

Trumpet Vine

Summer 2024



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Trumpet Vine

Knowledge for the Community from
Loudoun County Extension Master Gardeners

Loudoun County Extension Master Gardener Lecture Series

- Free and open to the public
- 7:00 p.m.
- Hosted by Loudoun County Public Library
- Planned by Loudoun County Master Gardeners

Upcoming Virtual Lectures

- **July 11: Working the Night Shift: Pollination After Dark** by Emily May, Pollinator Conservation Specialist with the Xerces Society's Pesticide Program
- **August 1: The Wild Plants We Need for the Future of Agriculture** by Nan McCarry, Ethnobotanist
- **September 5: Tree Conservation Begins at Home** by Matt Bright, Executive Director at Earth Sangha

Check the event calendar on our [website](#) for virtual lecture links and updates on topics and speakers.

Also, visit us on Facebook: [VCE Loudoun Master Gardeners](#).

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Message From the Editor

Managing the Summer Heat

Carol Ivory, Loudoun County Extension Master Gardener

Between 1951 and 1980, about a third of summers across the Northern Hemisphere were what the scientists defined as a “near average” or normal range; a third were considered cold; a third were hot. By 2023, the scientists found the distribution had shifted so that the vast majority of summers over the past decade have been either hot or extremely hot. This past summer was the hottest on record. Extreme heat affects not only humans and animals but also plants.

Heat stress causes a decrease in root nutrient uptake and leads to a decrease in growth of the entire plant by affecting both root and shoot growth. As gardeners we are most familiar with the dehydration and wilting caused by heat. How hot is too hot? With some exceptions, 90 degrees is too hot. Extended temperatures of 90 degrees will see blossom drop and leaf yellowing.

Plan for the heat:

- Keep your soil healthy with compost, worm castings, and other nutrient-rich organic material.
- Consider installing drip irrigation to provide constant and deep moisture.
- Plant intensively so that dense foliage shades the soil, use ground covers to protect the soil under tall plants. Avoid deep mulch, it can harbor pests and impede the movement of water and oxygen to the plant.
- Choose plants that can withstand the heat.

Mitigate the heat:

- Provide extra water, preferably in the early morning. Water deeply to support deep root growth. Most plants shut down during extreme heat, so if it is over 100 degrees, it may be best to wait to water even if your plant is stressed. Throw a damp sheet over it or mist it lightly to bring the temperature down and reduce water loss.
- Skip fertilization and avoid pruning, the plants need all their leaves for shade.
- Provide temporary shade with shade cloth. Research the best shade cloth for the type of plants you are growing. Use wire arches or garden hoops to hold up the shade cloth.

Unfortunately, the long-term outlook for our climate indicates that we will need to hone our hot weather gardening skills. Watch for new developments in this area.

Master Gardener Invasive Species Program

Ellen Ruina, Loudoun County Extension Master Gardener, Land Steward



Autumn olive - *Elaeagnus umbellata*
[Photo courtesy of Ronald Kielb](#)

An early sign of spring in Loudoun County is a profusion of white blossoms covering acres of ground in front of Tuscarora High School in Leesburg. Across the county fragrant white-and-yellow honeysuckle blossoms line roadsides, and untended fields are covered with blankets of snowy roses. Shrubs with attention-seeking scarlet leaves adorn many local yards and butterflies hover over tall shrubs covered in deep purple or pink flowers. By fall striking rust-colored berries are visible among foundation plantings and in vines atop tall trees.

To the uninitiated, there is beauty in the striking displays of flowers, leaves, and fruits of the Callery pear, honeysuckle, multiflora rose, burning bush, butterfly bush, nandina, and Oriental bittersweet that bloom across our county. But to those with a trained eye, these invasive plants are a threat to the environment and their beauty is tainted by the knowledge of their damaging impact. As defined by the Virginia Department of Conservation and Recreation: **Invasive plants are species intentionally or accidentally introduced by human activity into a region in which they did not evolve and cause harm to natural resources, economic activity or humans.**

Fortunately, many groups in our area are working to educate the community about invasive plants. In fact, the Virginia Extension Master Gardener Program's focus for 2024 is on invasive plants, in order to raise awareness about the problem and possible solutions statewide. Locally, the citizen group Loudoun Invasive Removal Alliance (LIRA) recently helped persuade the Board of Supervisors to retain a consultant to explore how to ameliorate the steady incursion of undesirable plants.

