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Maryland's Forest Stewardship Educator



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There's an App for That!

Jonathan Kays, Forestry Specialist, University of Maryland Extension

Assessing the health of your woods when you don't have a lot of knowledge about what is growing on the property is a challenge. Traditional extension workshops allow access to forestry professionals, but the use of new mobile apps make exploring your woods fun and educational.

HealthyWoods, a collaborative effort between forest specialists from Kentucky and other hardwood-producing states in the Appalachian region, including Maryland, provides woodland owners with a convenient tool to scout the health of their woods. It was designed to be useful for landowners from a wide range of settings from New York, Ohio and Maryland to as far south as Georgia and South Carolina.

Ellen Crocker, Forest Health Specialist at the University of Kentucky, led the project that developed the app, and believes it has great value for landowners: "We made this educational tool that walks them through the process as they walk through the woods." Users answer a series of questions and can upload pictures from their phones. Questions deal with such things as how the canopy looks, how healthy the trees are, what the understory looks like, and whether invasive species are present. Pictures are used to identify the choices provided so it is a visual learning experience. The questions direct the user to determine if it is a mature forest, one recently harvested, what tree species are present, and how what they see fits with their goals.

After completing the questions, the user immediately receives a report geared to their management goals, whether that's timber production, recreation, or attracting wildlife. If called for, the report includes suggestions for improving the stand. It also provides contact information, if the owner wants to bring in a professional to help guide management. The user can save

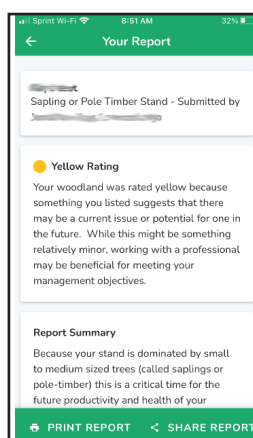
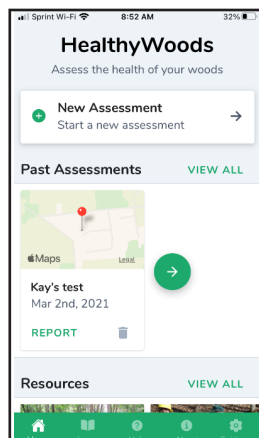
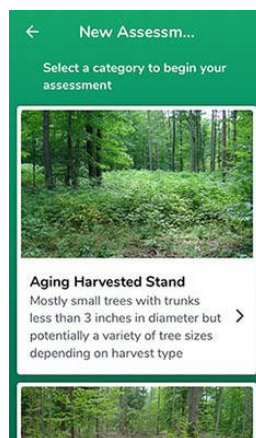
the report as a PDF that can then be emailed. They also can review previously saved reports online to see their progress. This is something all landowners should download and take a walk through their woods and see what they can learn!

The *HealthyWoods* app is not a diagnostic tool and it will not provide landowners with specific identification of forest health threats or recommend management approaches. Rather, the *HealthyWoods* app will focus on core concepts and assist landowners in formulating a report on the current state of their property that can be used to connect with forestry professionals who can help develop a plan of action that best meets their goals for their forest or woodland.

The Maryland Woodland Stewardship Program is planning a webinar in the near future to help landowners learn how to use the app, and face-to-face outdoor workshops will be offered when COVID-related restrictions make it possible.

HealthyWoods is available for free for iPhone and Android devices on the internet at <https://healthywoodsapp.org> or at your device's app store. Give it a try and let us know how it works for you.

Screenshots from the *HealthyWoods* app



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Registration is Now Open for “The Woods in Your Backyard” Online Course Spring Session

Registration is now open for the Spring 2021 session of “The Woods in Your Backyard” online course. Our course is designed primarily for small-acreage property owners who want to learn how to care for or expand existing woodlands, or to convert lawn space to woodlands.

