The Woodland Steward

Promoting the Wise Use of Indiana's Forest Resources

Presidents Message

The past two years have taught us many tough lessons about our personal health, society, economics, politics and even recreation. Trying to maintain "social distancing" and avoid crowded venues, many people flocked to the Great Outdoors. Federal, State and Local public properties, along with NGO's, Land Trusts, etc experienced significant increases in visitation. This sparked a renewed interest and appreciation for our "Natural Areas".

Just as we have been focusing on our own personal health to increase our chances of surviving this pandemic, maintaining healthy woodlands takes intentional management! Waiting until another drought, wind event or new invasive pest impacts your woods will likely make it more difficult to meet your objectives.

For thirty years, The Woodland Steward newsletter has reached out to Indiana Woodland owners with educational, science-based articles to help us better understand and manage our forests, prairies, and back yards. In 2020, "The Steward" was mailed out to over 28,000 woodland owners.

As we entered 2021, The Woodland Steward Institute experienced change as Dan Shaver stepped down from the Presidents position. I accepted the Presidents position, knowing that our diverse and experienced board members would support me as we strive to provide information that is timely and relevant to woodland owners in Indiana. My employment with the National Park Service, Indiana DNR and US Fish and Wildlife Service gave me experience in managing woodlands in all corners of Indiana. Much of that time was spent working with private landowners, where I started to understand how important privately-owned property was to our forest and wildlife resources. I have focused that desire to help private landowners through my forestry consulting business. In that regard, I look forward to serving The Woodland Steward Institute!

Please feel free to reach out to me or our Editor – Brian MacGowan if you have concerns, ideas or suggestions for this publication.

Sincerely,

Dan McGuckin, President
The Woodland Steward Institute

**For many years a mainstay of this publication has been the "Stumpage Report" provided by the Indiana Chapter of the Association of Consulting Foresters. The IN-ACF chapter was unable to provide this report for 2020. Our hope is to combine an abbreviated version of 2020 data with the 2021 data next year.

Thank You, Dan Shaver!
Board members of the Woodland Steward Institute, Inc. would like to thank Dan Shaver for his service as president during 2007-20. Dan's love and passion for Indiana's forests will be missed on our board. The good news is many of us still get to work with Dan in his new position as NRCS state forester. Congratulations, Dan!

IN THIS ISSUE

visit us online at www.inwoodlands.org

This publication is funded in part by the Renewable Resources Extension Act (RREA) and made possible through a grant from the USDA Forest Service

Calendar of Events

February 10
Midwest Women in Agriculture conference
"How farm woodlands contribute to your operation"
9:15 am
Shipshewana, LaGrange County
Learn more at *https://ag.purdue.edu/extension/WIA/Pages/events.aspx*

February 10 and 12
Winter Tree ID Workshop
Feb 10, 6-8 pm, Feb 12, 9-noon
Spring Mill State Park, Lawrence County
RSVP to 812-278-0139 or *tdligman@att.net*.

February 24 - April 14
Online Forest Management for the Private Woodland Owner 8-week course
6:00 pm - 8:30 pm
Learn more and register: *https://www.purdue.edu/fnr/extension/events/9573/*

March 3-4
Indiana Small Farms Conference 2022
Hendricks County Fairgrounds, Danville
Learn more at *https://www.purdue.edu/dffs/smallfarms/sfc-2022/*.

March 17
9 AM- Noon
SICIM annual meeting
Join SICIM for its 2022 Annual Partner's Meeting.
Learn more at *www.sicim.info/*

March 26
Ohio River Valley Woodlands and Wildlife Workshop
Burlington, KY
Details at *https://tristatewoods.ca.uky.edu/*

April 15
Women's Conservation Learning Circle
Woodland management workshop
Martell forest, Tippecanoe County
See more info at *https://www.women4thelland.org/upcoming-events*.

April 16
Spring Wildflower Walk
Near Salem, Washington County
More info or RSVP to 812-278-0139 or *tdligman@att.net*

April 22
Hoosier National Forest Buffalo Springs field tour
Details at *https://go.usa.gov/xAn24*

April
Family Nature Fest
Ferdinand State Forest, Dubois County
Learn more at *http://www.duboisswcd.org/*

April 26
Hoosier National Forest Buffalo Springs project virtual public meeting
Details at *https://go.usa.gov/xAn24*

Event information:
Upcoming local invasive species management events in your area: See *https://www.entm.purdue.edu/iisc/* for times, locations, contact info.

See all forestry and wildlife events for woodland owners at *www.ifwoa.org/events*.

The WSI solicits and accepts donations from private individuals, agencies and organizations with a kindrid spirit, and businesses operating within the forest management and forest products industry. Advertisements offered to the WSI for printing within the "Steward" will be reviewed by the board of directors and approved or rejected based upon available space, content and their alignment with the mission of the WSI. The WSI does not endorse any of our advertising sponsors.

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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.

