings (OP-LA), open-pollinated Carolina coastal plain seedlings (OP-756) and a clonal variety based on a robust OP-756 individual (C93). All plants, including loblolly pines, use photosynthesis to transform atmospheric carbon dioxide into carbohydrates that plants use for growth and development. We can detect whether a plant is experiencing drought stress by measuring its photosynthesis rate. Our study compares the net photosynthesis rate of each genotype to determine which can best maintain high carbohydrate production despite water deficits. We are creating artificial drought conditions to best understand how these genotypes respond to extreme drought events. To create the drought conditions, we excavated trenches to 6 feet deep around every study plot and installed a plastic liner in the soil to block the lateral flow of soil water. We then built shelters over the plots in early summer 2020 to block all rainfall within the study plots.

Prior to the simulated drought, both the OP-756 and C93 trees outperformed the OP-LA seed source in height growth. During a moderate drought in 2010, the C93 genotype displayed the most sensitivity to water deficits through a lower net photosynthesis rate. Despite the reported drought sensitivity, the C93 maintained its superior height growth. As of 2016, the C93 was the tallest tree, while the OP-LA was the shortest.

A view of the study site from above. White structures are blocking rainfall on some trees to measure their resilience to drought. Photo by Michael Blazier.

The superior growth rate of the C93 is evident. Future evaluations are needed to determine if it will continue to maintain high growth rates as severe drought becomes more common. The more conservative growth rates of the OP-LA trees are thought to be an adaptive behavior to reduce drought mortality. Following the study's extreme simulated drought in early June, the C93 trees again displayed the greatest drought sensitivity and lowest net photosynthesis rates. The OP-756 and OP-LA trees had similar photosynthesis rates and equal drought tolerance. It has not yet been determined if the more conservative strategy of the OP-LA will allow for greater survival and growth during extreme droughts. As the study continues through the remainder of the year, it is expected that the C93 genotype will be the most vulnerable to water deficits. If this results in higher mortality for the C93 trees, landowners may need to rethink prioritizing fast-growing clonal varieties over more drought-tolerant seed sources. The benefits of intensive thinning have not yet been determined, but it is anticipated that these effects will manifest as water becomes more limiting.

— Jessie Cone is a graduate student at Louisiana Tech University working with . Joshua Adams at Louisiana Tech University and Michael Blazier at LSU AgCenter Hill Farm Research Station.

2020: A strange year for prescribed burn training

Starting a test fire. Photo by Keith Hawkins

By Keith Hawkins

The 2020 Prescribed Burn Workshop almost did not happen because of the strange times we are in. If Louisiana had not moved to Phase 2 of the White House plan for reopening toward a more normal life, then this training would not have occurred. The failure to have this event would have prevented some citizens from becoming Louisiana certified burn managers (CBMs).

When this event occurred, the host of this training, the Louisiana Ecological Forestry Center (LEAF Center), arranged for wider spacing of student seating and for plenty of hand sanitizer. The rules for spacing required fewer students to attend. Normally dozens of students would have participated in this training.

The LEAF Center, formerly Hodges Gardens State Park, recently joined the LSU AgCenter, the Louisiana Department of Agriculture and Forestry, and the Louisiana Department of Wildlife and Fisheries as a partner for this event. The A. J. and Nona Trigg Hodges Foundation created the LEAF Center to promote both conservation and ecological education of the longleaf ecosystem in central Louisiana. Rodney McKay is the property manager of the LEAF Center and was the hospitable host for this prescribed burn workshop.

Niels de Hoop, LSU AgCenter forestry professor, was the lead instructor. The classroom topics included reasons for controlled fire, fuels, burning techniques, proper tools, optimal weather conditions, smoke management, liability management, planning, fire behavior and more. This training begins the process of becoming a Louisiana certified burn manager. The completion of five prescribed fires and their documentation completes the process.

The centerpiece of the classroom segment of the training was the preparation the burn plan, a vital document for liability protection. The plan also included the steps for effective smoke management. The highlight of the week was using the training and burn plan to “put fire on the ground.” McKay provided two potential burn sites to provide large-scale “live fire” training.

