

BRANCHING OUT

Maryland's Woodland Stewardship Educator



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What's Going On With Roundup®?

Jonathan Kays, University of Maryland Extension Specialist

The news media is full of offers to join class action lawsuits against glyphosate, the active ingredient in many herbicide formulations, including Roundup®. High profile lawsuits in California have successfully sued Monsanto, the original manufacturer of Roundup. The assertion was that their clients' long-term use of Roundup® caused the plaintiffs' cancer.

I am no toxicologist, but I am an extension forester and a faculty member at a land-grant university who is committed to looking objectively at the scientific data and making recommendations. In this case the lawsuits and media do not seem to jive with the science.

So why is glyphosate so important? Controlling undesirable vegetation in forestry is critical to assuring a healthy forest, assuring forest regeneration, creating wildlife habitat, and controlling invasive species. Controlling undesirable vegetation is possible using prescribed fire, mechanical tools and equipment, and even goats, but herbicides are much more effective and efficient. In fact, mechanical control methods may pose a greater safety threat for human injury.

Glyphosate is a type of herbicide that has an active ingredient that interferes with plant growth. There are other herbicides with active ingredients that have their own unique way of disrupting or interfering with plant growth. In this case, glyphosate works by blocking the activity of an enzyme in the one of the biochemical processes so that the plant can not grow. The process is found only in plants and not in humans and other mammals. Monsanto marketed glyphosate as Roundup® in 1974 and held the patent on the chemical until 2000. The patent expired in 2000, allowing companies to legally produce and sell glyphosate, and at lower cost, which is where we are today.

Glyphosate is found in many formulations and trade names, and is sold in big box stores and through agricultur-



Applying glyphosate requires the proper personal protective equipment. UME photo.

al dealers. It is widely used in forestry, agriculture and residential markets to control unwanted vegetation. It works on all types of plants, becomes inactive in the soil, breaks down quickly in sunlight, and poses little danger to the environment. Glyphosate, like every chemical active ingredient for any herbicide, goes through an assessment by the Environmental Protection Agency (EPA), which determined that it is safe when used "according to the label directions." The label is the law.

Some recent court verdicts in California have found glyphosate responsible for causing non-Hodgkin's lymphoma (NHL). Scientists do not really know what causes this cancer. If glyphosate caused cancer at realistic exposure levels, then farmers and other applicators would be the first to show this effect. [The largest study ever published](#), looking at farmers and other applicators, found no association between glyphosate and solid tumors, including NHL.

Anti-glyphosate advocates point to the 2015 report from the International Agency for Research and Cancer (IARC), an arm of the World Health Organization. The report labeled glyphosate a probable human carcinogen, a determination that was surprising to many. IARS responded to critics by clarifying their intent – to identify potential hazards. They asked, "Can it cause cancer under any circumstances?" They defer to oth-

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ers to do risk assessment based on expected levels of exposure and background cancer rates. Most governments (US, Europe, Australia, New Zealand, and Canada) have published risk assessments about glyphosate, finding it unlikely to cause cancer in humans when used according to label directions.

The EPA under the past four administrations found glyphosate to pose no risk to human health and was not a carcinogen. Likewise, the European Chemicals Agency determined glyphosate was not a carcinogen, and in 2018 the European Food Safety Authority determined the current exposure levels are not expected to pose a risk to human health.

The IARC determination put the following items in the same “probable human carcinogens” category as glyphosate: red meat, high temperature frying, and late night work shifts. “Known human carcinogens” in their list included processed meat, alcoholic beverages, and sunlight. The credibility of the IARC determination is questionable. Hazard identification is only the first step in assessing risk.

Final Thoughts

Glyphosate use in forest management is critical to controlling undesirable vegetation, and using it according to the label instructions minimizes any risk. As with any herbicide, risk is reduced by using the Personal Protection Equipment detailed on the EPA label, such as clothing, gloves, etc. To do otherwise is using the material illegally. Determinations by courts and lawyers do not necessarily reflect the science on this subject. Landowners can make their own determinations but if use of glyphosate can be banned based on the science available, the obvious question is, “What’s next?”

Information for this article was drawn from the following sources:

- Coyle, D. R. (2019). Glyphosate: Cause for Concern?. *Forest Landowner*, November/December 2019, 25-38. Retrieved from <http://southernforesthealth.net/other/general-forest-health/glyphosate-cause-for-concern>.
- Buhl, K. & Bubl, C. (2018). Glyphosate Questions & Answers. *Oregon Master Gardener Coordinators*. Retrieved from <http://blogs.oregonstate.edu/mgcoordinators/2018/10/15/glyphosphate-questions-answers/>.
- Andreotti, G., Koutros, S., Hofmann, J.N., Sandler, D.P., Lubin, J.H., Lynch, C.F., ... Beane Freeman, L.E. (2018). Glyphosate Use and Cancer Incidence in the Agricultural Health Study. *JNCI: Journal of the National Cancer Institute*, 110(5), 509–516. Retrieved from <https://doi.org/10.1093/jnci/djx233>.

