

## UPCOMING EVENTS

- NOV 16** **Eagle Day - Indoor Educational Fun for Kids & Families**  
Hawley, PA
- DEC 7** **Eagle Watch Volunteer Training Day**  
Lackawaxen, PA
- JAN 11** **Eagle Watch Bus Tour**  
Lackawaxen, PA, 10am-1pm
- JAN 18** **Eagle Watch Bus Tour**  
Lackawaxen, PA, 10am-1pm
- FEB 1** **Eagle Watch Bus Tour**  
Lackawaxen, PA, 10am-1pm
- FEB 8** **Eagle Watch Bus Tour**  
Lackawaxen, PA, 10am-1pm
- APR 25** **Foods of the Delaware Highlands Dinner**  
Hawley, PA

**Save the Date!**  
**Women and Their Woods**  
**Educational Retreat**  
 September 24th - 27th, 2020  
 Boyds Mills, PA

Visit [www.DelawareHighlands.org](http://www.DelawareHighlands.org), or call 570-226-3164/845-583-1010 to learn more.

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- **Native and Invasive Spotlight: Water Chestnut and Halberd-Leaved Tearthumb**
- **Hemlock Woolly Adelgid & Citizen Science**
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### Winning the War on Mile-a-Minute and Kudzu

by Nevin Dawson, Forest Stewardship Educator, University of Maryland Extension

You lounge in the sun on your patio, surrounded by a mix of forest and meadow. Your favorite magazine drops from your fingers as you nod off in the pleasant afternoon warmth. Slowly waking from your nap an hour later, you move to stretch your arms. But something is wrong—you can't move. Startled and now fully awake, you look down and see that leafy vines grew over you while you slept, loosely binding you to your chair. You quickly wrench yourself free and march to the shed for the machete.

Mile-a-minute and kudzu are both exotic invasive vines from Asia that grow extremely quickly. Although neither could actually engulf anyone in an hour, mile-a-minute and kudzu can grow 6 and 12 inches per day, respectively, under optimal conditions. This fast growth and their climbing nature allow these vines to cover trees, houses, and vehicles when left unchecked. In a natural area, they can crowd out most or all native species.

Both vines grow best in full sun and often get started in disturbed areas and forest or road edges. It is up to the vigilance and quick action of you, the landowner, to keep these virulent pests at bay.

Kudzu was intentionally introduced and promoted in the United States as an ornamental, forage crop, and erosion control measure. It has spread quickly enough in southern states to earn the label "the vine that ate the South." It's a perennial semi-woody vine with alternate, deciduous, compound leaves with three broad leaflets, each up to 4 inches across. Leaflets are hairy and may have lobed edges. Its purple flowers are a half inch long, and grow on upright stalks in the late summer. Flat dry hairy bean pods develop from the flowers.



Kudzu; photo by John J. Mosesso.

The plant is probably not spread much by seed, but by

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The Delaware Highlands Conservancy is a land trust dedicated to conserving our natural heritage and quality of life in partnership with landowners and the communities of the Upper Delaware River region.

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**ADMINISTRATION & GIS**

Jason Zarnowski

t: 570-226-3164

t: 845.583.1010

[www.DelawareHighlands.org](http://www.DelawareHighlands.org)

*Highlands LandLines* is a semi-annual newsletter for landowners who have a conservation easement with the Conservancy.



**What is Highlands LandLines?**

You already receive the Delaware Highlands Conservancy's regular newsletter, *Highlands Journal*. Our newsletter is distributed to all of our landowners, members, and other like-minded folks who are interested in the Conservancy's activities, accomplishments, and conservation goals.

**This publication, *Highlands LandLines*, comes to you twice a year and is dedicated to landowners.** *LandLines* provides you, the landowner, with useful information and tips for the stewardship of your land and conservation easement. This publication is also available electronically in the Landowner Corner on [www.DelawareHighlands.org](http://www.DelawareHighlands.org).

**Participate in LandLines!**

We are interested in your ideas for future articles and features, or your comments on the publication in general.

We'd love to know what you think!



**A Note from Nicole**

Dear Landowners,

As I am finishing up this year's monitoring season, I want to thank you all for making my first monitoring season at Delaware Highlands Conservancy remarkable. It has been a great pleasure walking your lands and experiencing the beauty that is the Upper Delaware River region. For those of you that I have met, thank you for the lovely conversations and guided walks on your beautiful properties. For those of you that I have yet to meet, I look forward to meeting you soon.

We are going to kick off the 2020 monitoring season in March, so get your calendars ready because it will be here before you know it! Please note that you can always contact me with questions about your conservation easement and to set-up the annual monitoring visit if you have a date and time in mind that works best for you. Also, if you are interested in attending monitoring visits on other conserved properties, please email me at [nicole@delawarehighlands.org](mailto:nicole@delawarehighlands.org) to be added to our list of monitoring volunteers.