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The Birders' Dozen

Profile 2: American Woodcock

Dr. Jessica Outcalt, consulting bird biologist

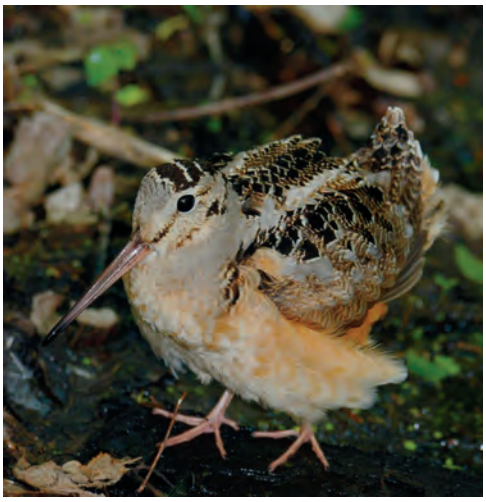

Figure 1. American Woodcock, photo courtesy Matt Williams Photography

Welcome to the second iteration of the Birders' Dozen series from *Forestry for the Birds*. The Birders' Dozen are forest birds that can benefit from targeted management practices, as most are declining due to habitat loss. We've curated this list to cover a wide range of habitat types, from young to mature forest, open to closed canopy, or dense to non-existent shrub layers. Our goal is to engage landowners and foresters in the process of managing forests for wildlife, or "forests for the birds."

In this second profile, we'll meet the American Woodcock, a funny-looking shorebird that prefers to spend its time in old fields and young forests rather than the beach. This bird is popular amongst birders and hunters alike, even inspiring the name of a popular sporting dog breed, the Cocker Spaniel. The woodcock is one of our earliest breeders, one of the reasons we're introducing it now – it may be winter, but spring is coming sooner than we think!

Its *peent* call ringing at dawn and dusk to signal early spring, the American Woodcock is a beloved and unique species. Though it is classified as a shorebird, the woodcock spends most of its time in brushy young forests foraging for earthworms. It is popular as a game species, but is currently threatened by habitat loss and in need of targeted management to preserve its preferred nesting habitat.

Natural History

Unlike most shorebirds such as the Killdeer or Bar-tailed Godwit (the world record holder for longest non-stop bird flight during migration), the American Woodcock does not spend its days wandering up and down rocky beaches or gravel roads looking for tiny invertebrates. Instead, it peruses leaf litter in young forests, eagerly watching and probing for earthworms. Its eyes, uniquely situated on the back of its head, allow it to watch for predators while nose-deep in leaves and dirt.

One of the woodcock's most distinctive behaviors is its elaborate "sky dance" courtship display at dawn and dusk in early spring. In March and April, woodcocks return from their wintering range in the southern portions of North America and begin to defend breeding territories in old fields and forest openings. In order to attract a mate, male woodcock select a singing ground that's an average of 750 square feet, usually a clearing or old field within a young forest landscape. Aldo Leopold famously wrote about the woodcock's sky dance in his *A Sand County Almanac* (1949), describing him as a romantic performer in an amphitheater of forest, carefully choosing a time of day with light like candles. "Knowing the place and the hour, you seat yourself under a bush to the east of the dance floor and wait, watching against the sunset for the woodcock's arrival. He flies in low from some neighboring thicket, alights on the bare moss, and at once begins the overture: a series of queer throaty *peents* spaced about two seconds apart," Leopold writes.

As the dance begins, the male stops his *peent* calls and spirals upwards, wings twittering, often up to three hundred feet high. Once he has reached his peak, he silently plummets to the earth before again landing in his amphitheater. Males and females, once this courtship display has proven successful, nest in shallow depressions of leaf and twig litter in young forest. These sites often have high densities of shrubs and saplings, which can provide shelter from predators.

Woodcock nests typically consist of a slight depression in the ground in leaf litter.

Females, which are the sole caregivers, will lay clutches of 1-5 small mottled brown, gray, and orange eggs. Females incubate these eggs for approximately three weeks before they hatch into precocial young, which are able to leave the nest within a few hours of hatching and are fully grown and able to fly within a month. By late October or November, coinciding with hunting seasons, migrating woodcocks have begun leaving their summer sites and are en route to their wintering locations.

Habitat Management

Management plans for American Woodcock often recommend creation of young forests with dense midstories for shelter and little ground cover, which benefits earthworms. Young forests, common throughout much of the 18th and 19th centuries, have now aged in many areas. This natural succession process, while benefitting mature forest specialists, has reduced the amount of habitat in which American Woodcock can find their preferred food and breeding areas.

Hunting, since harvest rates have declined since the 1970s, likely does not impact woodcock populations. Instead, habitat loss, specifically of young forest in the Midwest, has been named as the likely culprit for regional population declines. Even-aged management that creates clearings near young forest can greatly benefit the woodcock and other early successional species. The American Woodcock Conservation Plan (Kelley et al. 2008) recommends even-aged management techniques on short rotation cycles to create habitat for these charismatic birds.

Conclusion

Despite population losses due to lack of suitable habitat, the American Woodcock can greatly benefit from the actions of woodland owners in Indiana. Private land management targeting creation of clearings and young forest can foster areas in which males can display and females can raise young. Projects such as *Forestry for the Birds* are geared towards private landowners and foresters, with the goal of benefitting both forest health and American Woodcocks.

Special thanks to the Alcoa Foundation, the Indiana Forestry Educational Foundation, and The Nature Conservancy for their support and leadership of Forestry for the Birds.

Young, dense forests provide ample cover for woodcock.