Maryland Wins Federal Grant to Advance Forest Industry

heraldmailmedia.com

In September, a Western Maryland nonprofit was awarded a \$150,000 federal grant to advance the state’s forest products center.

The Western Maryland Resource Conservation and Development Council received the money from the U.S. Department of Commerce’s Economic Development Administration, according to a news release from Gov. Larry Hogan’s office.

The council will use the grant to develop a plan to strengthen Maryland’s forest industry through the next two decades, which is expected to lead to job creation and business growth in designated Opportunity Zones throughout the state, according to the release.

The federal funds will be matched by \$150,000 in funds and in-kind contributions by the Maryland Departments of Natural Resources, Commerce and Agriculture; the Maryland Agriculture and Resource Based Industries Development Corp.; Association of Forest Industries; Maryland Forests Association; Southern Maryland Agriculture Development Commission; and the Allegany Soil Conservation District.

“A healthy, vibrant forest industry is a benefit to our economy, as well as an essential component to the environmental health of our state,” Hogan said in the release. “This grant will help key stakeholders, including the Western Maryland Resource Conservation and Development Council and its partners in state government, develop a strategy to rebuild our forest industry.”

The funds provided by the Economic Development Administration support the crafting of an Economic Adjustment Strategy, which is a statewide analysis of the current forest industry and its unique market positions to culminate in strategies for advancing the forest products sector in the coming decades.

“The Department of Commerce is delighted to be a partner in this effort to put Maryland’s forestry industry on a new path to success,” Commerce Secretary Kelly M. Schulz said in the release. “This is great news for our state, our environment, and our economy.”

“The Department of Natural Resources understands the vital link between vibrant markets for forest products and sustaining healthy forests,” Natural Resources Secretary Jeannie Haddaway-Riccio said in the release. “Forests comprise Maryland’s largest category of land cover, and they are critical to our economic and environmental health, especially the Chesapeake Bay. We look forward to incorporating this analysis into our state’s programming for this important industry.”

Woodland Wildlife Spotlight: Great Horned Owl

One of the benefits of returning to Standard Time in the late fall is having more daylight in the early morning. An additional benefit is the opportunity to see great horned owls at dusk, as they begin their hours of hunting. Even if you do not see them, you will know they are in your woodlands, as their [deep hooting calls](#) can be heard echoing across forests on mid-winter nights.

Great horned owls (*Bubo virginianus*) get their name from their “plumicorns,” which are tufts of feathers atop the birds’ heads. They are neither horns nor related to the birds’ ears. While scientists are uncertain of the plumicorns’ exact function, it is speculated that the tufts assist in camouflaging the birds in its woodland environments.

Great horned owls are non-migratory birds that have adapted to most ecosystems on this continent. They can be found as far south as Central America and in a variety of subspecies. In the mid-Atlantic states, they can be found from deep woodlands to suburban neighborhoods. They can be found throughout Maryland, from the western forests to eastern swamps. Each owl’s preferred home range usually consists of several hundred acres that includes some open habitat, such as fields, pastures, wetlands, or agricultural fields, as well as woodlands for perching and nesting.

This is the time of year when great horned owls begin to turn towards family matters. Males and females hoot back and forth while courting; although the male is smaller in size than the female, he has a larger voice box and therefore a deeper hoot. Pairs of owls are monogamous, often staying together for years.

In late December through February, a pair will begin to nest. Unlike other birds, they do not build their own. Instead, they may re-use one recently vacated by another large bird, such as a hawk, or decide to nest on a cliff ledge, in a cave, within a tree cavity, or atop a broken snag. They will add little or no materials to them. Some pairs will add shreds of bark or leaves as linings, while others will add nothing except for the occasional lost feather.

The female will lay a clutch of 2-3 eggs that are dull white in color. She provides the majority of the incubation, and the chicks hatch in 28-35 days. Both parents provide food for the young, which can leave the nest and climb on nearby branches by five weeks old and can fly about two months later. In addition, they may be fed and tended by the adults for several months afterwards.

During this time, the nestlings or unattended eggs may fall prey to foxes, raccoons, crows, ravens, and other raptors. Once they reach maturity, they have few natural enemies.