In the fall of 2023, the Loudoun County Master Gardeners (MG) initiated a site visit program to assist property owners with identification and control of invasive plants. On request, a team of several Virginia Extension Master Gardeners will schedule an appointment with a homeowner or an HOA representative to assess the problem. Properties of any size are eligible (although the area covered by the team is limited to three acres). The visit is followed up with a written report that includes information about removal and control for specific species observed. Every site is different, and there is no boilerplate solution. One site may have a single tree or a few ornamental grasses to remove and another site may be covered in acres of invasive vines and shrubs. The MG team's objective is to present feasible recommendations—to address each owner's level of concern, invasive coverage, and provide resources.



Amur honeysuckle - *Lonicera maackii*
[Photo courtesy of Fanghong](#)



Oriental bittersweet - *Celastrus orbiculatus*
Photo courtesy of Tom Potterfield

Invasives are here to stay, but minimizing their presence in any way possible is a small step in the right direction.

To request a Master Gardeners Invasive Group site visit, see the link below. Visits are scheduled on a first come, first serve basis:

loudouncountymastergardeners.org/programs/invasive-site-assessment

For more information, see the [Virginia Invasive Plants Species List](#) and the film [Uninvited: The Spread of Invasive Species](#).

Fall Native Plant Sale

Saturday, September 7, 2024

9:00 a.m. – 3:00 p.m.

Morven Park

Main Visitor Parking Lot

17339 Southern Planter Ln, Leesburg, VA

Fall is the best time for planting trees, shrubs, and perennials!
VCE Loudoun Master Gardeners will attend to participate in this sale and share program information.

www.loudounwildlife.org/event/fall-native-plant-sale

Invasive Plants in Loudoun County: A Focus on Vines

Gaye Mara, Loudoun County Extension Master Gardener

Drive down a country road in Loudoun, and you're likely to see trees shrouded in massive vines, some of them dying, some already dead. Walk through a woodland, and you may see an understory overrun by impenetrable thickets of multiflora rose, wineberry, and bush honeysuckle along with wide swaths of other invasive plants—garlic mustard, Japanese stiltgrass, lesser celandine, and many others.

On forest edges, meadows, and fields, you may encounter groves of autumn olive or callery/'Bradford' Pear or dense stands of Johnsongrass or Canada thistle. Lakes and ponds can be dominated by towering, deep-rooted phragmites on the banks, hydrilla covering the water, and eurasian water-milfoil carpeting the bottom.

Some of these plants were brought to our region from their native areas intentionally because they are attractive and vigorous (i.e. "low maintenance," hurray!). The nursery trade carried them as ornamental plants (in some cases, it still does). Agencies at all levels of government installed or recommended them for erosion control along roadways, slopes, and stream banks or for livestock forage. Others arrived on gusts of wind and flows of water; in the beaks and droppings of birds; in or on boats, planes, trucks, and cars; and in packing materials.



A vine-laden tree
Photo courtesy of Gaye Mara

Fighting Back

Painfully, we have learned these plants are not our friends and are mobilizing a counterattack.

The State of Virginia publishes a list of the invasive plants, ranking them as High, Medium, or Low threats depending on how well established they already are and how badly they damage our natural ecosystems. It includes a watch list of Early Detection Species to keep an eye out for. You can download the

[Virginia Invasive Plant Species List](#) from the Department of Conservation and Recreation website. The DCR website also offers [fact sheets](#) on invasive plants, with illustrations, descriptions, and control recommendations.

The Virginia Department of Forestry has published a good, downloadable chart of control options, "[Non-Native Invasive Plant Species Control Treatments.](#)" It includes chemical and non-chemical control strategies, including suggested timing and the precise herbicide formulations that have been found most effective for specific plants.

The nonprofit [Blue Ridge PRISM](#) also offers free site visits



Multiflora rose and Japanese honeysuckle
Photo courtesy of Gaye Mara

and consultations on invasives. Its website has an excellent and growing collection of [fact sheets](#) on invasive plant species, with control recommendations and good color photos to aid identification.



