

BRANCHING OUT

Maryland's Woodland Stewardship Educator



go.umd.edu/woodland



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We Want Your Feedback!

Andrew A. Kling, *Branching Out* editor

I was talking with Jonathan Kays the other day about this newsletter, which, of course, was his invention—and he marveled that it's now starting its 31st year. I've been the contributing writer and editor for almost eleven of those years, so we've both seen things come and go as well as changes to the newsletter and its readership. We currently have more than three thousand subscribers and many more readers who read it via our website.

Think of where you were and what was happening in your world not just in 2012, when I started with Extension, but in 1992, when Jonathan started *Branching Out* as a quarterly newsletter for a few hundred Maryland woodland owners, who received a printed and stapled issue in the mail. Before joining the Woodland Stewardship Education program, I was a freelance writer, and shortly before joining Jonathan's team, I wrote a book for middle school-aged students called "Web 2.0," when social media was a relatively new thing. Going further back, I wrote one about cell phones that outlined not only how they work but the evolution of "smart phones" that could take videos, and that one day might be used to provide real-time information about family members' locations. The book examined the debut and rise of the iPhone and the possibilities of the newly-emerging Android system.

What does this have to do with your woodlands? Well, think of some of the information in recent issues that document the intersection of technology and woodland stewardship. For example, Jonathan wrote about the

HealthyWoods app [two years ago](#), and we regularly use these pages to promote our two online courses ([such as on p. 2 of this issue](#)) that help you learn about getting more out of your woodlands. Additionally, many of our readers choose to read the articles through [our website](#), and use its [widget to subscribe](#) to future issues. It's rare that a week goes by without at least one or two people becoming new subscribers.

We hope that in this era of social media and instant everything-on-demand that this newsletter still has value for you. We've been encouraged by a number of recent subscribers who have joined us from outside our traditional three-state market. To that end, we invite you to take a very short survey to provide us with some valuable feedback. We'd like to learn more about our readers and our subscribers. We bill the newsletter as "Maryland's woodland stewardship educator;" do you own woodland property, or just enjoy time in the woods? Do you live in Maryland, the mid-Atlantic, or somewhere else? We have a number of regular features in each issue; do you have a favorite that you always read first? Are there any topics that you'd like us to explore in future issues?

[Please visit this Qualtrics link to take the survey.](#) No personal information is collected and your responses are anonymous. We appreciate your time and your feedback!



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Registration is Now Open For the Spring Session of “The Woods in Your Backyard” Online Course

Registration is now open for the Spring 2023 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 April 3 to June 13. 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

Thanks again for a delightfully thought-provoking class. In revisiting my property boundaries during this class, I discovered some lovely wooded areas that I had been too preoccupied in the past to notice. I was so pleased to realize that they are mine to enjoy and care for!
- Peggy C., Maryland

The course closely follows the published guide of the same name, but includes some important extras. Quizzes reinforce the important concepts of 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 frequently asked questions, 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.

Get \$25.00 Back!

Did you know that you can get \$25.00 from the State of Maryland when you buy a tree for your property? As part of a campaign to plant native trees across the state, the Department of Natural Resources has joined with selected nurseries to offer a rebate program that rewards consumers who purchase a tree worth \$50.00 or more.

As with most rebate programs, there are certain requirements. The purchase needs to be made from one of the participating nurseries [on this list](#). The purchaser needs to fill out [this coupon](#) and bring it to the nursery for their information. And the tree has to be one of the natives on the [“Recommended Tree List.”](#)

For more information, [visit this DNR webpage](#).



Woodland Wildlife Spotlight: American Beaver

What do high fashion, “Alice in Wonderland,” and Oregon State University have to do with this issue’s spotlight? They all have the American beaver in common in one form or another. For OSU, it’s their mascot. For high fashion, it’s the beaver’s pelt—water repellent and, thanks to the abundance of American beavers reaching European markets in the 18th and 19th centuries, all the rage as the foundation of gentlemen’s hats. But working with those pelts involved soaking them in liquid mercury, which led to neurological poisoning and insanity for many. Lewis Carroll’s character, often called “the mad hatter” (although he never used the descriptor), wears a tall beaver hat and is generally considered less than sane. All thanks to the American beaver.