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At the pre-burn meeting, weather and team assignments were discussed. After evaluating the weather onsite, McKay and de Hoop advised the students that the small 1-acre site would be the burn site. McKay discussed his preparation for the burn site and offered his guidance to execute the burn. After meeting onsite, students made a firebreak for a test burn with hand tools and learned the practical use of these tools.

Once the test site was prepared, the test burn started. Students and collaborators observed the wind and its effect on fire behavior. After these observations, McKay and de Hoop conferred with the students and decided against burning the entire site because dry duff was going to endanger desirable old longleaf pines. These trees are important to the LEAF Center for aesthetic reasons, and McKay wanted to preserve them for future center visitors.

If you want to be on the "sooty boots" email list to receive updates about future prescribed burn workshops, please contact Keith Hawkins, area forestry agent, at 337-463-7006 or khawkins@agcenter.lsu.edu.

— Keith Hawkins is an area forestry agent for the LSU AgCenter Southwestern Region.

Some positive outcomes resulted from this week of training included:

- Seven people passed the classroom stage of becoming a CBM.
- The test burn counted toward one of the five burns required to be a CBM.
- Collaboration with the Louisiana Ecological Forestry Center.
- An important part of prescribed burning is knowing when not to burn. For the first time in 10 years, a burn was called off at the prescribed burner workshop because of unsuitable conditions, and this decision represented a teachable moment.

Louisiana Stumpage Report

Second Quarter 2020

The most recent stumpage price report indicated a slight price increase in pine sawtimber, no change in pine pulpwood and declines in all other products in the second quarter of 2020, the first affected by COVID-19 effects on the economy.

Product Class	Price per ton	% Change from Prior Quarter
Pine sawtimber	26	+4
Pine chip-n-saw	16	-16
Pine pulpwood	8	0
Oak sawtimber	41	-7
Hardwood sawtimber—mixed grade	31	-14
Hardwood pulpwood	8	-20

— State average stumpage prices ($ per ton) of Louisiana.
— Michael Blazier, professor and forest management specialist Hill Farm Research Station, LSU AgCenter School of Renewable Natural Resources.
— This document is intended for use by forestry stakeholders of Louisiana. The source of these prices is proprietary in nature; prices are rounded per agreements to disseminate them to the public.

News from the urban side

By Hallie Dozier

This has been quite a southern summer in Louisiana — in its fullest, finest, steamiest and stormiest! Despite the pandemic, Louisiana arborists have kept busy doing what they do every summer, pruning and removing trees that could be hazards during storm events. Now that Hurricane Laura has left its mark, many are pitching in with storm cleanup. Licensed arborists truly take on the role of emergency workers after a storm, getting trees off buildings and roadways, and speeding the rate of recovery and restoration. Storm cleanup work is truly some of the most difficult work a tree care professional can do. The hazards of the work include many hidden dangers, such as downed-but-energized power lines, heat exhaustion, fatigue and, perhaps most of all, the unpredictable dynamics of trees in lying in a tangle or perched in a precarious position. These hazards are compounded by the pressure and the rush to get the job done so others can come in and begin the recovery.

In the rush to clean up, recover and restore, however, it is critical to remember that commercial tree work — removals and pruning for a fee — is a state-licensed profession. During a state of emergency, such as following a hurricane, the area will be flooded with people looking to make money; some have licenses, but many others do not. It is important to check before you hire! A state-licensed arborist has proven competence in technical and applied knowledge, and he or she will carry insurance that covers damages that may occur on the job. This means that it is in the best interest of the property owner to hire out tree work only to a state licensed arborist. Check and verify the arborist's credentials by calling the Louisiana Department of Agriculture and Forestry at 225-952-8100 or download the LDAF Business Search app from Google Play or the Apple App Store.

Tree care workers remove a severely decayed water oak that failed during a storm in Baton Rouge. Photo by Hallie Dozier.