The self-directed, non-credit online course runs for ten weeks, from March 22 to June 1. It is offered through the University of Maryland’s Electronic Learning Management System, and is accessible from any Internet connection and Web browser.

The Woods in Your Backyard Online Course

The course closely follows the published guide of the same name, but includes some important extras. Quizzes reinforce important concepts within the text. Optional activities give participants the opportunity to share one

or more of their stewardship journal entries, or photos or narratives of their woodland stewardship accomplishments. In addition, many of the course’s units are accompanied by short videos, created and produced by Woodland Stewardship Education staff. These 2- to 5-minute videos demonstrate essential skills and techniques (such as tree identification or crop tree release) and share the experiences of other woodland owners.

The course costs \$95.00 and each session is limited to 25 participants. Each paid enrollment includes printed copies of “The Woods in Your Backyard” guide and workbook, plus a copy of *Common Native Trees of Virginia*. Visit our website page about the course at [this link](#) for more information, including updated registration information and a way to preview the course at no charge.

[Go to this Eventbrite link for participant comments, more information, and how to register.](#)

If you are a Maryland Master Naturalist or a Maryland Master Gardener, participating in this course can contribute to your annual hours commitment. See [this link](#) for more details.

Forest Pests: Asian Longhorned Beetle

Nancy Stewart & Agnes Kedmenecz
Woodland Stewardship Education Program-
Wye Research & Education Center

The Asian Longhorned beetle (ALB), native to eastern China and Korea, is a wood-boring pest which feeds on a number of hardwood trees, eventually killing them, impacting both urban trees and forested sites. Wildlife habitat will be impacted due to loss of forest shelter and food sources. Industries such as such as lumber, maple syrup, nursery, commercial fruit, and tourism will feel an economic impact.



Figure 1. Adult Asian Longhorned beetle. Donald Duerr, USDA Forest Service, Bugwood.org.

The first U.S. discovery of ALB was in Brooklyn, NY in 1996 and is believed to have arrived in wood packing material from Asia. The beetle has also been found in Illinois (1998), New Jersey (2002), Massachusetts (2008), Ohio (2011), and most recently, South Carolina (2020). It has not yet

been found in Maryland, so let’s get familiar with this insect so we can spot it if it does arrive. Because it has no known native predators, if the Asian Longhorned beetle becomes established in the U.S., it has the potential to cause more damage than the Dutch elm disease, chestnut blight, and gypsy moths combined. To see a map a map showing locations of the Asian Longhorned beetle, visit [2020 National ALB Program Overview](#).

The adult Asian Longhorned beetle is 1 to 1 ½ inches long, shiny black with white spots, and long antennae with black and white bands 1 ½ to 2 ½ times as long as the body, bluish feet (see Figure 1). It’s important not to mistaken this beetle with other insects. There are a number of similar species that one could confuse it with such as Whitespotted sawyer (*Monochamus scutellatus*). For images and a list of similar species, click on [Asian Longhorned Beetle and its SE US Lookalikes](#).

There is one generation of ALB per year. The adults are present from July to October and later if temperatures are warm. Because ALB can overwinter in multiple life stages, adults emerge at different times. This results in their feeding, mating, and laying eggs throughout the summer and fall. While adult beetle activity is most obvious during the summer and early fall, adults have been seen from April to December. They usually stay on the trees from which they emerged or they will migrate short distances to find a new host to feed and reproduce. While the beetle can fly up to 8.5 miles from the host tree, the average flight distance is 1.4 miles.

See ALB, p. 6

Woodland Wildlife Spotlight: Red Fox

The red fox is the largest of the fox family, found throughout this continent, from the Arctic Circle to Central America, as well as in Europe, Asia, and parts of Africa. Although native to Maryland, there are reports of early European settlers importing European red foxes for hunting purposes. Because of this, scientists theorized that red foxes in the eastern part of this continent were descendants of these European imports. However, [DNA tests have shown](#) that the red fox is indeed native to North America and that the populations in the mid-Atlantic and southern states are the result of range expansion from the northeast and Canada.

