



OHIO Woodlands Water Wildlife



Spring Summer
2013

An Ohio Woodland Stewards Program Publication

The Ohio Woodlands, Water, and Wildlife Newsletter is published in part with funding from the Renewable Resource Extension Act (RREA).

The Viburnum Leaf Beetle

The Viburnum Leaf Beetle (VLB), *Pyrrhalta viburni* (Paykull), is an invasive species that was introduced into North America from Europe. VLB was first discovered and identified in North America in 1947 in the Niagara Peninsula of Ontario, Canada. However, damaging populations infesting viburnum plants were not observed until 1978 in the Ottawa/Hull region of Canada. In 1994, VLB was detected in the United States in Maine, then in 1996 in New York. VLB continued to spread south and west through New York into Pennsylvania, and in 2002 was found in Ashtabula County, Ohio, where it appeared to have been established for at least two years based on egg pit scars from two different growing seasons. As of 2013, VLB has spread into the Canadian Maritime Provinces (New Brunswick) and portions of Connecticut, Illinois, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Vermont, Washington, and Wisconsin. VLB is well established in northeastern Ohio and is expected to eventually spread throughout the state.

VLB larvae and adults consume the foliage of plants in the Genus



A Pair of Adult Viburnum Leaf Beetle (VLB).
Photographs: Curtis E. Young, Ohio State University Extension

Viburnum to support growth and development. Larvae are present and feed in the spring, and adults are present and feed in the summer. Most adult activity occurs from mid to late summer, but a

few adults may be found on host plants until the first heavy frost in the fall. Some VLB hosts are more preferred and susceptible to VLB feeding and will be the first to be attacked in new areas of infestation. At the top of the list of preferred VLB hosts are arrowwood (*V. dentatum*), American cranberrybush (*V. opulus var. americanum* = *V. trilobum*) and European cranberrybush (*V. opulus*) viburnums. These plants will be attacked in both native populations and ornamental plantings. The susceptibility of other Viburnum spp., cultivars and hybrids to VLB feeding ranges from highly susceptible to highly resistant. For a list of susceptibility ratings of numerous Viburnum plants to VLB feeding, see <http://www.hort.cornell.edu/vlb/suscept.html>.

In areas where large VLB populations have developed, viburnum shrubs can be totally defoliated by the cumulative feeding activity of the larvae and adults. If left unchecked, VLB activity can kill ornamental viburnums in nurseries and landscapes as well as viburnums in natural areas.



Viburnum Leaf Beetle "Capped" Egg Pits.



Adult VLB feeding on *Viburnum dentatum*

VLB is a complete metamorphic insect with four distinct stages in its life cycle - Egg, Larva (3 larval instars), Pupa and Adult. VLB overwinters in the egg stage. Eggs are ball-shaped (about 1/16" in diameter) and yellow-brown to brown in color with a sculptured surface. Eggs are not laid in plain view,

they are laid in pits (3 - 8 eggs/pit) chewed into the new shoots (current year's and sometimes the one-year old growth as well). Once the pits are filled with eggs, the pits and eggs are covered with a "cap" of chewed bark and wood mixed with saliva (Figure 1). Capped pits, singular or in rows can be observed from July through the following spring.

By early to mid-May, the eggs hatch and the larvae (grubs) disperse to the tender, newly expanding viburnum foliage (coincident with the full bloom of Koreanspice viburnum). Newly hatched larvae are tiny and dark in color, but lighten as they grow and elongate. Larvae are worm-like, grow to a length of about 1/2" and are yellow-green in color with a pattern of black spots, and black head and legs.

The larvae feed on the underside of the leaves between the veins of the leaf. Feeding initially appears as a skeletonization (lower leaf surface and middle layer of leaf is consumed and upper leaf surface is left intact). As the larvae grow, their feeding becomes more aggressive and holes are produced through the entire leaf. Heavy feeding by the larvae can result in leaf drop to total defoliation. Larvae may also move to the new, green-stem growth and chew on the green bark girdling the young stems resulting in stem dieback. Larval feeding continues through late spring to early summer. Once larval feeding is complete, larvae abandon the host plant, transverse down the plant to the soil, where they enter the soil to pupate.

Pupae are approximately 1/4" - 5/16" in length, and start out bright yellow in color, but are not often seen because they are hidden in the soil. The pupal stage lasts 10 - 14 days.

Adults appear in mid-summer (late June-early July) and may be found on the host plant until the first heavy (killing) frost. Adult beetles have a typical leaf beetle appearance, are between 1/4" - 3/8" in length (females tend to be larger than males) and mostly golden-brown in color (Figure 2). Beetles may have a metallic sheen appearance when observed in the direct sunlight. The sheen is produced by a thick, golden-grey pubescence. The head, thorax, and elytra (wing covers) are generally golden-brownish, but the shoulders of the elytra and front edge of the front wings are darker brown.