**Thank you for being incredible land stewards and for helping to conserve the natural resources of the Upper Delaware River region.**

*Nicole*

Stewardship Associate  
[nicole@delawarehighlands.org](mailto:nicole@delawarehighlands.org)  
570.226.3164 x4





## Eat the Invasives Recipe: Autumn Olive Jam

by Janet Pesaturo

This autumn olive jam is thick and delicious, and full of health-promoting antioxidants. I use the old-fashioned cook-down method, boiling off a lot of water. That helps prevent separation into a watery layer and a pulpy layer, which happens to autumn olive jam when you take a shortcut and add pectin. Autumn olive is a great edible wild berry for jam, because it's nice and tart—and because the boiling process kills the seeds, preventing propagation of this invasive plant.

Native to Asia, *Elaeagnus umbellata* goes by the common names of autumn olive and, more generously, autumn berry. Because it is a non-native plant, autumn olive is an ecological problem here in North America, and chances are good that you have it growing right under your nose. But if you don't have it in your area, please do not plant it. Instead, purchase frozen autumn olive berries.

### Recipe

Makes a little more than four 1/2-pint jars

- 7 and 1/2 cups ripe autumn olive berries
- 3 cups water
- 2 unpeeled, under-ripe apples (preferably McIntosh), cored and chopped, to add a natural source of pectin
- 1 and 1/2 tbsp lemon juice
- 2 cups sugar

1. Simmer the berries, apples, and water in a large pot for about 15 minutes, gently mashing the berries, and stirring frequently.
2. Put the hot mixture through a food mill to remove the seeds and apple peels, pushing through as much pulp as possible. You should have about 4 cups of juice/pulp. The pulp tends to separate into a watery layer and a red pulpy layer.
3. Add the juice/pulp to a large pot, with the sugar and lemon juice.
4. Bring to a boil and simmer, stirring frequently (constantly towards the end, to prevent scorching), until it sheets off the spoon, or reaches desired thickness. It will take 15-20 minutes. Do not use temperature to test for doneness. It gets quite thick well before the “jelling point” of 220 degrees F, and sets into a firm jam as it cools.
5. Pour into sterilized half-pint jars, leaving appropriate head space.
6. Cover with sterilized lids, screw on the rings, and process in boiling water bath for 15 minutes.

### Tips

- After boiling and straining, you can put the remains in the compost without worrying about spreading the plant, because boiling the berries kills the seeds.
- A couple of under-ripe apples are used because their high pectin content helps the jam to set. I use under-ripe McIntosh apples because they soften quickly when cooked and go through the food mill easily, and because I grow them in the backyard.
- I used 1/2 cup sugar for every 1 cup of juice/pulp, because I like the tartness. But in the past I have used 3/4 cup sugar for every 1 cup of juice/pulp, to get a more typically sweet jam.

Source: <https://ouroneacrefarm.com/2014/09/13/autumn-olive-jam/>



## Invasive Species Corner

### Water Chestnut (*Trapa natans*)

Water chestnut is an aquatic invasive native to Europe, Asia and Africa. It was first introduced to North America in 1877 when it was grown in a botanical garden at Harvard University. The plant escaped cultivation and was found growing in the Charles River by 1879. It can now be found in Connecticut, Maryland, Massachusetts, New York, Pennsylvania, Vermont and Virginia.

*Trapa* inhabits shallow areas of freshwater lakes, ponds, slow-moving streams and rivers. The plant spreads by rosette and fruits detaching from the stem and floating on currents and by clinging to floating objects, including recreational watercraft, the pads of boat trailers, and fishing equipment. Ducks, geese and other waterfowl may also play a role in the seeds' dispersal.

Water chestnut can be controlled using manual, mechanical, and chemical methods. Early detection is crucial for containing and controlling spread. However, because the fruits remain viable for up to 12 years in the sediment, it will take several years for both mechanical and chemical methods to be fully effective. Source: [https://www.dec.ny.gov/docs/lands\\_forests\\_pdf/aiswatercfs.pdf](https://www.dec.ny.gov/docs/lands_forests_pdf/aiswatercfs.pdf) and <https://seagrant.sunysb.edu/ais/pdfs/WaterChestnutFactsheet.pdf>



## Native Species Spotlight

### Halberd-Leaved Tearthumb (*Polygonum arifolium*, *Tracaulon arifolium*, *Persicaria arifolia*)

Halberd-Leaved Tearthumb is an herbaceous vine native to North America. The plant gets its name, “Halberd-leaf,” from a medieval weapon that combined a battle-ax and pike on the same handle, while “tearthumb” is from the curved thorns along its stem, which are strong enough to tear into flesh.

The 2-6-foot-long vine can be found stretching across the ground or climbing nearby vegetation. It is identifiable by its triangular-shaped, alternating leaves, which can be 2 1/2-6 inches long and 2-4 inches across. It also has red, pink or white flowers that are very small in size, and un-opening fruits that contain one seed. Most growth and development occur between late June and October.