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Jessica Outcalt is an independent consultant working with The Nature Conservancy since 2020. Her "day job" is as a field technician doing avian surveys with WEST, an environmental consulting firm. She completed her BS in biology at Taylor University, her PhD in wildlife ecology at Purdue University, and is passionate about birds and getting people involved in conservation and scientific processes.

ID That Tree – Shingle Oak

By Lenny Farlee

On this edition of ID That Tree, we're going to introduce you to a native Indiana oak, that from the leaves, might not suggest oak to you at all. This is shingle oak, and shingle oak is our only native oak with entire leaf margins meaning there are no lobes or teeth on the margin of the leaf.

Most of our oak species have some lobing on the edges of the leaf. This is a member of the black and red oak group of the oak family, and we can tell that because there is a little bristle tip at the end of the leaf, the acorns mature over a two-year period, and it does have dark bark as is typical for most of the red and black oaks. Its leaves are shiny, and as is common with the oaks, we do typically have a terminal bud cluster. Oak species commonly hybridize by pollinating across species. The bark on this tree suggests maybe a little bit of a cross between black oak and red oak. Long running ridges tend to be a little more blocky. Shingle oaks tend to hang on to some of their lower dead limbs. It was called shingle oak because historically they would take sections of this tree and split it out to make wood shingles.

The acorns on shingle oak relatively small cap covers a significant amount of acorn and the acorns gradually turn relatively dark before they drop out of the caps if they're good and sound. Unsound acorns have a tendency to fall off of oak trees without releasing from the caps and so this small acorn does make it available to several species of wildlife.

All in all, it is an interesting oak native to Indiana, the only one with no lobes and entire margins on the leaves and has a history for wood products use of making shingles as well. To view a video about Shingle Oak and much more, visit https://www.purdue.edu/fnr/extension/resources/videos/.

Lenny Farlee is an extension forester with the Hardwood Tree Improvement and Regeneration Center at Purdue University. Prior to the HTIRC, Lenny worked with private landowners as a district forester for the Indiana Division of Forestry for more than 15 years.

Healthy Forests, Healthy Markets

In Indiana, forestry agencies including soil and water conservation districts are focusing on educating landowners on the connection between healthy forests and healthy markets; many landowners there don't realize that harvesting is the sixth largest industry in the state. Knowing what to harvest when and how it impacts the health of the forest is critical in maintaining the balance.

"Healthy markets get us healthy forests and with healthy forests you have healthy wildlife; it all goes around and comes back," Allen County Soil and Water Conservation District (SWCD) Board Supervi sor Tom Crowe said.

"The more you can teach landowners, the more you get them thinking and they realize it's not just harvesting trees, it's harvesting the right trees and creating habitat and the whole picture," Crowe said. "You can have it all if you do it the right way."

This year, the Natural Resources Conservation Services (NRCS), National Wild Turkey Federation (NWTF) and various SWCDs came together to host a roundtable discussion at the annual conference of Indiana Soil and Water Conservation Districts center ing on how proper forest management can go hand- in-hand with improving wildlife habitat, sustaining ecological communities and improving future markets.

More than one-fifth of the land in Indiana is made up of forests, and more than 85 percent of those are privately owned. Those landowners have a myriad of forestry concerns: changes in land classification has increased property taxes; invasive species can have a high and persistent cost; there have been disease and insects that have claimed acres of forestland; and many landowners have seen losses to environmental factors including heavy storms, more droughts and climate change.

"Forestry practices are sometimes less immediately evident," NWTF National Forestry Initiative For- ester – Indiana, Amy Spaulding said. "Initially, some practices, like treating invasive species, thinning out less desired trees or prescribed burning may not be as aesthetically pleasing, however, they are import- ant for forest health, the wildlife that depend on them and for our future economy."

Education around the big picture is key in helping landowners create forestland that falls in line with their goals and desires, whether that is recovering from losses incurred from storms or clearing out understory and thinning the land.

"There is a stigma with some groups in Indiana that cutting down trees is always a negative process, and there is a misunderstanding that forest management means destruction of forestland," Indiana Association of Soil and Water Conservation Districts Executive Director Joe Schmees said.

"Overcoming this type of stigma with landowners is important. Providing examples of how forest management can lead to habits that promote healthy ecosystems can enhance recreation opportunities instead of hurting them," he said.

There are 4,500 companies across Indiana involved in forest harvesting, according to 2020 State Forest Action Plan data. The industry generates $10 billion annually and provides 70,000 jobs. By assisting landowners in forest management, the industry has contributed to the recovery of some of the most abused forests, transitioning them into healthy stands. In fact, 80 percent of the state's 5 million acres at some point in the past century fell into that "abused beyond repair" status. Today, with proper management, which includes harvesting, the forests have returned.

But it starts with a management plan. Currently, less than 20 percent of forest landowners have a management plan, and what they don't realize is that because of that, their forests are operating at about 50 percent of their productivity.

The SWCD in DuBois County is pulling out all the stops in its efforts to educate the landowners there on a broad scale that encompasses nearly every aspect of forest management.

"Our forestry committee holds field days and encourages landowners to work with professional foresters," Executive Director Judi Brown said. "We have forest management

tours to show people the proper practices to use, including chainsaw safety training, invasive species control, using tree-selection harvests rather than diameter-limit harvests, and the importance of working with a forester. You have a professional looking at the health of the forest as a whole rather than the value of individual trees."