The success of the species in a wide variety of habitats around the world, and its demonstrated ability to learn from experience, has led a variety of human cultures to include the fox in folklore and literature. In many Native American traditions, the red fox is a trickster, working to deceive both humans and other animals through cunning and guile. In others, the animal is a wise and benevolent messenger, helping humans find food or their way home. But afterwards, the fox goes its own way, not becoming part of any group or community.

Unlike its canine cousins the wolf and the dog, which can be quite sociable in groups, the fox tends to be more solitary, interacting with other foxes mostly only during the mating season, which in Maryland occurs from January through March. During quiet winter nights, their calls can be heard across great distances, consisting of a wide variety of [barks, shrieks, whistles, and other vocalizations](#). They will also [vocalize to signal danger](#) or upon encountering another red fox.

During this time, the male and female will choose a den in which they will shelter the young. They may dig their own burrow for this purpose, but they often will occupy an abandoned groundhog burrow and expand it for their own purposes. In more human-based areas, they may occupy the crawlspace under a shed or a deck. Throughout the rest of the year, they prefer to stay in the open and relying on their fur to keep them warm.

After a gestation period of about 50 days, the female will give birth to a litter that averages 4 to 5 pups, called kits, in the spring. The young are born blind and toothless, and the female stays with them for up to two weeks until their eyes open and teeth begin to erupt. During this time, the male will bring food to the female. After their third week, the kits will begin to transition to solid food, although they may nurse for up to 7 weeks before being fully weaned. During this time, their dark brown fur begins to change to the distinctive rusty red, and the streaks of black appear on their muzzle. They reach adult proportions by the age of seven months.

At this point, usually in the fall, the new generation strikes out in search of new territory to call its own. A red fox will

Red Fox Basics

Appearance: Rusty-red coat on shoulders, face, flanks and tail. Bushy tail with white tip. White belly fur. Black eye streaks. Slender body with upright ears. Individual variations of color common.

Size: Up to three feet in length and two feet tall. Weight 6-15 pounds in weight.

Lifespan: In captivity, up to 25 years. In the wild, less than 5 years



A Red Fox in Calvert Co., Maryland, 2017.

Photo by Ben Springer,
Maryland Biodiversity Project



A Red Fox in Baltimore City, Maryland, 2015.

Photo by Thomas Andres,
Maryland Biodiversity Project

create a home range between 3 and 30 miles in diameter, depending on location and food availability. They are generally nocturnal, but are also active during dusk and dawn.

Because they are highly successful and adaptable omnivores, they occupy a wide range of habitats across Maryland, including woodlands and open fields, as well as urban and suburban areas. They eat both plants and animals; their diet includes rabbits, snakes, birds, mice and insects, along with berries and fruit.

The red fox relies on its hearing for hunting. It can hear animals with great accuracy as their prey scuttle under leaf litter, or even chewing, digging, or rustling underground. When they have pinpointed their prey, they will rapidly dig to capture it. Red foxes have also been known to stalk animals such as small mammals and birds by leaping onto them and pinning them with their forepaws. They can jump up to 6 feet in height and can sprint at nearly 30 miles an hour. In some cases, they will cache food for later.

Across their range, red foxes are prone to predation as young from eagles and coyotes, and as adults from bears, wolves and mountain lions. In many areas where red foxes and humans interact, they are subjected to hunting as suspected pests or as a source of fur. However, given their wide range and their adaptability, their populations are mostly stable worldwide. In Maryland, they are managed as a fur-bearing species, with a [regulated hunting season](#).

Invasives in Your Woodland: Tree-of-Heaven (Ailanthus)

Tree-of-heaven has been receiving a significant amount of attention lately, and not just because it is a fast-spreading invader of woodlands throughout the mid-Atlantic states and beyond. It is currently found in at least one area in almost every state in the U.S., with its greatest density in the middle latitudes from the Atlantic Ocean to the Mississippi River. (See the distribution map below.) In the mid-Atlantic, it is reported in every county in West Virginia and Delaware; in almost every city and county in Virginia; and in all but 16 northern counties in Pennsylvania. In Maryland, it is found everywhere except for the counties along the eastern shore of the Chesapeake Bay, and Harford and St. Mary's counties.

