

BRANCHING OUT

Maryland's Woodland Stewardship Educator



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The Changing Forest We Live In

One prominent principle in life is that things are always changing and never static. So it should come as no surprise that the woodlands you visit, and all those across Maryland, are in a continual state of change that becomes clear with the passage of time. Sure, there is the seasonal variation from spring to summer, fall, winter, and back to spring again, but I am referring the change over many years. The field that is no longer plowed turns into a dense mass of vegetation, and over the course of many years, transitions into a woodland. The pasture that is no longer grazed follows a similar course. The wildlife associated with the different stages of forest growth changes as well. The bluebirds of the meadow disappear as the woodland develops and give way to the wood thrush, blue jays, deer, and other wildlife.

One disturbing change is the loss or damage to major tree species due to the influx of nonnative insects and disease – most recently ash species as a result of the emerald ash borer (EAB). Ash is a small component of many woodland systems but it is locally abundant in some areas, and may be a significant percentage of trees in urban/suburban settings. EAB will effectively remove all ash species from our rural/urban woodlands in the next few years for the foreseeable future. The loss of diversity is hard to evaluate, but it is not good. What comes after can be influenced by actions you may take.

Unfortunately, there are numerous examples of major woodland changes in the eastern US due to insects and disease. The American chestnut was one of the first to be affected. It was a dominant species in the eastern decidu-



Large American chestnut infected with blight but still surviving. Photo: Robert Strasser, Hood College

ous forest until the 1920s when it was decimated by the chestnut blight. This vacancy in the forest was filled by the oak species that now occupy thousands of acres once blooming with American chestnut. Then in the 1980s, the gypsy moth finally made it to Maryland, resulting in wide-scale mortality, but fortunately not a total loss of the species. The result has been cyclical gypsy moth outbreaks, but large areas of oak forest have transitioned to other species in some formally oak-dominated woodlands. Many dry mountain ridges once dominated by chestnut, scarlet and black oak, are now mostly red maple or other species which do not provide the mast crops (acorns) used by deer, turkeys and other wildlife. There are other species in decline as well, such as eastern hemlock that is being killed by the hemlock woolly adelgid, leaving an ecological gap since there are no other species available that have its unique characteristics.

Most of these diseases and pest are nonnative and invasive



Gypsy Moth defoliation in Maryland.
 Photo: Maryland DNR Forest Service

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species. The increase in global trade since the 1980s correlates strongly with the numbers of invasive species that have been introduced into the US, and the trend will likely continue. There are pesticide treatments that can be used to protect individual trees or certain forest areas but large-scale protection of native woodlands is neither practical nor financially feasible.

So what does this mean for woodland owners and managers? The practice of letting nature take its course is not a workable strategy, because what nature has to offer in an environment seeded with invasives may not be what you want. Learning about your woods and monitoring them to



When in doubt, consult a forestry professional forester about caring for your woodlands.

look for changes you don't understand is a good start. Proactive management to produce vigorously growing and diverse woodland is one of the best strategies to improve resiliency and forest health, but it requires taking action. Taking early action when a problem is spotted can minimize the damage and slow the spread. Having your woods inspected by a professional forester and developing a forest stewardship plan will provide a roadmap for action. Attending forest

workshops, getting involved with landowner organizations, or just reading publications and listening to webinars will improve your knowledge.

Most important, remember that forests are resilient and renewable, and while their composition may change as they have in the past, they will survive and thrive if given the proper care. Check out the resources available at the Woodland Stewardship Education website (www.extension.umd.edu/woodland).

Maryland Eastern Shore Students Restore Almost 20 Acres of Streamside Forests

myeasternshoremd.com

Midshore Riverkeeper Conservancy was selected for the second round of Maryland governor Martin O'Malley's Stream Restoration Challenge Grant to undertake 18.1 acres of stream restoration in the 2014/2015 school year.

This program not only establishes critical streamside forests in the Choptank, Wye and Eastern Bay watersheds, but also engages and educates over five hundred Talbot, Queen Anne's and Dorchester High School students in the Students for Streams program.

Natalie Costanzo, director of development and outreach at MRC, said this program is a win-win for the students and environment alike. She said at every tree planting she is impressed with the students' enthusiasm and work ethic, which shows how much they love doing something meaningful in the outdoors.

"We are lucky to have these students as our next generation to take care of our environment," she said.

There were 5,850 trees planted at six different sites, both on private and public land. All sites are on the edge of streams and agricultural fields and will act as buffers to sediment and nutrient pollution as well as preventing stream bank erosion.



Cambridge South Dorchester High students plant trees along a stream at Stagwell Farm in Queenstown, MD. Students from Kent Island High School also contributed to this site's project.

Photo courtesy myeasternshoremd.com

The Stream Restoration Challenge is a grant program through which the state and its partners plan to establish 1,000 acres of forested stream buffers in Maryland by the end of 2015. The program will provide up to \$6 million to help local governments, school systems, and non-governmental organizations carryout projects to improve Chesapeake Bay water quality and create service learning and environmental literacy activities for students.