Great Horned Owl Basics

Appearance: Mottled gray-brown, with reddish brown faces and a white patch on the throat. Heavily barred chest. Distinctive ear tufts that emerge as adults.

Size: Males up to 20 inches, weight up to 3 lbs., wing-span up to 52 inches. Females slightly larger (24 inches, 3.3 lbs., 56 inches).



Great horned owl, Baltimore County MD, 2011. Photo by David Illig, Maryland Biodiversity Project

Lifespan: The oldest known wild great horned owls were 28 years old. Can live into their 30s in captivity.



Great horned owl, Howard County MD, 2018. Photo by Anthony VanSchoor, Maryland Biodiversity Project

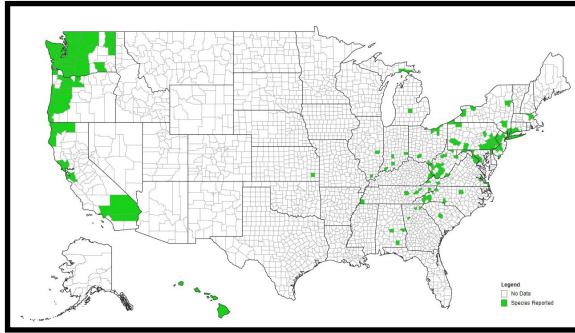
Crows and blue jays have been observed harassing sleeping great horned owls, persisting in their noisy attacks until the sleepy owl leaves for a more sheltered roost. The owls will defend their territory from intruders with vigorous hooting, as well as bill-clapping, hisses, and screams, especially in the fall, when their young leave the area, and in the winter before laying their eggs.

An adult great horned owl has a widely varied diet and is known as an opportunistic hunter. It is a prolific consumer of rodents (such as rats and mice), rabbits and squirrels. They may also prey on opossums, skunks, snakes, lizards, frogs, and insects, as well as the occasional bird. Like many owls, they will observe an area from a high perch, and then pursue the prey in flight, crossing open land and water in pursuit. They prefer to hunt after dark, but will pursue prey during the day. They catch their prey in their powerful talons, and will consume the meal in place if the area is safe, or may fly away with the prey to another, safer location.

Although the great horned owl is still considered common in many North American environments, some researchers report a decline in populations due to habitat loss, as well as through encounters with vehicles and fences.

Invasives in Your Woodland: Butterflybush

A quick glance at the distribution map (at right) may lead the reader to surmise that the butterflybush, the subject of this issue's spotlight, may not be a particular problem. However, that would be an unfortunate conclusion. The butterflybush, also known as butterfly bush (two words), butterfly-bush (hyphenated) summer lilac, and *Buddleia* (after its taxonomic name, *Buddleja davidii*), is indeed an invasive species.



Butterflybush US county distribution.

Courtesy eddmaps.org.

This plant is a rarity among non-native, invasive species. It has a wide variety of cultivars and a wide range of supporters among retail outlets as well as some environmental observers. It is also benefitting from positive public relations related to the decline of butterflies. However, it is indeed invasive, and contributes to (rather than mitigates) the decline of pollinators.

The key to understanding the harm that butterflybush causes lies in understanding the role played by caterpillars. For native pollinators to survive, they need specific plant species for their larvae's diets. Butterflybush leaves provide no nutrition for these caterpillars. Without the proper diet, the caterpillars do not survive. Additionally, birds such as chickadees that rely on caterpillars to feed to their young, will also be impacted. University of Delaware entomologist Doug Tallamy, who provided the foreword to [The Woods in Your Backyard](#) (2nd edition), outlines this relationship in brief during an interview for *Good Housekeeping* [here](#).

What is it?

Butterflybush was introduced to North America from southwestern China in the early 20th century. Originally intended as an ornamental planting, it escaped into uncultivated habitats in the Northeast, Southeast, and mid-Atlantic states, as well as scattered locations in the Midwest. Today, it is also reported widely in the Pacific Northwest and southern California. It is found throughout southeastern Pennsylvania and in three counties in northern Virginia. In Maryland, it is reported in Allegany, Washington, Prince George's and Montgomery counties.

Given its widespread popularity as an ornamental planting, it may exist in other environments where it is not reported and is considered a beneficial plant. However, the plant has the capacity to be invasive almost anywhere. As Prof. Tallamy [notes](#), "If it's not in some place, chances are good it will be [at some point]." The truth is that it crowds out native plants, preferring sunny, dry, and disturbed sites with well-drained soils. It also colonizes riparian areas such as stream and river banks.



Butterflybush flowers.

Photo by John M. Randall, The Nature Conservancy, Bugwood.org

How does it spread?