Tree trunk girdled by a vine
Photo courtesy of Gaye Mara

Last fall, the [Loudoun Invasive Removal Alliance](#) (LIRA), a newly formed coalition of 41 HOAs that are battling invasives in their landscapes, lobbied the county and state for more action. The Loudoun County Board of Supervisors subsequently approved \$250,000 for consulting services to evaluate the invasives situation and propose a program to assist HOAs in dealing with them. Bills approving grant funding for invasive removal were also passed in the Virginia legislature.

Another bill passed this year will require retailers to post warning labels on plants on Virginia’s invasive species list, alerting customers that they are invasive and encouraging them to consider alternatives.

In April this year our tourism office, Visit Loudoun, organized a “Scrape for the Grape” weekend. LIRA and others recruited over 400 volunteers to fan out across Loudoun vineyards. They flagged 147 specimens of invasive

Tree of Heaven for removal and destroyed over a million eggs of the Spotted Lanternfly, a devastating pest of vineyards and orchards whose favorite host is Tree of Heaven. This coming fall, LIRA is planning a pilot program for invasive removal at a representative sample of its member HOAs.

Controlling Invasive Vines

I live in a co-housing community of 18 homes situated on 160+ acres. Over 120 acres of that is dedicated open space, much of it wooded and all of it invaded. Upon advice from a state forester, because we maintain the property ourselves and can’t do it all, we have adopted the removal of invasive vines as a top priority.

Vines can kill a tree in a variety of ways:

- Smothering it with dense foliage that blocks sunlight from the tree’s leaves, thus preventing photosynthesis and starving the tree;
- Strangling it by girdling the trunk and, again, starving the tree by choking off the flow of nutrients through the outermost ring; and
- Weighing it down with heavy growth that rips off limbs or topples whole trees in a windstorm or when laden with ice or snow.

The most damaging and pervasive vines in our region are briefly profiled below. The links in the plant names will take you to online fact sheets with illustrations, descriptions, and control recommendations.

[Kudzu](#) (*Puereria montana var. lobata*), also known as “the vine that ate the South,” is a beautiful vine. It has fragrant trusses of purple flowers and large, bold-textured leaves. It is also edible. Its first U.S. appearance in 1876, ornamenting the Japanese Pavilion at the



Kudzu Flower
Photo: [Cathy Dewitt CC BY 4.0](#)

Centennial Exposition in Philadelphia, created a sensation and led to its wide adoption here. But it has turned out to be a monster, growing up to a foot a day and 60 feet in a season and smothering everything else around it. It has a massive, deep tuberous storage root that in a mature stand can reach 12 feet deep and weigh up to 300 pounds; it keeps the plant going when the top growth is killed by cold or grazing or human intervention and is almost impossible to kill or remove. Any fragments of root left in the ground will send up new plants.

Other beautiful monsters are:

- [Porcelain Berry](#) (*Ampelopsis brevipedunculata*), with clusters of shiny blue, green, lavender, and cream-colored berries;
- [Asiatic or Oriental Bittersweet](#) (*Celastrus orbiculatus*), whose branches are lined with bright red berries nestled in golden outer coats and are valued for holiday decorations;
- [English Ivy](#) (*Hedera helix*), evergreen and revered in holiday traditions and on college campuses since colonial; and
- [Japanese Honeysuckle](#) (*Lonicera japonica*), whose blooms are loved for their fragrance and sweet nectar by children and children-at-heart.

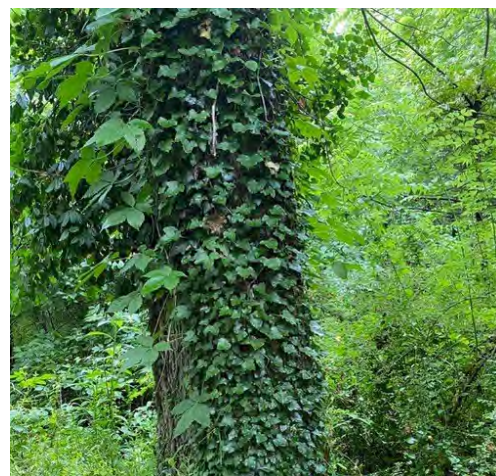


Oriental Bittersweet berries
Photo courtesy of [Esteve Conaway CC BY 2.0](#)

[Mile-a-Minute Vine](#) (*Persicaria perfoliata*) is well named; only Kudzu exceeds its rate of growth. While its distinctive triangular leaves are interesting, the nasty curved barbs on its stems and the undersides of its leaves disqualify it as an ornamental.