In Porter County, the district is reaching out to women, as well. This summer, the SWCD sponsored a womens' workshop that centered on forest management and taking the first step in achieving a healthy forest: controlling invasive species.

"We regularly receive calls from folks interested in woodland management but getting from the planning stage to the actual implementation is not always easy," SWCD District Administrator and Educator Michelle Benson said. "There are a number of hurdles folks encounter and making it to the finish line often requires a lot of time, effort and persistence."

There are few companies in the county equipped to handle proper invasive species management, she said. Directing landowners to financial resources is one route, but funding can be limited and the applications do not always translate into contracts.

Porter County SWCD has gone so far as to partner with neighboring LaPorte County SWCD to form an invasive species management group to conduct more outreach specifically targeting invasive species. Invasive species are a top hinderer of healthy forests; rampant invasives can kill trees, and at the least can cause tree deformities which significantly affect the quality of trees available for top-dollar harvesting.

In Crowe's neck of the woods, around Fort Wayne, he helps connect landowners with companies in order to sell their "junk" trees, so not only do the landowners gain a bit from a sale; they are freeing up tracts to open the forest and provide healthier growing conditions.

"Most landowners don't know what they've got," Crowe said. "There's a big disconnect between management and how to market. We're lucky. We have a lot of diversity and a lot of markets including low-grade mills, so we can easily go in and low- grade, which just keeps increasing the value in the wood and the productivity."

Establishing and then following a forest management plan is the first step, though. Then, in whatever the landowner hopes to achieve, thinning and dis- posing of less-desirable trees ultimately will make the forest stronger and contribute to the economy, whether it's a low-grade $20 tree or two larger ones that together go for upwards of $200,000, Crowe said. "It stays as a wood and you get the wildlife, the water quality, the air quality – all of the benefits go with it," he said. "Everything is intertwined with healthy forests in the middle."

This article was originally published by the National Association of Conservation Districts (NACD) in the Autumn 2021 issue of National Woodlands and is reprinted with permission. The National Association of Conservation Districts (NACD) is the 501(c)(3) nonprofit organization that represents America's 3,000 conservation districts. Conservation districts work with millions of cooperating landowners to help them manage and protect land and water resources on private and public lands in the United States. Visit us at: www.nacdnet.org/about-nacd/what-we-do/forestry-2/

Using Harvests and Fire to Promote Oak Reproduction in Dry Upland Forests

Sarah Rademacher and Michael Jenkins

Oak (*Quercus* spp.) forests in the eastern United States provide valuable wildlife habitat, timber resources, and carbon storage. They are fire-adapted ecosystems that, historically, were maintained by frequent, low-intensity burns. Oak trees have many fire adaptations, including thick bark, compartmentalization of wounds, underground germination, and prolific resprouting after fire (Brose et al. 2001, 2014). However, oak forests are in decline due to fire suppression that started in the early 1900s, under which wildfires were extinguished and prescribed fires were not implemented. This lack of fire on the landscape has led to a shift in tree species as oak forest understories became densely shaded and underwent the process of mesophication. Mesophication occurs when shade-tolerant, but fire-intolerant, tree species such as maples (*Acer spp.*) begin to replace drought and fire-tolerant, but shade-intolerant, species such as oaks (Brose et al. 2001, Nowacki and Abrams 2008). These shade-tolerant and fire-sensitive species commonly outcompete oak seedlings and saplings, leading to fewer mature oak trees in the future. Without intervention, the abundance of oak trees will continue to decline as they are unable to successfully reproduce and are replaced by other species.

Forest managers and landowners often want to know how to maintain oaks on their property, but before they start management, they need to understand that not all oak forests are the same. Differences in oak forests are largely driven by differences in moisture availability, with more productive mesic sites (sites with greater water availability) undergoing more severe mesophication that makes it difficult to restore oak species. Dry sites are less productive and experience a slower rate of mesophication. On dry sites, forests may shift from one species of oak to another species of oak that is slightly more tolerant of shade (Olson et al. 2014)most of these studies were conducted in the eastern and central CHR, and the assumption that similar dynamics occur in the western CHR has not been fully substantiated. We investigated forest dynamics in relatively undisturbed, mature oak-hickory forests of the Missouri Ozarks during a 15-year period (1995-2010. Therefore, it is often easier and more cost-effective to maintain oak on these drier, less productive sites because promoting new oak seedlings requires less management effort.

A management technique that is often used to promote oak is the shelterwood-burn method, which includes an initial shelterwood cut removing unwanted tree species and leaving mostly dominant and codominant oaks and hickories (*Carya* spp.) in the overstory, in conjunction with a midstory removal (Brose et al. 1999). The reduction in overstory and midstory trees allows for more light to reach the oak seedlings, reducing light competition with undesirable species. Three to five years later, once the oak seedlings are large enough to survive fire, a prescribed burn is applied to the site to reduce competition in the seedling layer and reduce the depth of the litter layer, which allows acorns to germinate.