Both forestry and invasive plant species specialists have advocated for the control and removal of tree-of-heaven for many years, but the recent discovery of a new invasive insect in Pennsylvania, and its subsequent spread into adjoining areas, has lent new voice to advocates for the plant's removal.

The insect, Spotted Lanternfly, is a recent arrival from Asia. The insect has discovered a variety of native North American tree species on which to feed, but researchers have discovered that tree-of-heaven is the insect's preferred host. This has led to an increased movement to remove tree-of-heaven from the landscape.

For property owners with tree-of-heaven in their woodlands, it is important to understand the plant's origins and ways that it can be controlled. This is essential not just for the health of the woodlands, but to help curb the spread of Spotted Lanternfly.

What is it?

Tree-of-heaven (*Ailanthus altissima*) arrived in the United States from China in the late 1700s. Known variably as Chinese sumac or varnish tree, its strong, offensive smell also leads to the nickname "stinking sumac." Its fast-growing characteristics made it particularly popular as an urban street and shade tree, and it was widely planted throughout the mid-Atlantic states because it tolerates a wide range of site conditions, including areas with poor soil. This is one of the reasons why it is so successful; from these first plantings, it escaped into natural areas across the region. It crowds out native species with its dense thickets and secretes a chemical into the soil that is toxic to the surrounding plants. While it does not tolerate shade, it can quickly colonize open, disturbed areas such as woodland edges, roadways, fencerows, and forest openings. It will take advantage of woodland areas that have been defoliated by insects or impacted by

environmental or weather conditions.

How does it spread?

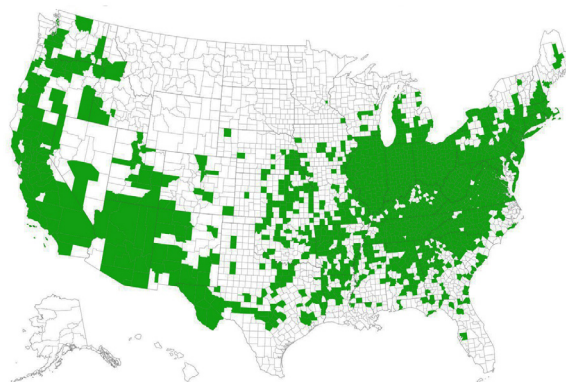
The plant is dioecious, meaning that there are male trees and female trees. The females produce large quantities of seeds within papery containers called samaras; they have the potential to produce more than 300,000 seeds annually which are dispersed by the wind. Established trees send out suckers up to 50 feet in length to create seedlings, contributing to their dense thickets.



Tree-of-heaven (ailanthus).
Photo by James H. Miller,
USDA Forest Service,
invasive.org

How can I identify it?

Tree-of-heaven has a number of distinguishing characteristics aside from the odor mentioned earlier. The leaves have a central stem with leaflets attached to each side, and can be up 1-4 feet in length. The leaflets are oval shaped with smooth edges, which helps distinguish them from native species with compound leaves and numerous leaflets. These species, such as black walnut and hickory, have leaflets with serrated edges. A young ailanthus has smooth, brownish-green bark, but a mature tree's bark is light brown to gray and has wrinkles resembling a canteloupe. See the photo gallery on the next page.



Tree-of-heaven county distribution map.
Courtesy eddmads.org

How can I control it?