The beaver is the largest rodent in North America. Their large size and distinctive flat tail distinguishes them from other fur-bearing mammals found in similar habitats in Maryland, such as martens and weasels. The tail serves several purposes—fat storage, steering while swimming, and as a warning device for other beavers. They will slap their tail against the water to alert others in the area of potential predators.

The beaver is a mostly nocturnal herbivore that feeds on leaves, woody stems, and aquatic plants. They regularly move between aquatic and terrestrial habitats, using their small, dexterous front feet to work on land and their larger, webbed hind feet for swimming. While they are awkward on land, they are adept swimmers and can hold their breath for up to 15 minutes and travel up to a half-mile underwater.

Like all rodents, beavers have visible incisors that grow throughout their lifetime that need to be worn down through daily use. For the beaver, that means not only feeding, but gnawing on trees at the water’s edge, engineering their efforts to cause the tree to fall into the water. From there, it gnaws off the branches of larger trees or the trunks of saplings to build two signature structures: their dams and their lodges. The dams slow the flow of streams, creating floodplains that reduce erosion and ponds that attract a wide variety of wildlife. Their lodges, sometimes built along the riverbank but other times away from the shore, can be up to 6 feet tall and 35 feet across. Underwater entrances lead to above-water living quarters, which the beavers line with wood shavings for bedding and to reduce moisture.

All of this construction takes place primarily during the spring and summer, although the animals will perform maintenance on them throughout the year. They also store food within the lodge for later use. Beavers are monogamous and will breed in January and February, with

American Beaver Basics

Appearance:
Reddish-brown fur with distinctive hairless tail. Short legs with large body. Small ears relatively flush against the head.



American beaver in Prince George’s County, MD.
Photo by Dan Small, Maryland Biodiversity Project

Size: 30-60 lbs. and up to 40 inches in length.

Lifespan:
Typically 10-12 years. The oldest on record lived 30 years in human care.



American beaver in Dorchester County, MD.
Photo © bev45, iNaturalist.org

a single litter of two to five kits being born in May or early June. The young have fully-developed teeth and can start eating vegetation by three weeks of age. They can swim almost immediately after birth. The newborns join a family group that consists of the parents and year-old siblings. The yearlings help with raising their siblings and with dam maintenance until they are driven out by the adults to find their own territory before the birth of the next litter.

Early European explorers found the species in great abundance on this continent. Americans and Canadians spent decades in the 19th century trapping beavers across the continent, almost to the point of extinction. Scarcity and a change in fashion tastes helped the species survive. By the early 20th century, a better understanding of beavers’ role in ecosystems led to reintroduction efforts in many states.

Thanks to conservation efforts in Maryland, beavers are now found in every county. And while some property owners consider them nuisance animals, [they actually contribute to healthier ecosystems](#) in a variety of ways. [In particular, Maryland researchers note that beavers’ behaviors lead to reduced sediment loads in streams, contributing in part to a healthier Chesapeake Bay.](#)

Invasives in Your Woodland: Princess Tree

Regular readers of this feature will recall that many of the invasive plant species we've highlighted were originally imported from Asia with a variety of intentions, such as [for ornamental purposes](#) or for [soil stabilization or conservation](#). In the case of this issue's feature, Princess tree was first imported from China to Europe and then to North America. The Dutch East India Company brought it to Europe in the 1830s and to these shores in 1840. In its native territory of central and eastern China, the tree, also called "Empress Tree," "Royal Paulownia," or simply "Paulownia," is highly prized for carving, and ancient records record its uses for construction, ornamental, and medicinal uses. Perhaps the Dutch East India Company had those uses in mind. Instead, the species has become a widespread invasive throughout much of the mid-Atlantic and mid-South states as far west as Texas, along with two counties in Oregon. It is reported in most of Virginia and all of Delaware, and across southeastern Pennsylvania. It is reported across Maryland, where both the DNR and the Department of Agriculture list it as a dangerous exotic invasive, and where the Maryland Invasive Species Council lists it as an "invasive species of concern."

What is it?