A study was initiated in 2010 on the Hoosier National Forest in southern Indiana to evaluate the effectiveness of different tree harvesting and burn treatments on two sites. One site was drier and less productive and received the shelterwood-burn treatment with overstory and midstory harvests conducted during 2012- 2015 and the burn in April 2019. The other site was more productive and received an initial shelterwood cut and midstory removal during 2011-2013, but was not burned. During and after treatments, the survival and growth of individually tagged seedlings were tracked in addition to tallying tree seedlings and saplings by species at both sites.

Results indicate that oaks seedlings performed better at the drier, less productive site after receiving the shelterwood-burn. After the prescribed burn, oak species had an average survival rate above 90%. While fire may have top-killed surviving oak seedlings, they resprouted vigorously (Figure 1), which is an important fire adaptation of oak species. Non-oak species, such as maples, white ash (*Fraxinus americana*), and ironwood (*Ostrya virginiana*) had an average survival rate of 75% or less in 2020. As with oak, surviving seedlings of competing species resprouted after the fire. The average height of oak seedlings before the burn was 13% shorter than that of non-oak species (1.19 m compared to 1.35 m, respectively). However, after burning, the heights of survivors were more similar between

Figure 1. Prescribed burn conducted by the US Forest Service in 2019 (left, photo courtesy of US Forest Service) and resprouting oaks after the burn in 2020 (right).

oak and non-oak species, 0.69 m vs. 0.71 m (a 3% difference), respectively. (Figure 2). Because burning reduced the difference in height between oak and non-oak species, the competitive advantage of non-oak species was similarly reduced. Following the burn, white ash seedlings were most abundant (133 stems per 100 m2), followed by white oak (*Q. alba,* 99 stems per 100 m2), and ironwood (69 stems per 100 m2). The number of oak seedlings doubled after the fire, while non-oak species on average were only 1.6 times more abundant. The positive response of oak seedlings at the burned site supports the Forest Service plan to remove the remaining overstory trees from the shelterwood areas to further release the oak seedlings.

In comparison, oaks at the more productive site were not at a competitive advantage with ironwood having the tallest average seedling height at 2.6 m, which was more than twice the height of white oak at 1.1 m (Figure 2). Other species also had a greater average seedling height than the oaks, including red maple (*A. rubrum*) and sugar maple (*A. saccharum*). As with the burned site, white ash seedlings were most abundant (73 stems per 100 m2), followed by white oak (60 stems per 100 m2), and red maple (45 stems per 100 m2). Throughout the unburned experiment, the average number of oak seedlings did not improve significantly compared to pretreatment numbers. Non-oak seedling abundance also remained consistent throughout the treatments.

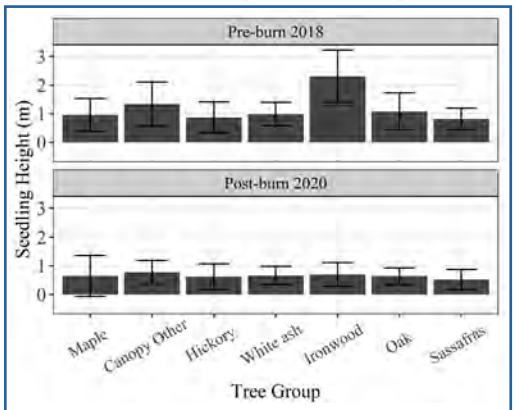

Figure 2. Average seedling height with standard deviation bars by tree group of the burned site pre-burn (top) and post-burn (bottom).

Overall, the response of oak seedlings at the unburned site was much less positive than that at the burned site.

Woodland landowners and managers can apply shelterwood cuts with midstory removal and fire to their property if site conditions are appropriate and they have an adequate number of oak seedlings and saplings before treatments. A single burn was adequate to promote oak reproduction on our less productive site. However, at our more productive site, multiple fires would be needed to promote oak reproduction and reduce competition from non-oak species. For this reason, landowners may wish to focus oak restoration efforts on their less productive or drier sites where fewer burns and less time are needed to promote competitive oak seedlings. These drier oak forests are typically located on south slopes and ridges in the south-central region of Indiana. While harvesting and fire can be used to maintain and restore oak forests, other factors, such as heavy deer browse and invasive species, can affect the reproduction and survival of oak species and should be considered in management plans.

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Sarah Rademacher is a Master's student in the Department of Forestry and Natural Resources at Purdue University (FNR) studying the impacts of overstory manipulation and reintroduction of fire on oak forests on the Hoosier National Forest. Mike Jenkins is an Associate Professor of Forest Ecology in FNR.

Your Woodland is Your Legacy

By Amy Spalding

Each year I love to try out something new in my garden. Occasionally I am surprised with success. Other times my efforts fail miserably. The great part about it is that even if I do fail, I can pull out my dead plants, replenish the soil, and know that I have a clean slate to try again next spring. This is because the story of my garden is short, unlike the long story of a forest. When it comes to your woodland and management decisions like timber harvesting, you may only get the opportunity to make the wrong decisions once. However, if you make the right management decisions, there is a good chance that you will have the opportunity to do so again. Maybe even a few times. Having a good plan, working with professionals, and thinking long-term will ensure that you are leaving behind a healthy, resilient, and quality forest for the future.