The vine prefers partial sunlight, and soil with some sand and decomposing organic matter. One can find this plant in swamps, wet meadows, marshes, woodlands, and other areas with consistent moisture levels. It may resemble the invasive weed, mile-a-minute.

Source: [https://www.illinoiswildflowers.info/wetland/plants/hl\\_tearthumb.html](https://www.illinoiswildflowers.info/wetland/plants/hl_tearthumb.html), <https://www.ct-botanical-society.org/Plants/view/472>, <http://climbers.lsa.umich.edu/?p=482>



## Citizen Scientists Joins the Fight Against Hemlock Woolly Adelgid

The Hemlock Woolly Adelgid (HWA) is an invasive insect from Asia that has been devastating stands of Eastern Hemlocks in the Northeast. These native trees have no resistance to infestation by these foreign insects, and there are no native predators to mitigate their population. The Woolly Adelgid feeds by inserting its straw-like mouth part directly into the twig of the tree, which creates a wound that the tree attempts to heal over. Because of the number of insects typically feeding off one tree, these self-healing attempts cause clogs in twig tissue, which impede the flow of water and nutrients, and ultimately result in tree death.

In an effort to combat these invaders, The New York State Hemlock Initiative, in conjunction with Cornell College of Agriculture and Life Sciences and several other organizations, have implemented a protocol that enables citizens to monitor and report on Hemlock Woolly Adelgid activity in their area. Using a program called Nature's Notebook, citizens are encouraged to monitor the presence of Hemlock Woolly Adelgid larva as they enter aestivation (seasonal dormancy) and report their findings.

This information will help scientists get a better idea of the survival rates of dormant HWA, and the ideal time to release predatory species like *Laricobius nigrinus*, a beetle that feeds on the overwintering HWA. More information on how to participate in these monitoring efforts can be found at [www.nyshemlockinitiative.info](http://www.nyshemlockinitiative.info). For more ways to get involved, visit: <https://blogs.cornell.edu/nyshemlockinitiative/get-involved/>.



Nature's Notebook - HWA sample tree

Select an animal  
hemlock woolly adelgid

Add a new animal

Eggs **Y** **N** ?

Active nymphs **Y** **N** ?

Inactive nymphs **Y** **N** ?

Post-dormant nymphs **Y** **N** ?

Dead adults **Y** **N** ?

Inactive nymphs still in dormancy

Submit observation

Enter Observation Details

(Continued from page 1)

rooting of stem nodes. This means that simply dropping a stem in a new site can be enough to start a new infestation. The huge tap root can weigh up to 400 pounds and support as many as 30 vines, each up to 100 feet long. Kudzu has many uses. The vines can be woven into baskets and the plant could produce as much bioethanol per acre as corn. These benefits can be used as an incentive for control, but kudzu should never be planted.

Mile-a-minute is an herbaceous annual vine that was accidentally introduced in Pennsylvania. It favors wet areas and stream banks, and can easily spread downstream by dropping its buoyant seeds into the water. Its triangular leaf and sharp backward-curved barbs give it its other common name—Devil's-tail tearthumb. It also has unique circular leaves that surround the stem at each node. Small white flowers and clusters of berry-like blue fruit emerge from these circular leaves. Birds spread the seeds long distances.



Mile-a-minute vine. Note blueberries in bottom, center of photo. UGA5273095

Both vines can be controlled with a foliar herbicide treatment with glyphosate—like Accord® or Roundup®—or triclopyr—like Garlon® 4 or Element®

4. Kudzu requires a 2% mix, while mile-a-minute only needs 1%. Spray after mid-July so the herbicide is transported into the roots and kills them. Mechanical control with mowing, hand-pulling, or grubbing is also effective. Targeted grazing with goats or sheep also works, especially in locations where access is a problem, or where herbicide use is not preferred.

It's important to understand that when fighting kudzu, you're battling the large energy reserves in its taproot. If you're using mechanical control, you'll need to cut the vines several times over the course of a few years before the plant runs out of energy to resprout.

In battling mile-a-minute, on the other hand, you're fighting the seed bank. Make sure to cut or spray the vines before they go to seed, and continue to control the new vines as they germinate. Small vines can be easily pulled by hand. Seeds are viable in the soil for up to 6 years, so persistence is required. Sites with a heavy infestation may benefit from treatment with a pre-emergent herbicide.

Promising biological controls are under development for both species. A naturally occurring fungus shows great promise for the control of kudzu and a weevil that attacks mile-a-minute is being studied through a release and monitoring program.

This article was previously printed in the Fall 2011 issue of Home and Garden News, the Delmarva Farmer and UME's Branching Out newsletter. Branching Out is published four times per year and distributed to forest landowners, resource professionals, and others interested in forest stewardship. Visit the Forest Stewardship Education web page for subscription information. Source: <https://extension.umd.edu/learn/winning-war-mile-minute-and-kudzu>