Adults also feed on the leaves of host plants (Figure 3). Adult feeding damage consists of irregular circular holes. Additional damage to host plants is produced by the egg laying process. When a female lays eggs, she will typically chew pit after pit in the young stems. The stems are weakened by the pit-chewing process. The pits are easy

break points on the stem and points where moisture loss occurs. Death of the young stems may occur through the winter. Complete development from egg hatch to adult emergence generally takes 8 - 10 weeks.

Management Recommendations

Mechanical Control: The most effective means of mechanical control of VLB on small plants and small scale plantings is to prune and destroy (bury, burn or place into an active composting pile) infested twigs after egg laying has ceased in the fall, anytime from October to April. The capped egg pits are easy to see on the stems after leaf-drop. When pruning is not practical, a number of pesticides may be effective in controlling VLB.

Cultural Control: Planting species or cultivars of Viburnum that are resistant or less susceptible to VLB may reduce the severity of an infestation preventing defoliation.

Chemical Control: Standard Insecticides: Pyrethroid and other contact insecticides are useful for control of the larvae once they are actively feeding. These same insecticides may also have to be used later in the season in order to eliminate any adult beetles that have flown in from untreated plants. Watch the plants carefully as the adults can move into an area from July through September. Spraying against adults alone is not an effective control strategy.

Neonicotinoid insecticides and other systemics can be used for larval or adult control, but these products should be avoided if plants to be treated are expected to flower within 4 - 6 weeks of application. There is concern that the residues of these insecticides will end up in the nectar and harm pollinators. In this case, use a contact insecticide for control of the larvae and then use a systemic after flowering to control the adult beetles.

Chemical Control: Low-Impact Insecticides: Horticultural oils (generally 2 - 3%) and/or insecticidal soaps are useful for control of VLB larvae. Thorough coverage of plant foliage is needed as these pesticides only kill by contacting the insects. There is some evidence that oils and soaps can also kill the adults, but since there is no residual activity of these products, numerous reapplications will be needed in order to prevent adults from laying eggs.

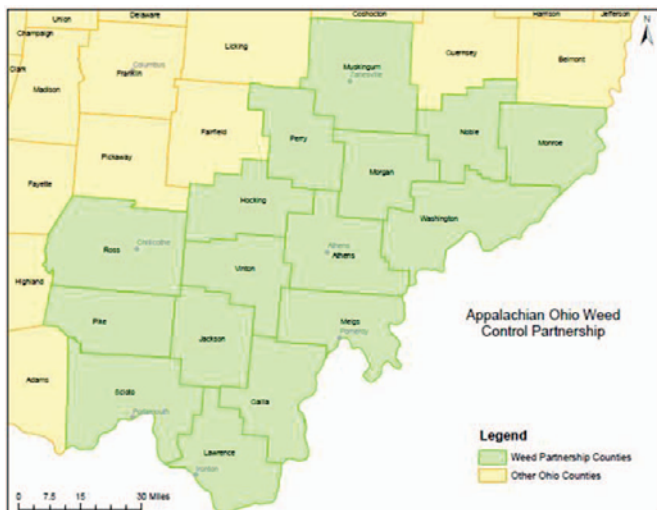
Dealing with Invasive Plants Across Ownership Boundaries: The Appalachian Ohio Weed Control Partnership

Eric Boyda, Coordinator, Appalachian Ohio Weed Control Partnership

The Appalachian Ohio Weed Control Partnership (AOWCP) is cooperative weed management area (CWMA) that was formed on June 26th, 2012. The AOWCP is located in 16 counties of southeastern Ohio: Athens, Gallia, Hocking, Jackson, Lawrence, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pike, Ross, Scioto, Vinton, and Washington counties. It consists of private landowners as well as local, state, federal, and private agencies and organizations working together to increase the awareness and control of invasive plants at a landscape level. Invasive plants are an issue that cross landholder boundaries, and are often not effectively addressed when dealt with on a single property within a landscape. By coordinating the efforts of various landowners and managers, the AOWCP attempts to deal with the issue of invasive plants at a broader scale.

Our goals are accomplished by working with partners to promote land stewardship, conduct research, and exchange information about invasive plants. We work locally, yet are able to pool resources from a variety of sources to combat invasive plant problems throughout the AOWCP boundaries.

- Providing coordination and leadership for a local volunteer monitoring program which collects information about locations and spread of invasive plants to be used in early detection of new infestations.
- Strategically controlling populations of invasive



- plants in the AOWCP.
- Seeking grants and other funding sources to support our goals and assist local landowners.
- Developing a strategic plan to guide us into the future by establishing long-term direction and priorities. The AOWCP accomplishes its goals through a variety of efforts including:
- Educating the public about invasive plants by hosting workshops, field tours and public meetings; and developing and distributing informational materials.