MRC thanked its partners in this project including Maryland Department of Natural Resources, Queen Anne's, Dorchester and Talbot counties public schools and Wye Gardens Landscaping.

Maryland Tree Farm System: Supporting Sustainable Family Forests

Chuck Lewis, Maryland Tree Farm Committee

The Maryland Tree Farm System is re-energizing its efforts to better support private woodland owners. Our objectives are to more actively engage landowners and professionals who share a commitment to sustainable forestry, to provide new educational opportunities, and to promote a recently enhanced internationally recognized third party certification standard for sustainability. We are continually seeking new members to join our community and to improve our systems for providing resources. We are recruiting Tree Farmers and forestry professionals to participate in leadership



roles. If you have 10 acres or more of woodlands and wish to manage your property within a best-in-class structured system to meet your objectives, please join us. If you are currently managing a Certified Family Forest, consider getting involved to help improve the value we can provide one another.

Currently, the Maryland Tree Farm System supports the interest of 979 Tree Farms representing 138,000 acres across all regions of Maryland. Our Maryland community is structured within the American Tree Farm System (ATFS - <https://www.treefarmssystem.org/>) network of 82,000 family forest owners sustainably managing 24 million acres of forest land. ATFS is the largest and oldest sustainable woodland system in the United States and has been operating since 1941. ATFS offers a variety of information and tools to help us meet interrelated objectives for protecting water quality, improving wildlife habitat, enjoying recreational opportunities, and generating wood products. For example, ATFS has a Web-based property management tool known as My Land Plan that can help us visualize our objectives.

The Maryland Tree Farm System, through the Maryland Tree Farm Committee, is creating a five-year strategic plan to improve our organizational functions, communications, and educational outreach. The Committee is comprised of woodland owners, educators, State and Local government foresters, and professional consulting foresters. Here are some of the activities we are developing:

- **Database Update and Creation Of Geospatial Capacity:** In order to best serve our community of Certified Tree Farms, it is critical to ensure landowner and property data be periodically validated to give an accurate picture of our membership. This will allow a better understanding of membership attributes for

targeting communications and educational interest. Geospatial technology can help identify properties characteristics that may assist a good candidate's participation in the Tree Farm System. The Maryland Forest Service will be leading this database cleanup and utility effort.

- ATFS's new *2015-2020 Standard for Sustainability* is available at <https://www.treefarmssystem.org/standards-review>. Over the next several years, the Maryland Tree Farm System will be working with Tree Farmers to provide addenda to existing management plans to meet these new Standards. The first step will be training the approximately 80 Maryland Tree Farm Inspectors. Inspector training is being scheduled in 2015. As the training is completed, your local service forester will be contacting you to update your plan. There will be no cost to have your forest management plan amended to meet the new Standard.
- New for 2015 is a series of *Informational Events* across Maryland. In order to improve communications between Tree Farmers, the Maryland Tree Farm System will hold 12 locally-held informational meetings. Seven have been scheduled; see *Branching Out's* Events calendar at the end of this issue for more information and agenda items.

Your support is needed to make the Maryland Tree Farm System more valuable. What needs and interest do you have? Would you like to know more about controlling invasive species? Cost-share opportunities? Estate planning associated with your woodlands? There are many organizations available to help with these and other areas of interest. So how can the Maryland Tree Farm System best leverage information and educational opportunities to serve the your needs? Also - please consider serving as a volunteer on the Maryland Tree Farm Committee. Regional woodland owner positions and forestry professional position come open periodically.

If you are interested in learning more about the Maryland Tree Farm System, please check out our informational webpage at <http://www.dnr.maryland.gov/forests/programapps/ffarm.asp> and speak to your local DNR service forester or private consultant forester.

A Fungus to Fight Ailanthus?

A naturally occurring fungus carried by Ambrosia beetles might help curb the spread of tree-of-heaven (*Ailanthus*). When Penn State researchers injected the fungus *Verticillium nonalfalfae* into tree-of-heaven plots, the treatment completely eradicated the plants from those forests.

“It appears that this treatment is effective in Pennsylvania and could be used as a biocontrol agent throughout the United States,” says Matthew Kasson, who recently received his doctorate in plant pathology and environmental microbiology. “Trying to find the best way to get rid of tree-of-heaven has become a serious land-management issue.”

In 2003, researchers noticed a large number of tree-of-heaven deaths in a southwestern Pennsylvania forest. Large-scale wilt was affecting the trees. Don Davis, professor of plant pathology, says, “There were hundreds if not thousands of dying and dead tree-of-heaven in the area, which is very unusual, because tree-of-heaven is very hard to kill.” A number of Ambrosia beetles were near the infected stands, leading foresters to theorize that the fungus, often carried through the forests by beetles, was involved in the tree deaths.

“The Ambrosia beetles may explain some of the long-range spread of the disease,” Davis says. “One theory is that the beetles feed on an infected tree and then take those spores to another healthy tree, which could be miles away.”