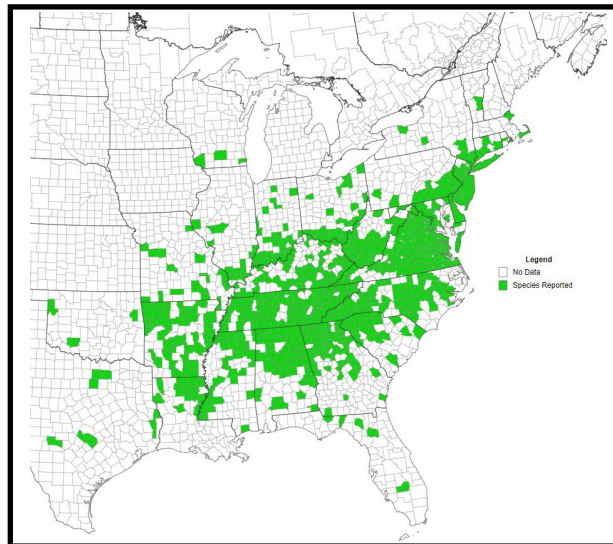
Princess tree (*Paulownia tomentosa*) is a medium-sized tree that can grow up to 60 feet tall and two feet in diameter. It is an aggressive invasive that invades disturbed areas such as roadsides and stream banks. In woodlands, it can colonize areas that have been burned or defoliated due to insects such as spongy moths.

How does it spread?

Princess tree spreads in two ways: by root and by seed. The root sprouts can grow up to 20 feet in a growing season. The root branches are shallow and horizontal without a taproot. Seed production begins well before spring, as seed-forming pollen develops before winter. The



Princess Tree. Photo by T. Davis Sydnor, The Ohio State University, Bugwood.org



Princess Tree (Reported) in Eastern U.S.
Courtesy EDDMapS.com.

insect-pollinated flowers open in spring, and each tree is capable of producing an estimated twenty million seeds. These are transported by wind and water, and can germinate soon after reaching suitable soil. Seedlings can flower in as little as 8 years.

How can I identify it?

The tree has a rough, grey-brown bark that is interlaced with shiny, smooth areas. Leaves are large (6-12 inches), broadly oval or heart-shaped. They are arranged in pairs along the olive-brown to dark brown stems, and are hairy on both sides. The flowers can grow to 2 inches in length, and are a fragrant violet-pink in color. They grow in upright clusters in early spring before the leaves emerge. The fruit develop in late summer as elongated egg-shaped capsules with four chambers that contain the seeds. The green fruit turn brown in the fall and remain on the tree during the winter, which aids in identification. Come spring, the fruit splits open, releasing up to 2,000 tiny, winged seeds per capsule. See the photo gallery on the next page.

How can I control it?

Princess tree is best controlled when young, as seedlings have very shallow roots that can be removed by hand pulling. Be sure to remove the entire root as broken segments can re-sprout. Mature trees can be cut by hand or mechanically at ground level; the best time to cut is during flowering to prevent seed production. Because the tree can re-sprout via suckering, a follow-up cut-stump herbicide treatment is effective. Foliar treatments are only recommended for small trees to prevent spray drift onto non-target species.

For more information:

Learn more about Princess tree:

Royal Paulownia: a royal pain ([Joyce Browning, Harford County Master Gardener Program](#))

Least Wanted: Princess Tree ([Plant Conservation Alliance, Alien Plant Working Group](#))

Weed of the Week: Princess Tree ([USDA Forest Service](#))

Image Gallery: Princess Tree

Princess Tree blooming in Howard Co., MD. Photo by Joanne Solem, Maryland Biodiversity Project



Princess Tree flower. Photo by Rebekah D. Wallace, University of Georgia, Bugwood.org



Princess tree fruit (top, closed; bottom, opened). Photos by Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



Princess Tree leaf. Photo by Nancy Loewenstein, Auburn University, Bugwood.org



The distinctive bark of a Princess tree (Frederick Co., MD). Photo by Jim Brighton, Maryland Biodiversity Project

Wooden Engine Parts?

You might not expect that wood and internal combustion engines would go together. But thanks to advances in wood fiber technology, the combination is underway, as Yamaha is replacing some of the plastic components of its personal watercraft engines with the lighter materials called cellulose nanofiber resin composite (CNF). CNF is made by kneading wood fibers into resins such as polypropylene. According to thedrive.com, CNF resin is “25 percent lighter than the current resins used in engine components and it's far more recyclable. Additionally, because it uses fewer plastics, CO2 emissions from the manufacturing of plastics are reduced. So CNF resin is more sustainable on both the front and back end of its manufacturing—it reduces emissions as its made and its recyclability means CNF parts can continue to replace plastics even after they've been used.”