The good news for us is that there are over 500 licensed tree care professionals across Louisiana who have been doing storm preparation work all summer to prevent damage. Now, many of them are helping with cleanup in the western and central parts of the state. The bad news is that when the storms start rolling across the Atlantic or brewing up in the Gulf of Mexico, home and business owners turn a fearful eye to their trees, and fear — founded or unfounded — is a powerful motivator. The fear can sometimes, rightfully, lead to unnecessary tree removals. Did I say "rightfully?" The sad truth is that many of the older trees in our urban and residential landscapes have been neglected and abused for decades and truly can pose a legitimate threat to life and property. On that day when a neglected tree — especially large growing species such as oaks and pines — fails and causes damage, all trees suddenly seem dangerous. The pity is that, had the trees not been taken for granted, abused and neglected

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Conservation easement landowners' willingness to adopt forest management practices

By Ana Gutierrez Castillo

Almost three decades have passed since the establishment of the first bottomland hardwood plantations through the USDA Natural Resources Conservation Service Wetland Reserve Program (WRP) and Wetland Reserve Easement (WRE) in Louisiana. The WRP and WRE are voluntary programs that assist with technical and financial support to landowners who are interested in conserving land as wetlands or converting agricultural land to bottomland hardwoods. Thanks to these programs, many of Louisiana's agricultural lands (approximately 300,000 acres) have been converted to bottomland hardwood forest habitat. These forests are home to many forest-dependent wildlife species and provide valuable natural services, such as greenhouse gas and nitrogen mitigation and recreation.

However, as with most forests, sound management is necessary to maintain these species and natural services. As these plantation forests mature, they shade out the understory, decreasing forest health and reducing suitable habitat for wildlife. To improve forest conditions, landowners can adopt forest management practices, such as thinning. Thinning reduces stand and canopy cover density, which allows light to reach the understory. This encourages the growth of a healthier forest stand structure and the production of ground vegetation essential to meet wildlife foraging and nesting needs.

Achieving a large-scale impact by thinning the conservation easements is challenging. It requires

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by their owners, they may have been retained in the landscape for decades more to come.

I recently witnessed the result of fear when a storm blew through a Baton Rouge neighborhood and topped out a seriously decayed water oak (*Quercus nigra*). There is no doubt this tree had to go, but the trauma of the storm and the roof damage led the homeowner to also remove three other large trees "just in case." These other trees were solid and strong and did not need to go. It did not help that the company (unlicensed scoundrels, by the way) gave the owner a rock-bottom price to wreak all this damage. That is to their shame, but it is also to the shame of the homeowner to ask for healthy, structurally sound trees to be removed unnecessarily. Fear, including unfounded fear, can lead to unnecessary tree removals, which damages urban forests and diminishes the benefits we gain.

For more information about the class schedule and to register, please visit www.lsuagcenter.com/arborist for schedule updates or contact Hallie Dozier at hdozier@agcenter.lsu.edu.

Trees are large, heavy, potentially hazardous, beautiful and beneficial organisms that need year-round care and attention. But they do not ask for much. It could be as simple and effective as laying down some mulch and ensuring the trees are adequately watered during dry spells. Or it may be as complex as hiring someone trained to devise a tree hazard mitigation plan that includes annual reevaluation and assessment. The fact is that trees stand up and they will, eventually, fall. It is to us as owners to determine how long "eventually" lasts. With thoughtful and minimal care, trees can remain healthy and sound longer, benefiting the owner and the larger landscape.

On another topic, this one close to everyone's hearts, the COVID-19 pandemic continues to affect all aspects of life here as it does elsewhere in the country and around the globe. Louisiana's first COVID-19 case was announced early in March, just a few weeks following Mardi Gras. Quickly thereafter, the whole state came under stay-at-home orders, meaning that, among other things, the spring continuing education unit (CEU) programs for state-licensed arborists were canceled. This included the LSU AgCenter's first night-class series for CEUs in New Orleans. Normal operations are still in a flux, even though we entered our Phase 2 in early June. That said, at this time the LSU AgCenter is offering in-person CEU classes for licensed arborists in Baton Rouge, New Orleans, Pollock, St. Martinville, Shreveport and Homer this fall. We also are offering online opportunities to earn CEUs.

— Hallie Dozier is an associate professor in the LSU AgCenter School of Renewable Natural Resources.

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the cooperation of hundreds of landowners whose characteristics and ownership objectives are diverse. Understanding the preferences of these landowners is essential for conservation planners to tailor management decisions accordingly. To address this knowledge gap, the LSU AgCenter Department of Agricultural Economics and Agribusiness, with the support of the USDA NRCS, conducted a study to gain insight into conservation easement landowners' preferences for their forest management.