Timber harvesting and forest management are beneficial tools to improve forest health, continue the growth of desired trees so that they can achieve their full potential, and to provide a sustainable and renewable resource. Careful planning will consider water quality and minimize the potential for soil erosion by following best management practices. Good management can create a mixture of both young and old forest habitats that are essential for many wildlife and their young. Forest management with a long-term vision includes addressing invasive species and being responsive to new infestations. Lastly, managing your forest means tending to it in all of its wonderful stages to ensure that the tree species we are harvesting are continuing to regenerate and progress into the forest canopy for the future.

Unfortunately, the effects of bad management decisions can last for decades, if not a lifetime. High grading or only harvesting high value trees, many of which have likely not reached their full potential, while leaving only lesser valued trees will quickly lead to a low-quality forest as well as drastically reduce its future value. Not taking provisions to close out and maintain roads properly will lead to soil erosion and impact water quality. Not being proactive about invasive

species will only cause the problem to increase exponentially for the future to deal with. Invasive species reduce habitat and food sources for wildlife and make it hard for our native plants and trees to continue to grow and thrive. Harvesting certain trees like oak and not making provisions to help new oak trees rise up through the layer of dense, shady beech and maple trees that are flourishing in our oak woodlands will only heap another burden onto this struggling forest community.

It can be hard for a landowner to know who to listen to, where to find help, and what to do first. Fortunately, there are several great resources out there that can help you get started and stay on track. The single best resource to guide you on your path is a forest management plan. A forest management plan is a document that is prepared by a professional forester and tailored to your woodland, its needs, and your objectives. It covers the past management activities, current resources, existing issues, and objectives. It considers these factors and lays out management actions for you to focus on to help meet your goals and keep your woods healthy.

If your woodland is enrolled in the Indiana DNR Classified Forest & Wildlands program you likely already have a forest management plan from your DNR District Forester. Part of this program includes periodic invitations to join your District Forester on forest inspections. These inspections are great opportunities to learn more about your woods, ask questions, receive technical advice, as well as to discuss future management activities. You can find your District Forester or learn more about this program at https://www.in.gov/dnr/forestry/private-forestland-management/district-foresters/.

Financial assistance is also available to hire a professional forester to prepare a forest management plan by working with the USDA Natural Resource Conservation Service (NRCS). They administer several conservation programs that are funded by the US Farm Bill. The Environmental Quality Incentives Program (EQIP) is one of those programs. It offers financial assistance to hire a specially trained professional forester to work with you to prepare a detailed forest management plan. NRCS also partners with conservation groups like the National Wild Turkey Federation (NWTF) to provide additional assistance to private forest landowners through the National Forestry Initiative. Contact your local USDA Service Center to connect with your NRCS District Conservationist to learn more about these programs at https://www.farmers.gov/service-center-locator.

While a plan is invaluable to get you started, its usefulness doesn't stop there. When you are ready to turn its ideas into action, it is the key that opens the doorway to allow you to apply to NRCS financial assistance programs. These programs can help to cover a large portion of the costs. Conservation activities may include practices such as such as invasive species control, forest stand improvement, temporary forest openings, new tree plantings, and controlling erosion on forest trails.

Unless you have spent a fair amount of time working in the woods, many of these activities may be unfamiliar. Luckily there are a wealth of experienced private consultant foresters throughout Indiana that are ready to help. Private consulting foresters have an educational background in forestry from a university accredited by the Society of American Foresters. Many consultant foresters also maintain memberships with the Association of Consulting Foresters. This professional organization stresses strong ethical standards and continued education among their membership. Private consulting foresters offer a variety of services to help improve your forest that may include and are not limited to invasive species treatment, timber appraisals, timber marking and marketing, detailed timber harvest contracts, timber sale administration, tax documents, and post-harvest forest improvement work. To find a directory of professional foresters and their services please visit www.FindIndianaForester.org.

For more information on issues facing private forestland owners, please check out and consider joining the Indiana Forest and Woodlands Owners Association (IFWOA) at www.IFWOA.org. They have up to date information about current issues, educational events, and resources specifically for Indiana private forest landowners.

Belgian botanist Léo Errera once remarked on the altruistic nature of forest management by stating that "We reap what we have not sown. We sow what we do not reap." The decisions that you make today directly influence the forests that the next generation inherits.

What do you want your legacy to be?

Amy Spalding is a Forester for the National Wild Turkey Federation and works in a partnership with the Natural Resources Conservation Services known as the National Forestry Initiative. She offers technical assistance to private woodland owners in Brown, Morgan, Monroe, Owen, Greene, Martin, Lawrence, Orange, Washington, and Jackson counties and can be reached at aspalding@nwtf.net

White Oak Initiative Releases Critical Action Plan to Reverse Decline of America's White Oak Forests

Credit: The White Oak Initiative

The White Oak Initiative, a diverse coalition of partners committed to the long-term sustainability of America's white oak forests, today announced the release of *Restoring Sustainability for White Oak and Upland Oak Communities: An Assessment and Conservation Plan,* a science-based report that details the current state of America's white oak forests and recommends a practical plan of action to avoid their decline.

American white oak is a tree species currently occupying more than 104 million acres of public and private forestland across much of the eastern and central United States. Not only do white oak forests support extensive plant and animal biodiversity, white oak is the most commercially important timber oak, generating billions of dollars annually and supplying necessary material to industries such as furniture, flooring, cabinetry, and wine and spirits.