If you are interested in joining, volunteering, or learning more about the AOWCP, or would like to know more about invasive plants, visit our website at www.appalachianohioweeds.org, or contact Eric Boyda at appalachianohioweeds@gmail.com or 740-534-6578.



Busy Breeding Birthing Bunnies

Marne Titchenell, OSU Wildlife Program Specialist

Try to say that 3 times fast! Everyone has been noticing the cottontails out and about in the mornings and evenings, slowly hopping about to and fro, looking for some tasty clover to munch on.

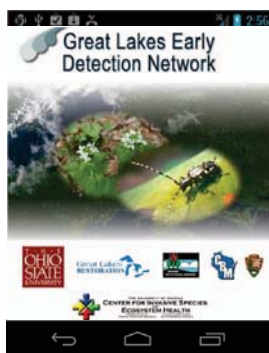


This is a busy time of year for the eastern cottontail rabbit, as it is the peak of the bunny birthing season when litter sizes are the largest. Cottontails breed from roughly February through September in Ohio, and with gestations of only 28 days, the does (female rabbits) are birthing young kits consistently throughout the spring and summer. Female cottontails ovulate upon copulation, meaning they can conceive at any time as long as they are not already pregnant. Often, does conceive again almost immediately after giving birth! Following a "face-off" in which the male and female cottontail undergo an intense staring contest, and then

several charges on the female's part causing the male to jump straight up into the air while the female runs underneath him, the female will allow the male to mate with her. On average, a female cottontail will have 3 litters per year, with the potential for 5, and an average of 5 kits per litter, with the potential for 7. That means a single doe can potentially have 35 young every year! In May and June litter sizes are at their largest, but as July approaches the need to breed and birth slows down and litter sizes are typically smaller, allowing the females a long-deserved rest from a very, very busy breeding birthing bunny season.

BUGWOOD APPS

NOW! for both iPhone and Android



limiting factor. This often restricts beech's local markets to railroad ties and pallet lumber. Ohio beech stumpage has averaged \$110-135 per thousand board feet (MBF) while sawlogs have recently sold for an average of about \$230/MBF (both prices based on Doyle). One inch thick 4/4 kiln-dried lumber prices per MBF have ranged from \$960 for FAS down to \$480 for #2 common.

The wood of beech varies from white to pinkish, being reddish brown at its darkest. The sapwood is largely whitish. Beech is a diffuse-porous hardwood and is one of Ohio's densest diffuse-porous wood species, with a density comparable to red oak. The transition from earlywood to latewood is gradual, as the number of pores and their size tend to decrease from the earlier portion of the annual ring to the latter portion. Each annual ring is distinct from one another due to a dark band of latewood found at the end of each growing season.

The wood rays are key identifiers in distinguishing beech lumber from other hardwoods. Broad rays, like those found in oak, are present and are separated by bands of smaller narrow rays. The

Wood You Know- Beech (*Fagus grandifolia*)

Eric McConnell
Forest Products Specialist, OSU Extension


Approximately ten species of beech are found throughout the world, and all reside in the northern hemisphere. American beech is our native beech species. It is a member of the Fagaceae family, which includes oak. The exact origin of the name Beech is unknown, but the name is significant as it implies "book." Historians believe the early writings of Germanic peoples were inscribed on tablets of beech wood. Also, the first Bible printed using movable type was produced from carved beech wood. Today, beech may be best known for being used in the brewing process for the beer Budweiser. However, the wood is not used to impart any taste in the brew.

Beech is one of the more recognizable species in our woodlands. The smooth, bluish gray bark is a key identifying characteristic, making this tree easily distinguishable even in winter. Beech grows best in the Ohio Valley and Western Appalachians in alluvial soils, however, growth overall is slow. While trees in forested conditions



Beech leaves and seed
(photo: Kathy Smith, OSU Extension)





broad rays are noticeable to the naked eye while the narrow ones may require the use of a hand lens to see clearly. This “banded” appearance is similar to that seen on the results screen of your computer following defragmenting.

On-farm use is a viable option for this species. Logs should be processed soon after harvest and properly stacked due to a high rate of decay. Beech has excellent heating qualities as firewood. The beech nut is sweet and high in protein. Historically the nut was roasted and ground as a coffee substitute, while the dried inner bark was ground for use as a thickener in soups.

The preferred season for processing beech is fall/winter if planning to mill trees into lumber because of its severe warping characteristics. Lumber piles should be properly stickered and covered for protection from direct sunlight. The wood of kiln-

dried beech is hard and difficult to nail; consider putting it into service green or following air drying. A mild kiln schedule must be used to prevent aggravating internal checking and warping in the dry kiln. Beech's machinability overall is good, but it is prone to splitting when nailed or screwed. Thoroughly treat your beech wood product with a designated preservative should your desired application be performed in ground contact.