A mail survey was sent to 660 Louisiana landowners with reforested easements enrolled in the WRP/WRE programs. A total of 289 landowners participated in the study. The participating landowners collectively controlled nearly 117,000, accounting for 35.6% of Louisiana's total WRP/WRE acreage. The average forest size within the easements was 431.5 acres, ranging from 4 to 4,700 acres. Landowners are predominately male (91.3%), 55 years or older (84.7%), and have received a bachelor's degree or higher (54.3%). Landowners' ownership objectives were measured on a 5-point scale ranging from extremely important (5) to not at all important (1). Landowners placed the highest importance to the recreation value their easement provides (60.2%). This objective is followed by family heritage (49.5%), restoring and protecting wildlife habitat (47.4%), long-term investment (30.4%) and providing fee-based recreation (12.5%).

Landowners were presented a hypothetical scenario to manage their forested easement to improve forest health and wildlife habitat quality through conducting NRCS-approved thinning operations at no cost to the state or federal government. These forests will have to be thinned the same way most forest landowners get their forests thinned, by contracting with a wood buyer at a privately negotiated price. About 72% of landowners were willing to thin their forested easement. Of those who prefer not to adopt thinning, 37.5% indicated that thinning activities would interfere with their personal use of the land.

A recently thinned cherrybark oak Wetland Reserve Program forest in northeastern Louisiana. Photo by Michael Blazier.

A few factors played a significant role in landowners' dispositions for managing their forested easement: access to information about the benefits of thinning, ownership characteristics (e.g., length of land ownership) and objectives (e.g., family heritage), participation in recreation activities, and management characteristics (e.g., past thinning intention and assistance from professional foresters). WRP landowners appeared to have a wide range of prices that would motivate them to thin the properties, which is similar to many forest landowners. This is a positive sign that these forests will still be managed to achieve the goals of the WRP/WRE programs.

The willingness of landowners to engage in forest management activities to enhance forest conditions is essential for the success of these restoration efforts. Outcomes from this study provide a first glance of easement landowners' preferences for the adoption of thinning in their WRP/WRE holdings. These findings serve as a potential tool to efficiently target and prioritize landowners who are willing to engage in management to enhance forest health and wildlife habitat quality. Specifically, findings suggest understanding nontimber thinning benefits and working with a forester helped lower payment requirements. This highlights the role professional foresters and extension play in landowners' management decisions. The information provided can support conservation planners' decision-making to match easement landowner preferences with the conservation and restoration objectives of the WRP/WRE programs.

— Ana Castillo is a graduate student working with Jerrod Penn and Michael Blazier of LSU AgCenter.

Celebrate your Cajun Christmas with Louisiana-grown Christmas trees

By Valerie West

Here in the Bayou State, we have a reputation for growing trees. But did you know that here in Louisiana we grow thousands of Christmas trees? Yes, even here, in a region of the country where ice and snow are rarely seen, Christmas tree farmers are working hard to make sure you and yours have real trees and fresh greenery for your holiday season.

So, why should you buy a freshly cut tree instead of putting up that old artificial tree this year? First, you will be supporting local businesses. Most artificial trees come from other countries, where they are mass produced. Second, many of our local tree farms offer a family-friendly experience. Imagine taking the family out to walk through a tree farm and pick out a tree — photo opportunities and memories to be made! Some farms offer additional activities for all age groups. Now imagine taking your family to the big box store. That's not as picturesque or as memorable, especially with everyone out doing their holiday shopping. Finally, after the holidays, a fresh-cut tree can be used for other things, such as mulch or wildlife habitat, either on your property or when donated to your town or wildlife refuge. The old artificial tree goes back into the attic

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for the mice to play on, accumulate dust and slowly degrade until you pull it back out next year, a little less nice looking each time until you throw it out.

Finding your Cajun Christmas tree:

Search the internet for local tree growers. If the name of the farm is blue with an underline, that is a link to the farm's website. Click on it for the most current hours and information.

ALWAYS call the farm or store BEFORE YOU GO. Many farms and lots can sell out of trees early in the season. Call to confirm their hours, whether they still have trees, if they have choose-and-cut or just precut trees, and what attractions or winter activities are available. All of these can change during the short Christmas season because of weather, demand and the farmer's business conditions.

DON'T DRIVE OUT THERE IF YOU CAN'T REACH THEM by phone or email or if you cannot find current information on the farm's website or Facebook page!