Butterflybush spreads from cultivated plantings by way of seed dispersal. Each flower contains a capsule with small, dust-like seeds that opens at maturity. The seeds are dispersed in the wind and can also spread when falling into water. It does not spread via stems or roots or other vegetative methods.

How can I identify it?

Butterflybush is a woody shrub that grows 3-15 feet tall in a single season. The velvety leaves are opposite with toothed or wavy margins, and are lance-shaped and pale gray-green. It flowers from summer through fall, producing thick, wand-like clusters from the tips of the stems. The majority of flowers are purple, pink, lilac, or white, with orange centers; additional cultivars have created additional flowering colors including deep red and yellow. See the photo gallery on the next page.

How can I control it?

The easiest way to control butterflybush is to not plant it in the first place. (There are a number of native alternatives that support pollinators; see the resources below.) Established plants can be removed by digging. It is important to ensure that established flowers are removed before the seeds are dispersed.

For more information:

Learn more about butterflybush:

[Butterfly Bush](#) (University of Maryland Extension Home & Garden Information Center)

[Butterflybush, *Buddleja davidii*](#) (Invasive.org)

[Plant Invaders of Mid-Atlantic Natural Areas: Orange-eye](#)

[Butterflybush](#) (National Park Service)

[Butterfly Bush is Invasive DO NOT Plant](#)

(ecosystemgardening.com)

Image Gallery: Butterflybush

Butterflybush plants. Photo by Forest & Kim Starr,
Starr Environmental, Bugwood.org



Butterflybush plants. Photo by Richard Gardner,
UMES, Bugwood.org



Butterflybush photos by Leslie J. Mehrhoff,
University of Connecticut, Bugwood.org.
Above: ornamental planting.
Right: escaped riparian infestation.



Butterflybush flowers. Photo by Forest & Kim Starr,
Starr Environmental, Bugwood.org



Butterflybush foliage. Photo by Rebekah D. Wallace,
University of Georgia, Bugwood.org

News and Notes

Maryland State Tree Nursery Now Open for Orders

The John S. Ayton State Nursery is now open and accepting orders for the spring 2020 season.

At least 70 percent of Maryland's woodlands are in the hands of private owners. The state nursery cultivates a wide variety of native tree seedlings for sale to Maryland residents.



For more information, visit [this link](#). To see the products and to place an order, go [here](#).

New President for MFA



Joe Hinson (above) is the new president of the Maryland Forests Association (MFA). He began his forestry career on the Eastern Shore before moving west, spending 30 years in Idaho, and then several years as a timber industry lobbyist in Washington DC before returning to Maryland in 2012. In his first message to MFA members, he listed four concerns he wishes to address: membership, education, partnerships, and political effectiveness. Read more about his interests and priorities [here](#).

American Chestnut Harvest in Virginia

The Virginia Department of Forestry (VDOF) maintains a chestnut research project at the Lesesne State Forest southwest of Charlottesville. The forest contains several small stands of pure American chestnuts that have been unaffected by the chestnut blight that killed almost all of the species in the 20th century.

When several of the trees in the state forest started to die early in 2019, VDOF decided to harvest the lumber. VDOF's Charlie Becker said, "You just don't get the chance to harvest pure American chestnut now."



Read more about the harvest and its results in the VDOF blog, "Field Notes," [here](#).

"Forests for the Bats"

Ryan Davis, Chesapeake Forests Program Manager for the Pennsylvania Office of Alliance for the Chesapeake Bay, recently authored four blog posts outlining the importance of bats in the Chesapeake watershed. Davis points out that all 15 of the bat species within the watershed rely not on caves or cliffs for their homes, but trees. The articles touched on the benefits of bats for insect control, which assists both the agriculture and timber industries as well as private landowners. In addition, the posts mentioned the importance of creating and maintaining healthy forest riparian buffers, as bats prefer trees such as white oak and shagbark hickory, as well as snags, for roosting, raising their young, and for hibernation. Read these blog posts on the Alliance website: [Part I](#), [Part II](#), [Part III](#), and [Part IV](#).



Shagbark hickory does well in riparian soils and is an excellent roosting tree for bats. Photo by Ryan Davis—Alliance for the Chesapeake Bay.

Register Now for *The Woods in Your Backyard* Webinar Series

The University of Maryland Extension has partnered with Penn State Extension, the Center for Private Forests at Penn State, Forestry for the Bay, and the Pennsylvania Dept. of Conservation and Natural Resources to offer *The Woods in Your Backyard* which runs from January 29 to March 25, 2020.