"The White Oak Initiative Assessment and Conservation Plan is a great example of what can be achieved when public and private agencies, stakeholders and resource professionals band together with a common purpose," said Regional Forester Ken Arney with the U.S. Forest Service Southern Region. "We are pleased to be part of this first-time effort to address management activities across the range in a manner that supports, improves and accelerates the cumulative success and positive outcomes associated with oak sustainability."

According to the new report, shifts in land management and ecological changes throughout much of the white oak range are resulting in an increase of competing species establishing themselves in white oak forests. These competing species, most notably maples and beech, are shading out white oak trees and preventing them from regenerating. As a result, older white oak trees are not being replaced by younger white oak trees at a pace that will support long-term sustainability. The report also highlights the importance of other challenges such as invasive insects and diseases, climate change and behavior change. Without swift intervention today, the report cautions, the American white oak population will begin to decline significantly within the next 10 to 15 years, with more extreme declines over the next several decades.

Photo Credit: David Stephens, Bugwood.org

"This report offers a thorough, evidence-based assessment of the dire state of American white oak forests but also presents a hopeful and achievable path forward," said Melissa Moeller, director of the White Oak Initiative. "I'm beyond proud of the collaboration among our dedicated partners for putting forth such clear recommendations. It's evident from the research that the challenges facing our white oak forests are huge and the solutions needed are bigger than what any one organization can accomplish. It will take collective action now to ensure white oaks' economic, ecological and social benefits for generations to come."

Directed by the White Oak Initiative steering committee, and developed by the American Forest Foundation and the University of Kentucky, *Restoring Sustainability for White Oak and Upland Oak Communities: An Assessment and Conservation Plan* features data from a regional spatial analysis study and a recently conducted family forest owner survey. It also identifies 10 specific recommended forest management practices that will provide sustainability benefits for oak forests with a focus on white oak, including appropriate harvesting techniques and other practices used to improve regeneration and vigor of oaks.

In order to restore the long-term sustainability of America's white oak forests, and maintain the economic, social and environmental benefits they provide, we need active, cross-boundary collaboration, participation and support from industry, resource professionals, policymakers, landowners and others who can align knowledge and resources behind the recommended forest management practices, before it's too late.

For more information, including detailed data and the full list of recommended forest management practices and next steps, please review the full report which can be found on the White Oak Initiative's website, *www.whiteoakinitiative.org*.

Photo Credit: Paul Wray, Iowa State University, Bugwood.org

About the White Oak Initiative–*Founded in 2017 by the University of Kentucky, the DendriFund and the American Forest Foundation, the White Oak Initiative brings together industries, universities, state and federal agencies, private landowners, conservation organizations and trade associations that are committed to ensuring the long-term sustainability of America's white oak forests as well as the economic, social and environmental benefits they provide.*

Landowners Needed for Brief Survey

The Indiana Forestry Educational Foundation (IFEF) has created a short survey to find out more about what woodland owners need for information on woodland stewardship. IFEF intends to use the results to fund education programs and resources for landowners.

IFEF's mission is educating the general public, forest landowners and timber users in the appreciation of trees and good forest management practices and the importance of viable, sustainable working forest lands. Past funded projects have included forestry field days, invasive species tool libraries and handouts, Nature Daze programs in Brown County, and Project Learning Tree programs for K-12 students.

If you are interested in helping, please go to *https://bit.ly/IFEFsurvey* to answer a few questions or use your camera on this QR code:

Indiana Forestry Educational Foundation

Should We Be Concerned About Coyotes?

By Brian MacGowan

Spring is just around the corner and you are probably looking forward to the return of many birds, mammals and amphibians. While folks are quick to recognize the call of spring peepers, or the song of robins, they are surprised to know other types of critters can call their backyard home, or at least visit on occasion. One animal that is getting a lot more attention in recent years is the coyote.

Coyotes are actually native to Indiana, although their historical distribution is much smaller in the state than it is today. Their range expansion is simply the result of their adaptability. Things we have done to the broader landscape combined with less competing animals has opened up new resources to coyotes. You may tend to think that urban or suburban landscapes offer little for wildlife species and don't offer the quality of rural or more "natural" areas. Perhaps surprising to many, urban environments can often support larger densities of wildlife presumably because of increased food resources and lower trapping or hunting pressure. For coyotes, studies have shown that urban coyotes tend to focus activities in natural habitats within the urban landscape. They will still use more well-developed areas and the extent of which varies among animals; however, coyotes will often shift their behavior to avoid human activity.

Coyotes are considered to be a nuisance or even a safety threat by some. They are probably one of the few animals that homeowners want removed simply by seeing them in their yard. However, these fears are rarely justified. Diet studies of urban coyotes indicate they eat primarily rodents and rabbits. Coyote predation may actually help reduce conflicts with other species of wildlife. As a primary predator of Canada goose nests they may limit population growth in urban environments. Similarly, coyotes may do the same for white-tailed deer populations through fawn predation, although some may view this as undesirable. Predation of livestock and poultry is also a consideration when living with coyotes in both suburban and rural areas.