Controlling tree-of-heaven is particularly difficult once it becomes established. If you find one or more trees-of-heaven in your woodland, do not cut it down. Injured trees send out additional root suckers. Hand-pull young seedlings when the soil is moist and you can remove the entire root system. Even small root fragments are capable of creating new seedlings. Control of established trees can be accomplished year-round with a basal application of herbicide, and is particularly effective using herbicide during

the end of the growing season (in Maryland, from late July to November). Because all the ailanthus trees in a thicket are connected via the root system, treating one will affect parts of the entire thicket. Herbicides applied to the foliage or directly into the tree through methods such as hack-and-squirt will be transmitted into the root network, thereby killing the targeted tree and reducing future sproutings. Repeated treatments will likely be needed for best results.

For more information:

Learn more about Tree-of-heaven:

[Tree of Heaven-Invasive Plant in Maryland](#) (UME Home & Garden Information Center)

[Tree-of-heaven](#) (Penn State Extension)

[Tree-of-Heaven](#) (National Invasive Species Information Center)

Image Gallery: Tree-of-Heaven (Ailanthus)



Mature tree-of-heaven bark.



Samaras on a female tree-of-heaven
in winter.

All photos courtesy
Richard Gardner,
Bugwood.org



Medium-sized tree-of-heaven.

Tree-of-heaven seeds on a female tree.



"The Mad Scientist of Pawpaws"

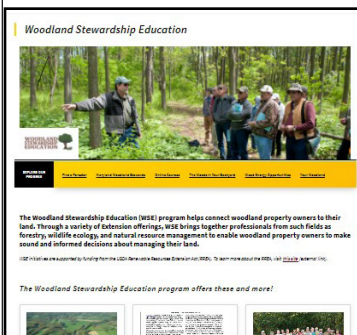
Pawpaws - the source of food for countless generations of Native Americans and early Europeans to the continent - are having a renaissance of sorts. And while you won't find them in supermarkets like other native fruits (think blueberries), one man has devoted a large part of his life to the preservation, cultivation, and expansion of pawpaws.

[Read about the pioneering efforts of Neal Peterson](#), who has been called the "Johnny Appleseed of pawpaws" and has trademarked seven different varieties, with names like Potomac, Susquehanna, and Shenandoah.



Photo by Helen Norman for gardenandgun.com

Coming this Spring A New Look for our Website



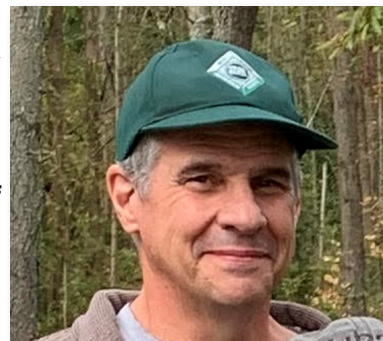
The Woodland Stewardship Education program, as part of the University of Maryland Extension, is getting a long-anticipated website upgrade. The rollout is part of a larger re-branding of Extension and the College of Agriculture and Natural Resources and is expected to take place this spring.

With the new site will be a greater connection to our on-line courses, our video presentations, and our publication resources. The site will be a work in progress for a while, as we work to get all our content from the old to the new (such as making all 28 years of *Branching Out* available), but the new site promises to have better search functions and will be more mobile-friendly.

Check our [Facebook page](#) for timeline updates. Please take a look and let us know what you think!

Mike Kay Chosen as National Tree Farm Inspector of the Year

Mike Kay, Project Manager for Frederick/Washington Counties, has been recognized as the 2021 National Tree Farm Inspector of the Year.



Kay is the first inspector from Maryland to receive this award

since the program began over forty years ago, although several inspectors have been in the running for the national award as regional nominees.

Kenneth Jolly, acting director of the Maryland State Forester, wrote in his nomination, "Mike Kay easily ranks as the most productive Tree Farm Inspector in the entire state of Maryland, claiming the top spot in the state in 2020 with the highest number of Tree Farms enrolled in the program – 122 total – as well as the largest acreage – 17,405 acres – in his assigned area of Frederick County. These are huge numbers in the state of Maryland – representing 15% of all Tree Farms in the state and 17% of the total acreage." Congratulations, Mike!