Kasson and other researchers used a hatchet designed to pump an inoculation of 30 million spores per tree into 14 tree-of-heaven stands in south-central Pennsylvania. The inoculation kills the entire tree, including the sprouts.

Kasson notes, “It’s important that the sprouts are killed, too, because, tree-of-heaven has an extensive system of sprouts that spread just above the ground surface, which is one of the reasons the tree is so difficult to manage. The sprouts can immediately grow even if the top canopy of trees dies.”

Further research will study the effect the fungus has on other plants. Kasson says that he is “cautiously optimistic” that the fungus may not harm nearby plants and trees. Preliminary studies on the vegetation that surrounds *Ailanthus* groves indicate that only a small percentage of plants near the infected plots showed signs of being harmed by the fungus.

The US Department of Agriculture and Pennsylvania Department of Conservation and Natural Resources supported the work.

Maryland Tree Farm Committee Celebrates Arbor Day with State Legislators

Dave Gailey, Maryland Tree Farm System

Members of the Maryland Tree Farm Committee celebrated Maryland’s Arbor Day in Annapolis on April 1. The morning started by handing out flowering redbud seedlings to all of the members of the Maryland General Assembly. This tradition helps the Tree Farm Committee promote the importance of the Tree Farm program with an informative label with the Tree Farm sign attached to each seedling recognizing the 1046 Tree Farm owners on over 136,000 acres of forest in Maryland, about 5% of Maryland’s total forest. The Tree Farm sign promotes sustainable forests that provide clean air, water, wildlife habitat and recreational opportunities on 82,000 Tree Farms Nationwide. A great way to remind them of the importance of Maryland’s state and private forests.

Outstanding Tree Farm supporters in the forestry community were honored at the beginning of the legislative sessions in both the House and Senate. On the State Senate side, Aaron

Cook was honored as the 2015 Maryland Tree Farm Inspector of the Year by Senator Edwards. Aaron, a MD DNR Forester, works in western Maryland in Washington



From left to right: Chuck Lewis, MD Tree Farm Committee, Senator Edwards; Aaron Cook, 2015 Tree Farm Inspector of the Year, Maryland Forest Service

County as a Project Forester. Aaron completed 36 inspections on 4844 acres in Washington County this past year. He also assisted with planning a Tree Farm tour for woodland owners in Frederick County with fellow foresters and conducted a Forestry Merit badge program for the Mason Dixon Scouting Council.

John and Karen Colton manage 125 wooded acres in St. Mary’s County and have been managed as part of the American Tree Farm System since 1995. Management activities on the Tree Farm have included various Loblolly pine harvests and regeneration of pines following the harvests. John and Karen enjoy taking friends and families on tours of their property to enjoy viewing wildlife and to promote the importance of forest products and sustainable forestry.

The Maryland Tree Farm Committee is proud to honor John and Karen Colton with this award. Also supporting John Colton at the ceremony were Mark Muir, DNR Forest Service Project Manager for St. Mary's County, Rick and Kathy Abend, Maryland Tree Farm Committee and Rob Feldt, Tree Farm Committee Member, MD Forest Service.



From left to right: Delegate Morgan, Delegate O'Donnell, John Colton, MD Outstanding Tree Farmer of The Year 2015, House Speaker Busch, Mark Muir, Tree Farm Inspector, MD Forest Service and Delegate Rey.

Reducing Property Taxes Through Good Forest Management

Property tax rates vary widely across the state of Maryland, but woodland owners have several options available to them to obtain a lowered property tax assessment. They include: 1) enrolling in a forest management program; 2) qualifying for an agricultural assessment; and, 3) donating or selling a conservation easement. This article will provide information on the forest management programs.

The Maryland Department of Assessments & Taxation (cited in State of Maryland Property Tax Article 8-211) offer two programs for this purpose, known as the Woodland Assessment Act: 1) the **Forest Conservation Management Agreement (FCMA)**; and 2) the **Forest Management Plan (FMP)**. Many woodland owners have purchased woodland or land capable of producing woodland (pasture or cropland), only to find they are being assessed at the high residential rate. Regardless of which forest management program a landowner may choose, the property tax reduction may be significant, depending on the area you are located. However, the difference in woodland assessment value per acre between each program is small (\$125 per acre for the FCMA & \$187.50 per acre for the FMP). Each program has its advantages and disadvantages.

To take advantage of the FCMA or FMP, the landowner must get a written forest stewardship plan for their property developed by a licensed professional forester. The landowner must have at least 5 wooded acres, or land that can

be put into woodland. Some landowners may have an old pasture or lawn that they want to plant with trees or that they will allow to transition naturally. An acre is usually removed for the house, so in practicality the landowner usually needs at least 6 acres total to qualify for these programs. Service foresters with the Maryland DNR Forest Service will develop a 15-year plan for properties of at least 10 acres (cost is usually \$200-\$275), but smaller property owners would have to use the services of a consulting forester, which may cost more for plan preparation. There are some cost-share programs available that will pay for plan preparation and for tree planting as well. The plan and associated activities are developed based on landowner objectives but they are not written in stone – they can be modified with the agreement of the forester.