The new parts are expected to be installed next year. Read more about this topic in [this article](#).

Northern Long-Eared Bat Declared an Endangered Species



Northern long-eared bat. Image courtesy Maryland DNR

In response to the devastating effect that white-nose syndrome is having on bat populations in the eastern United States, [the US Fish & Wildlife Service has designated the Northern long-eared bat as an endangered species](#).

The bat is found in Maryland primarily in the far western counties. While it spends its winters roosting in caves or mines, it will spend summer months roosting in a variety of crevices, including hollow trees. Observers can find them in dense forest stands as they hunt for prey one or two hours after dusk and then again before sunrise.

The designation may have local impacts on timber harvesting in Maryland, as guidelines related to these activities are evolving. Learn more about bats in Maryland from our Woodland Wildlife Wednesday webinars from [October, 2022](#) and [June, 2021](#).

New Tax Information for Forest Landowners

The US Forest Service has released a new version of its long-running “Tax Tips for Forest Landowners” series. The publication is designed for the 2022 tax year and was current as of November 28, 2022.

A cooperative effort by experts from the USDA Forest Service, the

University of Georgia, and the University of Florida, the guide provides important information related to tax liabilities and deductions related to owning forested property, especially for individuals who have had a timber sale during the tax year. There is also information for property owners who have suffered timber loss due to sudden and catastrophic events, such as tornadoes, floods, or ice storms.

Download your PDF copy of “Tax Tips for Forest Landowners: 2022 Tax Year” from [this webpage](#).



Birds Bounced Back in Severely Burned Appalachian Forest

In 2016, a series of wildfires swept through the southern Appalachians, burning over 140,000 acres. Researchers studied three areas in North Carolina's Nantahala National Forest for the next five years to assess the fires' impacts on bird populations.

Their study found that while 71% of trees died in the most severely-burned areas, resulting in a reduction in tree canopy of over 90%, shrub cover had increased 70% and birds flourished — not just in number but in diversity. Researchers found species such as the eastern towhee, indigo bunting, and chestnut-sided warbler—birds that prefer shrub cover—in these severely-burned patches. However, these species were not present in burned areas with lower tree mortality.

[Read more about the study here.](#)

Fighting Bugs with Bugs

Cary Swift-Turner, Virginia Department of Forestry (VDOF)

Eastern hemlock (*Tsuga canadensis*) is a coniferous tree that favors the cool and humid climate along the Appalachian Mountains. Hemlocks can grow more than 150 feet tall and live for more than 800 years. Their short, dense needles provide excellent habitat for many kinds of wildlife, from warblers to bobcats. Unfortunately, healthy hemlocks are becoming increasingly rare.

In the early 1950s, an invasive insect called hemlock woolly adelgid (HWA) was transplanted from Japan to Virginia. Since its introduction, HWA has spread across eastern North America, killing thousands of hemlock trees. These tiny sap-suckers feed on hemlocks by using needle-like mouthparts to feed on nutrients traveling through twigs. This disruption of nutrients first causes foliage dieback in the host tree and mortality in as little as four years. Individual adelgids are very small, less than 2 mm, but they create small white, woolly coverings around them which make them easier to spot.

In an effort to preserve Virginia's hemlock trees, the Virginia Department of Forestry's forest health staff have been implementing a variety of control techniques to protect remaining hemlocks on state forests. Fortunately, several chemical solutions have been found to be effective. But VDOF has collaborated with Virginia Tech to find another way to combat HWA that may surprise you. Hint: it's another bug!

As an invasive insect, HWA is not effectively controlled by native predators in the eastern U.S. To solve this, researchers brought one of HWA's natural predators from Japan into the fight: the *Laricobius osakensis* beetle. Before they could be released in the wild, these beetles were studied in quarantine facilities by the U.S. Department of Agriculture for years to ensure they wouldn't cause their own problems.