Make the most of your visit to the Christmas Tree farm

Tree farms may be a small family business, a small amusement park, or something in between. Many farms offer additional attractions to make your experience one to remember. These include: hayrides or wagon rides using either horses or tractors, Santa visits (usually on the weekends), refreshments, petting zoos and farm animals, gift shops, other greenery for holiday decoration, and tree accessories such as stands and disposal bags. Be sure to check and see if they have restrooms on site for the public. If you are planning a long trip to get a tree at a farm with no public restroom, a pit stop before heading to the farm may be in order.

For additional tips and links to Louisiana Christmas tree farms, visit www.southernchristmastrees.org or www.pickyourownchristmastree.org.

Pack for a day trip, bringing snacks, drinks and items to clean up from a fun day. Dress for the activity and the weather. If you are out taking your holiday card photos, you may also want to consider dressing for the occasion. Try to remember that this experience is outdoors and dress in something comfortable. Also, bring an outfit that you are not worried about getting dirty. Layered clothing may be needed if it is a really cold day. Extra socks are always a good idea. Closed-toed shoes are the best choice for this activity. Don't forget the camera. You may want to capture those memories you're making. Most everyone now has a camera built into their phones. So, don't leave home without it! Bring heavy gloves to protect your hands and a jacket or long-sleeved shirt to protect your arms if you are cutting your own tree and moving it to your vehicle. Bring a blanket along to wrap the kids in if they get cold or have wet feet. They can wrap up in the car and sleep all the way home.

Cutting, shaking and baling

Farms usually provide saws to cut your tree. They may let you cut it yourself, or they may cut it for you (possibly for a small fee). Some will let you choose the tree but not cut it yourself, so be sure to ask when you call. Most farms also provide wheelbarrows or other tools for transport. The trees have been living outside all year and may well have become home to spiders or other insects. Get the farmer to encourage these tenants to leave by shaking the tree on a mechanical shaker. Many farms also will bale (wrap) your tree for transport or bag it for no fee or a small fee. Many will wrap your tree and tie it on your car for you. You should you bring your own rope or bungee cords with you just in case they do not have rope or have run out.

Transporting your tree

If you are transporting your tree on the roof of your car, protect your car by placing a sheet of plastic or an old blanket over the roof to protect the paint and finish. No matter how you plan to transport the tree home, get the tree shaken and baled (wrapped) before loading it. Always get help if the tree is very large. Be sure to tie the tree down to your car or in the back of your truck and make sure it is secure by pulling on the tree and make sure it is tightly tied. Drive home safely! If you don't feel comfortable transporting your own tree, check and see if the farm will deliver the tree right to your front door before you go.

The nature of nature

A final word about fresh Christmas trees: Be sure to check your tree for wildlife. Louisiana Christmas trees, like all fresh Christmas trees, are grown in fields. Naturally, insects and animals may be found in your tree. Growers inspect the trees and do their best but can occasionally miss some critters. Give the tree a good inspection before cutting it and again before bringing your tree into the house. Look for egg cases, mouse nests and other potential bonuses, paying close attention, especially around the trunk and along the branches. Vigorous shaking usually takes care of these unwanted ornaments but double-checking never hurts.

— Valerie West is an extension agent in the LSU AgCenter Northwest Region.

Pre-planting herbicide practices and wildlife habitat enhancement

By Michael Blazier

Vegetation that is diverse in species composition and structure will generally support a greater amount of wildlife. In the lifetime of a forest, the earliest years after planting are characterized by relatively high vegetation diversity. With little to no tree cover, there is greater light availability to support many plant species. This extra light also means the soil is also more heated, which accelerates decomposition rates. Faster decomposition has a natural fertilization effect, releasing nutrients that further enhance plant species diversity and growth. However, this abundance in vegetation also hampers the success of replanting forests. Tree seedling growth and survival is significantly reduced when other vegetation is fast-growing and plentiful because it takes light, water and nutrients away from the seedlings. Essentially, wildlife looks at a site full of vegetation and sees food and cover, while a tree seedling "sees" a field of "weeds." This problem is most pronounced in the southeastern U.S. for southern pine species because pines are natural early colonizers of disturbed, cleared areas. Their relatively fast height growth is their tactic for getting above plant competitors, but often a small percentage of seedlings will survive to get above the weeds if left on their own to "duke it out."