Fear of coyotes is derived largely of perceived threats to pets or people. Coyotes have been documented to attack people, but only rarely. Habituation to humans seems to play a role but it is also unclear how other factors contribute to these attacks. For example, the age or social status of the offending coyote and the intentional feeding by humans preceding the attack may play roles. Moreover, not all attacks are the same. Coyotes may attack out of defense, because of disease (e.g., rabies), or other reasons.

The threat to pets, particularly cats or small dogs, is much more real. Coyotes are known predators of cats. In urban areas, predation of cats is slightly higher than in rural areas, although cats still make up only about one percent or less of their diet according to studies. Cat predation may be ecologically beneficial given the impact free ranging cats have on our native wildlife (LINK). Attacks on dogs are less common but do occur and are most frequent during the coyote breeding season, December through February. Small dogs are at most risk but larger breeds may be attacked by a pair or family group.

While these facts on coyote behavior may alarm some, the truth is these are all extremely rare cases. Coyotes are around many of us every day and we aren't even aware of their presence. Coyotes are native to Indiana and can help control populations of other wildlife species that cause more widespread conflicts and property damage. However, there are a few common-sense steps we can do to avoid conflicts with urban coyotes. The most important is to never intentionally feed coyotes or other animals. They don't need it. Intentional feeding can contribute to coyote's habitation to people, which is believed to be a contributing factor to attacks. Some also recommend scaring off coyotes you see in the yard by banging pots and pans or similar actions. However, this may cause a defensive response in some animals and it not advisable. For more information about urban coyotes, visit the Urban Coyote Research Center online at *https://urbancoyoteresearch.com/*.

Brian MacGowan is an Extension Wildlife Specialist with Purdue University's Department of Forestry. He also has served as secretary and editor for the Woodland Steward since 2008.

Ask the Steward

By Dan Ernst

Question: A woodworker friend of mine says there are Ebony trees growing in Indiana. I thought these were tropical species.

Answer: Yes- there is one Ebony tree species native to the state of Indiana. With its light colored sapwood it is sometimes referred to as 'white ebony' and can be found from Kansas to Connecticut and southward into Texas and Florida. In Indiana its primary range is south of Indianapolis.

Well known for its fruit, it is a great wildlife tree and a favorite among many Hoosier's for pudding and pie. However, since these trees are typically dioecious, you'll need both male and female trees to get fruit.

The wood is unique too, and while not highly sought after it can be somewhat valuable as a specialty wood. In years past the wood was used extensively for making the wooden head of golf club drivers due to its density, shock and wear resistance. The bark is dark and blocky and mature trees are generally mid-sized. Do you know the tree? The ebony tree of Indiana is of course the American (Common) Persimmon- *Diospyros virginiana*. Is there one in your woods?

Question: Can you really make syrup from Black Walnut sap? What other species can be tapped for syrup making?

Answer: Actually more species than you might think. While Sugar Maple is considered the king of syruping due to its flavor and high sugar content there are a surprising number of other species with a history of tapping. Among them are Red Maple, Box Elder, Sycamore, Birch, and for a special treat- Black walnut. While you'll also see hickory syrup for sale it has little to do with the sap, as it is generally made by boiling the bark for flavor and adding it to sugared water.

Like maple syrup, walnut syrup is made by tapping trees for sap and boiling it. Fortunately, black walnut sap has approximately the same sugar content as Sugar maple and produces a great syrup with a mild nuttiness. Walnut syrup can also be blended with maple syrup to extend supply while still retaining its unique flavor.

Unfortunately, black walnut sap production is much lower than maple and the syrup more difficult to make. This difficulty is primarily due to the pectin found naturally occurring in the sap. During boiling the pectin thickens and becomes gelatinous making it much more difficult to filter the sap to produce clear syrup. Some have used the enzyme, pectinase, with some success to help breakdown the pectin during processing.

Tapping has also been found a bit tricky and the use of specially designed walnut spiles may increase sap yield. Walnut spiles are somewhat larger in diameter and longer than the traditional maple spiles. Tap hole depth is also important- only tap into the white sapwood area of the tree. If your drill shavings show dark heartwood, the tap is too deep; Drill too shallow and sap yield may be reduced. Conservative tapping guidelines recommend 1 tap for Walnut trees 10 to 18 inches in diameter. Larger trees can have 2 taps. **STOP**- before you jump into tapping get to know your trees! Black walnut is a beautiful and valuable timber and veneer species often commanding top dollar. For tapping select lower quality trees- if in doubt ask your forester.

For more walnut syrup information check out https://smallfarms.cornell.edu/2016/01/tapping-walnut-trees/

Dan Ernst is a professional forester and past Assistant State Forester with the Indiana Division of Forestry. He has authored 'Ask the Steward' since 1992 and can be reached at foresterdan@yahoo.com

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Thank you to all the supporting SWCD's. Supporting the Woodland Steward Newsletter puts timely, relevant and science-based information in the hands of woodland owners in Indiana.

Landowners please stop by and visit your local SWCD. They have a wealth of information about invasive species, conservation programs through the Farm Bill, wildlife, soil conservation and many other natural resource related topics. The SWCDs work locally in your county to bring a critical environmental perspective to land use and economic development issue and help develop local solutions to natural resource related problems. Visit your local SWCD and thank them for supporting the Woodland Steward Newsletter.

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