The FCMA is a legal agreement binding for 15 years and is attached to your deed. The DNR service forester in the county usually handles the arrangements. The entry fee is equal to 0.55% of the land's assessed value and there is a \$100 inspection fee every 5 years. In contrast, the FMP requires the landowner to get the plan developed and then submit it to the county tax assessment office. A DNR service forester can prepare the plan (minimum of 10 acres) or a consulting for industrial forester can do it as well. Most counties require the property to be inspected every 3 years by a licensed professional forester to make sure the activities are being implemented. One of the big advantages of the FMP is that there is no legal attachment to the property deed nor any time commitment, so the landowner can exit the program when they please. This provides the landowner a lot of flexibility.

It may be advantageous for owners of agricultural properties with woodland to use one of the woodland assessment programs, depending on the county. Some counties assess agricultural land at a flat rate while others use the soil capability class to set the assessment value, with more fertile land paying a higher assessment. Woodland is usually included in that assessment. In some cases the per-acre assessment may be significantly higher than either of woodland assessment options. Farmers and other landowners with an agricultural assessment that is higher than \$187.50 per acre may benefit by putting their woodland in a FMP or FCMA. The landowner would have to consider the cost of plan preparation and other fees mentioned above, but it is worth consideration for some.

Resource:

[Tax & Estate Planning for Maryland Forest Landowner \(University of Maryland Extension Fact Sheet 630\)](#). The information on woodland assessment programs is accurate but other information on federal and estate taxes is presently being revised.

News and Notes

P&G To Use Biomass in New Paper Plant

Paper manufacturer Proctor & Gamble announced in February that a \$200 million biomass cogeneration plant, which is now under construction in Georgia, will significantly increase the company's use of renewable energy. The cogeneration facility will be built, owned and operated by Constellation, a Baltimore-based subsidiary of Exelon Corp. The power plant is set to begin commercial operation in June 2017.

The fuel supply will come from organic matter that otherwise might be burned, sent to landfills or left to decay. The biomass is expected to include discarded treetops, limbs, branches and scrap wood from local forestry operations, along with peanut shells and pecan shells.

P&G's manufacturing plant has used a smaller onsite biomass boiler for more than 30 years. It converts wood scraps into renewable steam, providing about 30 percent of the total energy needed for the plant.

The new Constellation facility will replace P&G's boiler with a combined heat and power biomass unit. It will use organic matter to provide 100 percent of the steam and up to 70 percent of the total energy used to manufacture paper products.

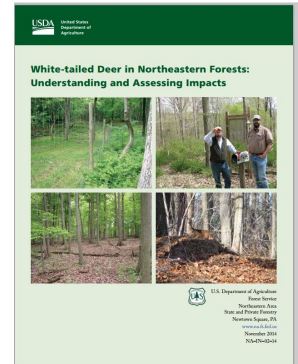
Consecutive Harsh Winters Hammer Hemlock Woolly Adelgid

Jesse Webster, biologist with Great Smoky Mountains National Park, noted in an interview with Knoxville, TN's WBIR, that consecutive harsh winters may have helped the region's fight against the invasive hemlock woolly adelgid. Webster noted, "We know the adelgids start to die when it reaches 3 degrees. [The 2014 polar vortex] killed 80-90% of the adelgids in the park. Then this year we had another prolonged cold snap ... We believe that will result in another 80 to 90 percent mortality rate for any of the insects that survived last year."

Webster cautions that there is more to do, and because the insects can reproduce exponentially, the current bust cycle may be followed by a population boom. For more on this story, go to <http://www.wbir.com/story/news/2015/03/06/winter-kills-hemlock-woolly-adelgid/24534047/>.

New Report Documents Impacts of White-Tailed Deer in Northeastern Forests

The US Forest Service - Northeastern Area State and Private Forestry recently released a new study entitled "White-tailed deer in northeastern forests: understanding and assessing impacts." The 31-page publication documents the threat that the overabundance of deer poses to millions of acres of forest across the region.



The report, in PDF format, can be read at http://www.na.fs.fed.us/pubs/2014/NA-IN-02-14_WhitetailedDeerNEForestsWEB.pdf.

New Webinar Available

On March 11, the Woodland Stewardship Education program held the latest in its Woodland Webinars series, entitled "Ecosystem Services on Forest and Agricultural Lands of Maryland: A Survey of Maryland Tree Farm Owners and Agricultural Landowners." The webinar was presented by Bob Tjaden, Specialist & Professor, Environmental Science and Technology, University of Maryland, College Park.



Visit our website at <http://extension.umd.edu/woodland> and choose "Webinar Recordings" in the Resources sidebar.