State Forest Work Plans Available for Public Comment

The Maryland Department of Natural Resources Forest Service is seeking public input about a series of annual work plans for four state forests. This annual process rotates through the forests across the state, as the Forest Service invites the public to comment on how these valuable resources are managed.

This year, the Forest Service wants feedback about proposed work plans for Chesapeake/Pocomoke, Green Ridge, Potomac-Garrett, and Savage River state forests.

Annual work plans help the department identify priorities within the scope of the forests' long-range management. They address composition, establishment, growth, health, and quality along with construction and maintenance projects.

The public comment period closes March 5. For more information, visit <https://dnr.maryland.gov/forests/Pages/workplans.aspx>.

ALB from p. 2

Female ALM lay 35-90 eggs. She chews oval to round pits in the bark in which she lays eggs. The egg site in the bark may ooze sap, especially on maples. Eggs hatch into larvae within 10-15 days.

The larvae tunnel under the bark and feed on living tissue (phloem and cambium) and eventually into the woody tree tissue (xylem) through the fall and winter. They eventually pupate in the wood and emerge through round exit holes the following spring. The exit holes, found in live trees, are perfectly round, 1/4 inch or larger on trunk and branches larger than 1 1/2 inches in diameter.

This feeding and burrowing in tree tissue will weaken the tree, causing the tree top to eventually die back and leaves will yellow out of season. Once the pest has sufficiently disrupted those pathways, the infected tree will die.

Another sign to look out for is frass, sawdust-like material or excrement, which may accumulation in branch crotches and around the base of infested trees. In the U.S., the Asian Longhorned beetle is known to attack 29 species of deciduous hardwood trees, preferring maples ,yet will indulge in alders, birches, elms, horse chestnut, poplars, sycamore, and willows.

So, how do you treat it?

Detection and eradication are needed to prevent or minimize the spread of this destructive insect. You are on your way, by learning how to ID an ALB infestation, noting what the egg masses look like, being able to ID those big exit holes, knowing the look alikes, and noting the frass. Also keeping an eye out for the symptoms such as leaf dieback and poor health.

USDA's Animal and Plant Health Inspection Service is responsible for minimizing ALB's entry to the U.S. It periodically conducts blitzes at ports-of-entry, extensively inspecting targeted Chinese shipments of solid wood packing materials to check for a variety of invasive species, including ALB.

For urban and residential areas, once detected, cutting, chipping and burning infected trees is the only proven method of control. The most common way the Asian Longhorned beetle spreads is through moving firewood from infected areas, so it is best to not move firewood out of regulated areas. Buy local, use local. If you have unused firewood, burn all of it or leave the wood on site. Of course, this requirement applies to any area with insect pest quar-

antines.

If you suspect you have found an Asian Longhorned beetle or found evidence of one, even if you are not sure, contact the Maryland Department of Agriculture. Be sure to save the beetle, even if it is already dead. Place the beetle in a secure container. Immediately call MDA at 410-841-5922.



Oval to round pits in the bark.
Photo by USDA.gov.



Egg sites and exit holes on heavily infested tree. Photo by Julie Twardowski, APHIS.

So walk your woods frequently and get you know your trees, take some time to look closely for evidence of the Asian Longhorned beetle and any other forest pests. Remember, early detection is critical and the public must stay vigilant. Keeping your forests healthy benefits Maryland's ecosystems and all Marylanders.

Recently, the insecticide Imidacloprid has presented good results when injected into individual trees and is increasingly being used in conjunction with other methods to protect trees and eradicate the pest. While two parasitoid wasp species have been identified that parasitize Asian Longhorned beetle larvae, they require more study before approved for release in the U.S. Also being researched is the use of fungal entomopathogens (a fungus that can behave as a parasite of insect, destroying or seriously disabling the insect). However, it has yet to be determined if the desired fungal species

is native to North America. Breeding beetle resistant trees is yet another promising strategy.