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Backyard Webinar Series,

“The Woods in Your Backyard” program began in 2006 and has helped thousands of landowners improve the stewardship of their properties. The webinar series provides a variety of experts in a lecture format through nine live, one-hour, online webinars that can be viewed from your home. Presenters will share techniques for enhancing and creating natural areas and woodland to provide wildlife habitat, improve water quality, expand recreational opportunities and enhance aesthetics.

The program is targeted to landowners with a few acres or many acres. You can learn how to positively influence the environment by implementing simple stewardship practices. This webinar series uses the manual *The Woods in Your Backyard: Learning to Create and Enhance Natural Areas Around Your Home*. This self-directed guide will assist participants with the process of developing and implementing projects to enhance their land’s natural resources.

Each participant will receive a complimentary, full-color, 108-page copy of *The Woods in Your Backyard* (a \$29 value). A free downloadable workbook is also available to help you work more effectively on your property. The registration deadline is Saturday, January 18, 2020. For more information and to register, [visit this link](#).

What’s the difference between this webinar series and the University of Maryland Extension’s “The Woods in Your Backyard” online course? Both help you learn how to enhance the stewardship of your land. The main difference is that the online course is a self-paced, noncredit certificate course that directs participants through the 17 hands-on, land stewardship activities in the workbook to help them develop timetables and projects to reach their goals. Webinar participants can enhance their stewardship skills by enrolling in the online course. The course is limited to 25 participants and costs \$95.00. For more information about the course and when to register, visit the [Online Course page](#) of the Woodland Stewardship Education website.

What’s Causing White Oak Decline in Maryland?

Researchers at the University of Maryland Extension received numerous reports of sudden discoloration of foliage and the death of white oak trees throughout the mid-Atlantic region from August to October of this year. Staff from the university’s Central Maryland Research & Education Center, the Home & Garden Information Center, and the Plant Diagnostic Lab visited sites with affected trees and examined samples of submitted foliage. Additionally, they spoke with arborists, landscapers, state and local forestry officials, and landowners. The preliminary results of their investigations are summarized in a new publication, “Browning White Oaks in 2019.” The fact sheet is available on the Woodland Stewardship Education website [here](#).

The majority of the trees affected are older (40– to 80-years old or older). Younger trees in the same area are unaffected. The onset of the browning is fast, as foliage that appeared healthy in the spring and summer turned brown within 2-4 weeks in August. The affected oaks are often in urban and suburban landscapes, but trees in woodland and larger landscaped areas are also affected.

At this time, there is not one single factor that appears to be responsible for the problems, but the authors surmise that the conditions are related to “tree decline.”

The fact sheet includes six factors that the affected trees have in common, detailed information about what may be causing the browning, and tips for assisting your white oaks, Read the full publication [here](#).



White oaks with brown foliage,
September 2019.

Photo by David Clement, UME

Events Calendar

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

November 24, 2019, 12:00 pm—4:00 pm

Chainsaw Safety & Maintenance Workshop

Maryland Agricultural Resource Council, Cockeysville MD
This workshop combines classroom and hands-on work to better understand how to utilize this powerful and useful tool. Cost is \$25.00 per person; space is limited. Participants must be 16 or older. Go [here](#) to register.

November 26, 2019—7:30 pm—8:30 pm

Maryland Natural Plant Society meeting & Emerald Ash Borer Update

Kensington Library, Kensington MD
The MNPS annual meeting at 7:30 will be followed by a presentation by Colleen Kenny (Forest Health Watershed Planner with the Maryland Forest Service) concerning the current state of EAB in Maryland and new treatment projects. The program is free and open to the public. For more information, go [here](#).

January 14, 2020, 12:00pm –1:00 pm and 7:00 pm—8:00 pm

“Let’s Talk About the Woods” webinar

This interactive webinar presented by Penn State’s Sanford S. Smith shares a method for woodland landowner education using peer-to-peer learning. For more infor-

mation about the noon webinar, go [here](#). For more information about the evening webinar, go [here](#).

January 23, 2020 (four locations & times)

Alliance for the Chesapeake Bay Wild & Scenic Film Festival

The second annual Wild & Scenic Film Festival will be held in January in Annapolis, Washington DC, Lancaster PA, & Richmond VA. Learn more and purchase tickets at [this link](#).



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Branching Out

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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.

This Issue’s Brain Tickler ...



Last issue, we asked readers to identify the important agency within the US Department of Agriculture that uses this logo. The correct answer is the [Natural Resources Conservation Services](#). Congratulations to Peyton Moncure for her correct response.

For this issue, identify this gentleman. His efforts led to the creation in 1943 of Maryland’s Forest Conservancy District Boards, which continue to advise landowners of the benefits of woodlands. (Hint: he succeeded a legend of Maryland forestry.)

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