Ruffed Grouse, Woodcock Losing Battle with Habitat

Karen Gardner, Frederick (MD) News-Post

Maryland is at the southern edge of habitat for ruffed grouse — a stealthy bird that blends in with the brushy habitat where it lives.

The numbers keep going down, however. Although the chances of seeing one in Maryland have never been great, the number of grouse has dwindled in the past 30 years. Ruffed grouse, so named because of the ruff on the crests of breeding males, are listed as a common bird in steep decline, according to the Cornell Lab of Ornithology. The population is affected not only by habitat loss but by pesticide use.

A group of bird hunters gathered in February for the Ruffed Grouse Society's Maryland Habitat Forum at the Western Maryland Research and Education Center in Keedysville. Conservation professionals, wildlife biologists and game hunters all discussed ways to keep the ruffed grouse and woodcock numbers from dropping any more.

Grouse have it pretty tough today. In the 19th century, huge swaths of farmland made for ideal grouse habitat. They inhabit the northeastern U.S., the upper Midwest and Northwest and most of Canada, as well as parts of the Appalachian region in the Mid-Atlantic states. Their preferred habitat, open land with young vegetation, has declined considerably in the past 50 years.

One of the main food sources for grouse is aspen trees, but the Appalachian region doesn't typically have Aspen trees. Grouse also use snow as a wintertime roost, and if snow is not present, dense stands of pine trees. In this area, they will feed on acorns and beechnuts when available throughout fall and winter. In years when there's a dearth of acorns and beechnuts, as happened a couple of years ago with acorns, grouse suffer and chicks will be less likely to survive.

According to a study by the Maryland Department of Natural Resources, hunting at reasonable levels doesn't affect the grouse population. Current season and bag limits don't decrease the overall population. Most grouse and woodcock in Maryland are in Garrett and Allegany counties. In Frederick County, one of the best places to hunt and see grouse is in the Frederick Watershed.

Predators play a role in grouse survival, according to Bob Long, of the DNR Wildlife and Game Service. The biggest reason for the long term decline, however, is loss of habitat. "Where there's still habitat, you have similar numbers of



Ruffed Grouse. Photo via Wikimedia Commons.

grouse to what you did 30 years ago," he told the gathering.

Maryland also has fewer woodcock than it has ever had. Woodcock are shorebirds, but instead of living along bodies of water, they live in forests, forest edges, old fields and wet meadows.

Woodcock are migratory birds, and the state once supported lots of the birds.

"We're down to a few woodcock," Long said. "It's not a good trend. If you want to manage for grouse and woodcock, it just doesn't happen by itself."

It happens through acres of open land, with young vegetation, called "early successional habitat." Healthy ecosystems typically have both woodland and early successional habitat, but years of fire suppression policies, clearcutting timber harvests and policies that favored mature forests, along with land development and urban sprawl, have caused a decline in grouse and woodcock. Also, many forested areas have been overtaken with invasive species.

To create new habitat, about 30,000 acres of young forest land would be needed, said Tom Mathews, a retired wildlife biologist with DNR who has done work at the Mount Nebo Wildlife Management Area in Garrett County. "That's not attainable under current programs," he said. The state is aiming for 1,400 breeding males of grouse and woodcock by 2018. "We want to do this for not only hunters but [for] nongame observers [as well]," but also noted that "Habitat management takes time."

Grouse feed in moist soil. Woodcocks also feed in moist soil, digging for earthworms. They like dense, short vegetation, to be protected from predators. Grouse and woodcock do well in stands of musclewood and hawthorne trees. At Mount Nebo, he said, the plan is to monitor the regeneration of vegetation. The test area includes a small section of native aspen.

John Denning, a DNR state forest manager for Potomac and Garrett State Forests, said the job of the state forestry division is to work with not only hunters, but hikers, cyclists, off road vehicle users and others who enjoy state forests. Maryland has implemented sustainable forestry practices certified by two nonprofits — the Sustainability Forestry Initiative and the Forest Stewardship Council. "These assure ecological, economic and socially responsible management plans, like the Good Housekeeping seal of approval," he said. "No cutting of trees is not sustainable."

Stalking the Sweet-Singing, Reclusive Wood Thrush

Joseph McClain, The College of William and Mary

The wood thrush's song is one of the most beautiful among eastern birds, and its flute-like warble is one of the reasons Vitek Jirinec picked this species to study. Jirinec is a master's student in the Department of Biology at the College of William & Mary. His work on wood thrush microhabitat and the effects of human-modified landscapes on the health of the species won the Northrup Grumman Corporate Award.

"It's a charismatic species," he said. "Even the general public knows about wood thrushes because of their beautiful song. Oftentimes its song is described as the symbol of upcoming spring in the eastern U.S. population. Unfortunately it's been declining over the last 50 years." He said the "eee-oh-wee" trill of the wood thrush is familiar to many people who wouldn't be able to identify the species either by song or by sight.

"You can hear [its song] usually early in the morning, but also right before it gets dark," Jirinec said. Sometimes in the evening, he added, the wood thrush is the only thing you hear in the forest, besides the bugs.