To help pine seedlings get established, forest managers often do some sort of competition control. The most common pre-planting competition control techniques are applying herbicides and/or controlled (prescribed) burning. Although suppressing vegetation would seem to be at cross purposes with supporting wildlife, there are numerous ways in which competition control and wildlife habitat enrichment can be balanced. The objective of this article is to provide information on how this balance can be achieved.

Herbicides are one of several management options in the forester's "toolkit" for establishing forests. Combining herbicides in certain ways with other management practices helps with sustaining vegetation and wildlife diversity. Planting a good number and configuration of

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seedlings will provide ample trees for future harvests while keeping light available for a longer time for the benefit of vegetation and wildlife. For example, long-term research at the LSU AgCenter Hill Farm Research Station and other universities has shown the best number of loblolly pine seedlings to plant is between 400 to 600 trees per acre. Planting closer to 400 trees per acre will help with keeping light available for longer. Planting seedlings in what are termed rectangular spacings can further improve light availability. For example, planting seedlings on a square spacing of 10 feet by 10 feet results in 435 seedlings per acre. Planting seedlings in a rectangular spacing of 6 feet within each row and 17 feet between rows results in 427 seedlings per acre. This amount is nearly the same as with the 10 feet by 10 feet spacing, but with its wider rows it will be longer until tree crowns grow together and shade out the understory. Prescribed burning is another powerful pre-planting option that can be combined with herbicides to enhance vegetation diversity. Fire improves plant richness by enhancing soil nutrient availability and increasing soil pH. Research has shown that bird diversity is especially enriched by prescribed burning after herbicide application.

Herbicide applications can be conducted in ways to balance tree seedling survival with vegetation diversity. Tree seedling survival and growth is maximized by broadcast-applying a mixture of herbicides that suppress woody, grass and herbaceous vegetation for the first year after planting. This management approach is helpful when timber production is the primary objective, although research has shown that even the most aggressive herbicide treatments have relatively high vegetation and wildlife diversity three to five years after application. The most commonly used herbicides for southern pine management are imazapyr (Arsenal, Chopper), sulfometuron methyl (Oust), metsulfuron methyl (Escort), triclopyr (Garlon), and glyphosate (Roundup). The trade names provided here are the ones with which the herbicides were originally developed; there are also generic equivalents for each of them sold with different names. Each of these herbicides controls different species of vegetation, so they are often applied in mixtures to control a higher number of species with one application. However, these herbicides and others can be applied in ways that leave groups of vegetation species alone so wildlife can benefit while seedlings still gain some competition control.

For more information on this topic, contact Michael Blazier at mblazier@agcenter.lsu.edu.

— Michael Blazier is a professor at the LSU AgCenter Hill Farm Research Station and the School of Renewable Natural Resources. He is a forest management specialist.

There are several herbicide alternatives for sustaining vegetation for wildlife benefit in the years immediately after tree planting:

1. Apply herbicides in a band along the planting rows instead of broadcasting to the entire site; this must be done by tractor-, ATV-, or backpack-mounted sprayers.
2. To preserve herbaceous vegetation in the year after planting, do not apply sulfometuron methyl in the fall before planting or after planting or limit its application to a band along the planting rows.
3. Apply only imazapyr as a pre-plant herbicide. Imazapyr controls a diverse amount of hardwoods and grasses, but it will not affect blackberries and legumes, which are beneficial to wildlife.
4. If wildlife like turkey or quail, which prefer native bunch grasses, are a priority, a mixture of triclopyr and imazapic (Plateau) can be a good alternative. Triclopyr controls woody vegetation. Imazapic controls some woody vegetation, grasses and sedges, but it does not affect native grasses like big bluestem, Indiangrass and broomsedge. Imazapic also has no activity on several legume species.
5. If having a mixture of pines and hardwood trees is of interest, a mixture of fluazifop (Fusilade) and clopyralid (Transline) can achieve this goal. Fluazifop controls only grasses. Clopyralid controls some broadleaf and woody species, but it has no activity on pines, red and white oaks, hickory and green ash.

Each of these alternatives compromise some tree survival and growth relative to a broadcast application of a mixture of herbicides, but they are better for seedlings than a complete lack of competition control.

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