This issue's Brain Tickler ...

Last issue we asked you to identify the papery tissue that encloses the seeds of the white ash. The term is "samara." Congratulations to Fred Dickinson for his correct answer!

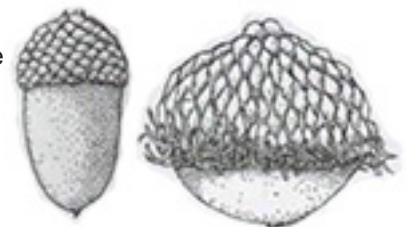


For this issue, consider these acorns. There are 21 species of oaks native to Maryland; name the two that make these acorns.

(Hints: one is the state tree; the other's name sounds like an infamous vice president.)

Email Andrew Kling at akling1@umd.edu

with your answer.



Events Calendar

For more events and information, go to
<http://extension.umd.edu/woodland/events>

March 6 - June 23, 2021, 7-8:30 PM on Wednesdays
Maryland 4-H Forestry Club
Online & regional meetings
\$40.00 per child + \$10.00 annual 4-H enrollment fee

Maryland 4-H is looking for youth who are interested in exploring the state's forests and learning how to conserve our natural resources. This new statewide program will provide hands-on experiences for participants, ages 14-18, to gain a strong understanding of trees, forest management, and environmental issues. 4-Hers and volunteers from across the state will meet virtually once a week, and participate in monthly field sessions. For more information and to register, go to: <https://go.umd.edu/SmC>

March 17, 2021, 12:00 noon - 1:00 pm
**Woodland Wildlife Wednesday webinar series:
Tracks, Signs, and Stories of Maryland Insects (that
may already be in your woods!)**
Online
The Woodland Wildlife Wednesday webinar for March will feature Dr. Karin T. Burghardt, Ph. D. from University of Maryland, speaking about the benefits of insects native to the state. The webinar is free, but registration is required. For more information and to register, visit [this Eventbrite link](#). Previous webinars in the Woodland Wildlife Wednesday series can be found on our YouTube channel. To view the full playlist, go to [this link](#).

March 23 - June 1, 2021
"The Woods in Your Backyard" Online Course
Online
Register now for our spring session of the online course.
[See page 2 for more information.](#)

April 14 & 15, 2021, 1:00 pm—5:00 pm
**Backyard Buffer Seedling Give-away
Martinak Forestry Office, 105 Deep Shore Road,
Denton, MD**
The Maryland Forest Service is holding a seedling give-away to support property owners wishing to participate in the ["Backyard Buffers Program."](#) Species available are Bald Cypress, Persimmon, Redbud, Red Osier Dogwood, Cherrybark Oak and Sawtooth Oak. A total of 25 seedlings are available for each site registered. Registration in the program can be done in advance or at time of pickup. Seedlings are available on a first come first served basis. Individuals can call the office for more information at 410-479-1623.

March 25, March 30, & April 1, 2021, 12 noon - 2 pm
Deer Impact Assessment and Mitigation Summit
Online
A new three-session webinar series offered by Penn State Extension provides a roundup of current information and

strategies to help natural resource managers understand, assess, and manage deer impact in forested systems. Sessions will be led by experts from Penn State Extension and feature speakers from the USDA Forest Service, the Pennsylvania Game Commission, the Pennsylvania Department of Conservation and Natural Resources, Penn State, Cornell University, Harvard University, and the National Deer Association. To register and for full program information, visit <https://extension.psu.edu/deer-impact-assessment-and-mitigation-summit>.

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WOODLAND STEWARDSHIP EDUCATION



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This and back issues can be downloaded for free at www.extension.umd.edu/news/newsletters/branching-out.

All information, including links to external sources, was accurate and current at the time of publication. Please send any corrections, including updated links to Andrew A. Kling at akling1@umd.edu.

Send news items to Andrew A. Kling at
akling1@umd.edu or 301-432-2767 ext. 307.