There's more to this bird than a pretty song, though. The wood thrush likes to live in patches of deciduous forest, Jirinec said, so it can be used as an indicator species for the health of the environment. He notes the wood thrush likes to forage around on the forest floor, a habit that tends to keep it out of human sight.

Jirinec set out to study how individual birds relate to their home ranges. He said male wood thrushes establish a home range that might be a few acres across. He is interested in finding out what landscape features draw—and hold—wood thrushes. Conventional ornithological wisdom held that the wood thrushes require large, mature forested areas, but the birds seem to do well in the patchy woodlands of the Virginia Peninsula.

"They're associated with the forest, but people have been seeing them in their back yards," he explained. "We want to figure out what they need in the environment."

When it comes to real estate, the wood thrush likes a nice, tangled place with lots of dead leaves underfoot, Jirinec said. They scratch around, kicking up the leaves for food, dining on "ticks, worms, insects, any sort of invertebrate,"

he added. Presence of snags is also a bonus in wood thrush real estate.

Jirinec tracked a total of 47 wood thrushes (37 males and 10 females). He caught the males using speakers playing the wood thrush song and mist nets. "The males are very territorial," he explained. "A male thinks another male is moving into his territory, and he comes out to deal with the intruder and, boom, he gets caught in my net."

The female wood thrushes lack the territorial instinct. To catch the lady thrushes, he had to resort to canopy nets

some six meters high and a dozen meters across, capturing the females more or less at random near the nests of his males.

He attached small transmitters to the rump of each bird. He noted that each lasts "about 60 days; that's how long we have to track these birds." The little fanny packs aren't powerful, so Jirinec uses radio telemetry to find each frequency. "We can dial in that frequency to a receiver and use a directional antenna to find out where that signal is coming from." Thrush location by radio telemetry means working the woods with a breadbox-sized receiver, a GPS unit and threading that antenna through the trees.

He assumed that the shy wood thrushes would be homebodies, rarely straying

from the patch they've claimed. A few days in the woods made him revise his thinking. He noted, "56 percent of the birds actually move their territory, usually after something eats their nest."

Jirinec and 16 undergraduate volunteers found the new homes of most of the birds, but the relocations posed some new and unforeseen challenges. His birds flew from public spaces to less public locations, such as properties owned by the US Navy and the Central Intelligence Agency.

Following an analysis of how much time each bird spent in each section of its home range, they visited each habitat to take samples and measured various aspects of the trees, such as diameter. "We evaluate what's on the ground—leaf litter or needle cover? And we take food samples."

He picked up and processed 370 items from the wood thrush menu—ticks, earthworms, spiders—their location pinpointed by GPS. He's using the bird location surveys,



A wood thrush in his native habitat, fitted with leg bands and a small backpack transmitter.

Photo courtesy Vitek Jirinec.

habitat evaluations and food samples to put together an understanding of how the wood thrush population is faring in various landscapes.

His preliminary findings indicate that wood thrushes seem to gravitate to areas that have the greatest source of invertebrate food. It sounds like a no-brainer, but Jirinec says that there is no good way to identify a particularly food-rich area by just looking at the landscape. This data might suggest that the thrushes devote considerable time to scoping out potential home sites.

Jirinec's data does not entirely support earlier concepts that indicate that the species will only live in deep woods, and

like to be away from humans. For the thrushes in Jirinec's study, the quality of their woody home patches seems to be at least as important as the quantity, the size of available territory. Jirinec found that his birds like a more mature forest and a high canopy level, for example, and he pointed out that such features can often be found even in developed areas, away from the deep forest.

"It's too simplistic to say: fragmented landscape, bad for the birds," Jirinec said. "Let's see exactly what they need in there, and then if those features are missing from the fragmented landscape, then we can say that's it's bad for the birds."

Woodland Gardening Workshop

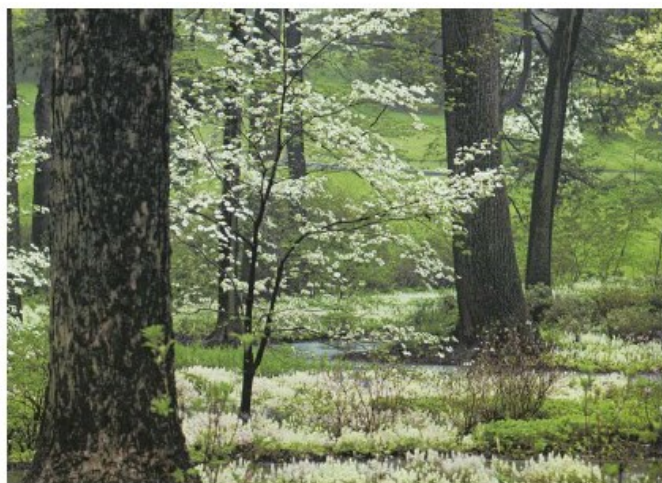
Are you one of the vast majority of Maryland's woodland owners who own less than ten acres? Do you believe that your wooded area is too small to make a difference? Or do you spend too much time maintaining an excessive lawn area that could be better utilized as a natural landscape to provide aesthetic satisfaction and wildlife habitat?