Introducing predatory insects to fight pest insect species is called "biological control." Although these beetles are also quite small, they have a large appetite for HWA! Researchers are hopeful that releasing the beetles on hemlocks infested with HWA will be an effective method of controlling HWA in several states, including Virginia.

In November 2022, VDOF forest health staff

released *Laricobius* beetles on several eastern hemlock trees at the Paul and First Mountain State Forests in Rockingham County. The beetles will feed on HWA adults and egg clusters, or ovisacs (the white blobs that help to identify the presence of HWA). The beetles also lay their eggs in the adelgid egg sacs. When the beetle larvae

hatch, they continue the feeding frenzy by feeding on the ovisacs and eventually adult HWA.

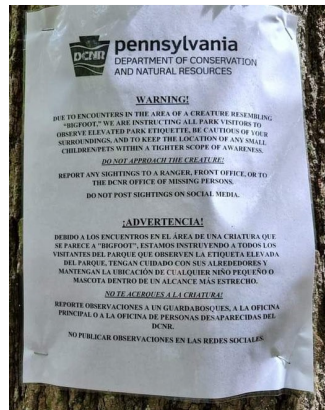
Watch this short video to learn more about using biological control to fight the hemlock woolly adelgid: <https://youtu.be/1pA9CUTSzo8>

Have some hemlock trees you want to protect? Contact your local forester to learn what control methods are best for your trees.



Eastern hemlock. Photo courtesy Virginia Dept. of Forestry

This Issue's Brain Tickler...



Last issue we asked about notices that appeared in Pennsylvania forests about sightings of an unusual creature. Congratulations to Amy Rembold for correctly identifying the critter as Bigfoot. See the photo at left.

For this issue, we have a wood-burning question. What is the term applied to logs for firewood

stacked four feet high by eight feet wide by 16-20 inches deep?

Email Andrew Kling at akling1@umd.edu with your answer.



Events Calendar

March 3, 2023

Introduction to Forest Carbon Markets

Brightpoint Community College, Chester VA & Online

Forest carbon markets are expanding rapidly in the area. If you are a forester, landowner, county leader, or just interested in the topic, this conference may be for you. At this conference, you will: Learn how forest carbon markets work, hear about opportunities for private woodland owners to participate, and much more. Hear from woodland owners with experience participating in carbon markets. \$55 per person (includes breakfast and lunch) or \$50 for virtual. Visit [this link](#) to register; deadline is February 17th.

March 7, 2023, 1:00 pm—2:00 pm

Increase Wildlife Diversity by Restoring Oak/Pine Woodlands

Online

Join this webinar to learn more about ways to restore oak/pine woodlands and improve wildlife habitat. The influence of sunlight, overstory retention levels, fire, and vegetation structure and composition will be discussed to improve habitat for a variety of wildlife species when restoring oak/pine woodlands. For more information and to register, visit [this link](#). Advance registration not available.

March 15, 2023, 12 noon-1 pm

Wildlife Wednesday Webinar: “Landscape Scale Conservation Partnerships and Planning in the Chesapeake Bay region”

Online

Our webinar series returns for 2023! This webinar is free but registration is required. To register, visit: go.umd.edu/wildlifew

March 19, 2023, 10:00 am - 12:00 pm

Scenic Rivers Land Trust Invasive Plant Removal Workdays

Bacon Ridge Natural Area, Crownsville MD

Join the Scenic Rivers Land Trust for the first of their workdays to remove invasive vines, shrubs, and grasses from trail areas. Volunteers will be trained in identification and tools can be provided. For more information, visit <https://sforce.co/3HXqLBA>

March 25, 2023, 9:00 am - 11:00 am

Montgomery County Parks Weed Warriors

Sligo Creek Stream Valley Unit 4, Silver Spring MD

Join one of the Weed Warrior workdays to help control non-native, invasive plants and preserve the health of the county's parks. Instruction and tools will be provided. Workdays are held in parks throughout the county and are led by volunteer Weed Warrior Supervisors and/or park

staff. For more information, including additional dates and locations, and to register, visit the Weed Warriors web page at [this link](#).

April 3—June 13, 2023

“The Woods in Your Backyard” online course

Our spring session of The Woods in Your Backyard begins April 3 and runs ten weeks to June 13. Learn more about the course and how to see a preview by reading the article on [page 2 of this issue](#).

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