Structural Characteristics

- Pore distribution: Diffuse porous
- Grain: Straight to interlocked grain
- Heartwood: Whitish with a reddish tinge to reddish brown. Little to no resistance to decay.
- Sapwood: Whitish

Physical Properties

- Density: 39.9 lbs/ft³ at 12% moisture content
- Flat grain shrinkage: 11.9%
- Vertical grain shrinkage: 5.5%
- Estimated air-drying time for 4/4 lumber to 20% moisture content: 60-165 days

Mechanical Properties at 12% Moisture Content

- Bending Strength: 14,900 psi
- Compression strength parallel to the grain: 7,300 psi
- Shear strength parallel to the grain: 2,010 psi

Machining and Finishing Properties

- Planing: Very Good
- Turning: Very good
- Mortising: Excellent
- Shaping: Poor
- Boring: Excellent
- Sanding: Poor
- Avoids Nail Splitting: Poor
- Avoids Screw Splitting: Fair
- Steam bending: Good
- Holds paints: Poorly
- Bondability: Satisfactory, but requires controlled conditions and high-quality adhesives

New Hemlock Wooly Adelgid Infestation Found

A relatively small infestation of Hemlock Wooly Adelgid (HWA) was recently discovered at Cantwell Cliffs in Hocking Hills State Park as part of a joint ODNR and ODA forest health survey program. An extensive survey of the immediate surrounding area has been conducted, and no additional trees have been found.

Plans for dealing with this pest are currently being formulated, but multiple chemical and non-chemical treatment options are being explored. These include treatments such as foliar sprays of horticultural oils or insecticidal soaps, systemic insecticides and biological control. After further survey of the areas surrounding the site of infestation, state and federal officials will determine an appropriate course of action.

ODA will expand its hemlock quarantine to include Hocking County. Ohio regulations that cover the transportation of hemlock materials restrict any hemlock plant material from counties known to be infested from entering non-infested counties in Ohio. The ODA Plant Pest Control Program urges citizens to use caution when transporting wood materials to help protect against the artificial spread of insect pests.

HWA was first reported in the eastern United States in 1951 near Richmond, Va. By 2005 it was established in portions of 16 states from Maine to Georgia, where infestations covered about half of the range of hemlock. It was first reported in natural stands of hemlock in Ohio in January 2012 in Meigs County.

Calendar of Events

June Seminar Invasive Species Series @ OSU Mansfield

June 4th – Focus on emerald ash borer and Asian longhorned beetle

June 11th – Focus on gypsy moth, thousand canker disease on walnut, viburnum leaf beetle and hemlock wooly adelgid

June 18th – Focus on non-native invasive impacts on forest products and wildlife

June 25th – Focus on non-native invasive plants including bush honeysuckle, autumn olive, callery pear and others

June 7th – Name That Tree – OSU Mansfield

June 28th – The Good, the Bad and the Hungry – Dealing with Wildlife Conflict in Your Landscape, Geauga County

July 18th – Bats: Not Just for Caves Anymore, OSU Mansfield

August 9th – Grasslands for Wildlife, Medina County

September 17-19 – Farm Science Review, Madison County

October 18th – Wood ID, Butler County

Ohio Woodland Stewards Program
The Ohio State University
School of Environment & Natural Resources
210 Kottman Hall
2021 Coffey Road
Columbus, OH 43210

Non-profit Org.
U.S Postage
PAID
Columbus, OH
Permit # 711

facebook

Ohio Woodland Stewards is now on Facebook.

Come find us at:

<http://www.facebook.com/pages/Ohio-Woodland-Stewards-Program/197418573782?ref=nf>

Check Us Out On The Web!

Look for newsletter articles, links to fact sheets and other publications by browsing our site. Registration for upcoming Woodland Stewards classes may also be done electronically.

Go to:

<http://woodlandstewards.osu.edu>

Kathy L. Smith

Program Director - Forestry

Ohio Woodland Stewards Program Coordinator

Contact Us!

For program information contact Mary Slyby at 614-688-3421 by email:

ohiowoods@osu.edu

or by mail at:

Ohio Woodland Stewards Program

School of Environment & Natural Resources

210 Kottman Hall

2021 Coffey Road

Columbus, OH 43210

OSU Extension embraces human diversity and is committed to ensuring that all educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, age, gender identity or expression, disability, religion, sexual orientation, national origin, or veteran status.

Keith L. Smith, Associate Vice President for Agricultural Administration and Director, OSU Extension

TDD No. 800-589-8292 (Ohio only) or 614-292-1868