The Woodland Stewardship Education program is offering a two-evening workshop, "Woodland Gardening: Inviting the Woods into Your Backyard," on consecutive Tuesdays, May 5 & 12, 6-9 p.m.

During this workshop, participants will create a map of their property and design their woodland around structural elements such as walking trails, streams, and houses, from the largest compositional elements (shade trees) down to wildflower sweeps and native groundcover masses. Workshop participants will assess how their personal family and property resources support their woodland design efforts and how their landscape management decisions connect with the larger landscape around it. Special emphasis will be placed on transforming excess lawn area to natural woodland areas.

The workshop includes:

- Conservation landscaping practices that you can apply to cultivate a resilient woodland ecosystem using an expanded palette of native plant communities to attract greater wildlife diversity
- Woodland aesthetic design considerations, such as distilling the essence of the forest (biomimicry), creating spatial and temporal layers, framing and enclosing views, and celebrating natural light and form



- Forest botanical enterprise opportunities, such as floral, edible, and medicinal products, that further invest your involvement in woodland gardening
- A forest shinrin-yoku meditation experience that enriches your sensory enjoyment of your woodland sanctuary.

The workshop will be held at the Charles County Extension office, 9375 Chesapeake St., #119, La Plata, MD 20646.

The fee is \$35.00 To register please send a check or money order made out to "University of Maryland" to:

Lyle Almond
Forest Stewardship Educator University of Maryland
Extension Wye Research & Education Center
124 Wye Narrows Drive
P.O. Box 169
Queenstown MD 21658-0169

EPA Issues New Wood Stove Rules: How Consumers Will Be Affected

On February 3, 2015, the US Environmental Protection Agency (EPA) issued new clean-air standards for residential wood heaters. According to the EPA, these new standards strengthen current guidelines to make new appliances “significantly cleaner and improve air quality in communities where people burn wood for heat.” The updates are based on improved heater technology and will strengthen emissions standards for new woodstoves. Additionally, these new standards for the first time regulate several types of previously-unregulated wood heaters, including outdoor and indoor wood-fired boilers (commonly known as hydronic heaters) and indoor wood-burning forced air furnaces.

The rule becomes law on May 15, 2015, but changes will not be noticed by consumers until January 1, 2016. At that time, many inexpensive wood stoves, those in the \$300—\$500 range which had previously been popular yet did not meet current EPA standards, will disappear from the market. Stoves sold after the January 1, 2016 date must not emit more than 4.5 grams an hour of particulates. That standard will be tightened to 2.0 grams an hour on May 15, 2020.

Pellet stove consumers will likely not notice much change with the new standards. Although all pellet stoves will have to be certified by the EPA as of January 1, 2016, and will also have to meet the 2-grams-an-hour standard by 2020, most pellet stoves already meet this standard. Some manufacturers may develop models that are even more efficient in the coming years.

Perhaps the most noticeable change for consumers who have been in the market for woodstoves will be the discontinuation of “hang tags.” Previously, woodstove models came with hang tags that allowed consumers to identify models that met current EPA standards. With the new standards, the EPA will issue special, voluntary hang tags only for those models that already meet the 2020 standards.

Wood stove retailers are permitted to sell their existing inventory until December 31, 2015. Consumers should be aware of special discounts of the inefficient woodstoves and boilers before that date.

It is important to understand that the rule will not affect existing woodstoves and other wood-burning heaters currently in use in people’s homes. Fireplaces, corn and coal stoves are not covered by EPA regulations. The EPA did not set standards for masonry heaters at this time, but has requested the Masonry Heater Association to develop test-

ing standards so that they could be included in upcoming EPA standards, which are slated for 2023.

These new regulations have led to heated debate among industry leaders and legislators. (See [Branching Out Spring 2014](#) for background.) The EPA has set a May 15, 2015 date for those wishing to file suit over the new rules; the main stove and boiler association, the HPBA, has already filed a suit in District of Columbia district court. The association will likely claim that the 2020 emission standards are unattainable. On April 15, three air quality groups, including the American Lung Association, filed a motion to intervene in the HPBA’s suit, asserting that the standards should be implemented as is. Several states, including Missouri, Michigan and Virginia, have passed resolutions barring state agencies from enforcing the new rules, although the EPA’s directives clearly state that the standards do “not impose any requirements on state and local governments.”

As with all changes in regulations, the best tactic for consumers in search of a new woodstove is education. The Maryland Dept. of Energy’s website ([here](#)) has information about its residential stove grant program. The EPA’s website has links to summaries of the new standards [here](#). The Alliance for Green Heat’s blog on March 16, 2015 ([here](#)) has a concise summary of the new regulations and their impacts.



This issue’s Brain Tickler ...

The famous Wye Oak held the title of “Maryland’s Biggest Tree” for 62 years, from 1940 until it was toppled in a windstorm in 2002. The state’s new titleholder is pictured below. What species of tree is this?



*Last issue’s Brain Tickler:
The branch will still be six feet off the ground.*

A Forgotten Forest Lies at the Bottom of a Lake in Maine

Oliver Harriett, bobvila.com

In remote Millinocket, Maine, there are as many as 1 million cords of wood resting at the bottom of Quakish Lake. Since 2009, Maine Heritage Timber has been pulling those logs out of the water, then milling them into flooring, tabletops, furniture—a diverse range of wood products, all sharing a remarkable backstory.

Back in the early 1900s, logging was big business in eastern Maine. Since interstates and railroads had not yet criss-crossed the country, rivers were the primary means of transporting felled trees. At the time, Quakish Lake, part of Penobscot River system, served as a holding area for logs en route to the Great Northern Paper Company. And while much of the old-growth wood successfully made its destination, some of it sank and sat, silently and untouched, for a hundred years.

You might think that, after so long in the depths, those sunken timbers would emerge degraded and useless. But if anything, those logs were benefited by all that time spent underwater. The deep, cold lake water—and the absence of sunlight, oxygen, and pests—worked to preserve the wood, leaving it strong and in virtually pristine condition. And as a result of

the wood's prolonged exposure to water, many logs developed truly unique, seldom-seen, non-duplicable hues and patinas.



Top: Heavy machinery lifts sunken timber.
Above: Reclaimed spruce and fir pulpwood logs as flooring.
Photos courtesy Maine Heritage Timber.

Maine Heritage Timber employs heavy machinery to excavate, then sends the wood to shore on a barge, where it's kiln-dried. Only then does the company know what can be made of the haul. But everything pulled from the lake is somehow put to use. The best and most suitable wood becomes board lumber for the company's consumer products, including flooring and wainscoting. Meanwhile, the unusable wood gets ground into pulp (sold to mills) or biomass (sold to the energy industry). The shavings are sold for animal bedding, and even the rocks that are uncovered are washed clean and sold to local landscaping outfits.

Though Maine Heritage Timber expects to continue work here for at least another 20 years, no one knows exactly how much wood lies at the bottom of Quakish Lake. Amid the uncertainty, one thing is abundantly clear: The company's customers get wood that boasts, not only rare beauty, but a fascinating history as well.

Events Calendar

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

May 4, 2015
7:00 PM—9:15 PM

Maryland Tree Farm Committee Informational Event
Wicomico County, MD

The Maryland Tree Farm Committee will be holding the first of several Informational Events throughout Maryland on May 4 for all current Tree Farmers and for any wood-

land owners who have an interest in joining the Maryland Tree Farm community.

Each event will:

- help Tree Farmers learn more about the Tree Farm program in Maryland
- help Tree Farmers understand the benefits of being in the Tree Farm program, and
- will include a "question and answer" opportunity for Tree Farmers to ask questions and get more information from local DNR foresters and staff.

These events are free, but an RSVP is requested.

Additional "Informational Events" will be held throughout 2015. For a complete schedule, go to https://extension.umd.edu/sites/default/files/docs/programs/woodland-steward/SpringTreeFarmPC_6x11.pdf

May 5, 2015
12:00 PM—1:00 PM

Tips for Success in Establishing and Managing Forested Stream Buffers

Online webinar

Join David Wise, Watershed Restoration Manager at Stroud Water Research Center in Avondale, PA for a free webinar as he discusses the Center's work restoring forested buffers and researching how to do it more effectively for the past 20 years. Learn about proven techniques for tree planting and how using proven maintenance methods can increase survivorship of tree plantings by 4 times and increase growth rates two-fold.

For more information and how to register, go to <http://extension.psu.edu/natural-resources/forests/events/tips-for-success-in-establishing-and-maintaining-forested-stream-buffers-20150505>.

May 5 & May 12 (two evenings), 2015
6:00 PM—9:00 PM

The Woods in Your Backyard

Charles County Extension Office, La Plata MD

Please plan to attend both evenings of this workshop!

The registration fee for the entire two-session course is \$35 per individual (family). For more information, see the box on page 9 of this issue or contact Lyle Almond, UME Forest Stewardship Educator, at 410-827-8056 ext. 125 or lalmond@umd.edu.

May 19, 2015
9:30 AM—3:45 PM

Emerald Ash Borer Tool Kit: Biology, Research, and Management of EAB

James & Anne Robinson Nature Center, Columbia MD

Plan to attend this workshop that will provide important information about current efforts to manage the Emerald Ash Borer infestation, including the insect's biology and impacts, new advances in bio-control, management in both urban and suburban settings, and tips for managing

potential woodland infestations.

Lunch and refreshments will be provided. Education credits are available. For complete details and registration, go to <http://www.eventbrite.com/e/the-emerald-ash-borer-tool-kit-biology-research-and-management-of-eab-tickets-16413700821>.

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