In my community, our strategy for eliminating problematic vines generally follows the recommendations in the [Department of Forestry chart](#) mentioned above. We:

1. Pull out seedlings and small plants by the roots in spring when the soil is damp.
2. At any time of year, cut off larger plants at the base to kill the top growth, treat the cut stumps with the recommended herbicide (herbicides are most effective in late summer and early fall) to kill the roots, and either pull off the top growth (if a vine is loose enough that we can do so without damaging the tree) or else cut off as much of it as we can reach to reduce the weight. We also try to check the cut stumps later for new sprouts and, if needed, reapply the herbicide.
3. Bag and dispose of all parts with roots, seeds, or berries, and make a brush pile of the rest.



English Ivy
Photo courtesy of Gaye Mara



Foliage of Mile-a-Minute Vine
Photo: [Leslie J. Mehroff CC BY-SA 3.0](#)

Mature vines can have woody stems over an inch thick that only a saw can cut through. We've found that small, battery-powered chain saws make quick work of that task.

Native Vines

I mentioned eliminating “problematic” rather than “invasive” vines above because our native [wild grapes](#) (*Vitis spp.*) can also overwhelm and kill a tree, so we remove them as well. On the other hand, [Poison Ivy](#) (*Toxicodendron radicans*) and [Virginia Creeper](#) (*Parthenocissus quinquefolia*), which are also native and which some might consider problematic, feed wild creatures with their berries, turn a vibrant shade of red in the fall, and do not harm trees. (Given its toxicity to humans—but not to wildlife—we do remove Poison Ivy from all but our most out-of-the-way spaces.)



Poison Ivy to the right (“Leaves of three, let it be!”) and Virginia Creeper to the left (*quinquefolia* means “five leaves”)
Photo courtesy of Gaye Mara

About This Series

This is the first of three articles about invasive plant species in Loudoun County—why they’re a problem, how to identify them, what we can do to eliminate or control them in our landscapes, and what resources are available to help us.

This first article highlighted current actions in the County and the State to address the overall problem and discussed the control of invasive vines. The second article will discuss invasive trees and shrubs. The third will cover invasive grasses and broadleaf plants.

Acknowledgments: Many thanks to my neighbors Ellen Ruina (also an LCEMG), Paul Sayles, and Lisa Sherper for sharing their considerable knowledge of invasive plants and pointing me to resources about them.

The Changing Perennial Garden

Sharon Perryman, Loudoun County Extension Master Gardener

Several years ago, I started a perennial garden in part of the common area of my neighborhood with transplants from my own garden and the Master Gardener Demonstration Garden.

One portion of the common area faces east and is about 20 x 10 feet. It had been neglected for a few years. Previously someone had planted bearded iris and orange lilies, both of which had gotten out of control. The area was weedy and had a colony of nut sedge. The only redeeming feature was a volunteer red oak that grew from an acorn. After ten or twelve years this tree is now a 30-foot tree, straight and healthy. It's the poster child for planting a tree from seed rather than buying a potted or balled and burlapped tree.

I cleared the area with the help of a couple of workers. We pulled out the iris, lilies, weeds and nut sedge. I put down steppingstones to give the area some structure. The stones were left over from a dry-stack wall that had been built in my yard a few years previously. Creating a path gave the area structure, interest, and even a bit of mystery.

The area received full sun at the time because the volunteer oak tree was small. I planted native perennials that do well in sun: two types of heliotrope, cone flowers, monarda, goldenrod, wild pinks, and asters.

This area did quite well for several years until the oak tree grew tall enough to shade it by late morning. Originally, the area had more than 6 hours of sun, but by the time the oak grew it only had 4 or fewer hours in the mornings. The full-sun perennials continued to grow but were leggy and didn't bloom well, and some not at all.



Left: Steppingstone pathway. Right: Area with elderberry and cone flowers in bloom.
Photos courtesy of Sharon Perryman

With approval from the HOA Board, I hired help to remove the plants that were most affected by the change in light exposure. There was a gray stemmed dogwood in the area as well that was sending out suckers and threatening to take over. We removed all the perennials except the wild pink, which does fine in part sun.

I decided to try plants that are described as part shade/ shade. Rather than choose perennials that grow over six inches, I opted for Christmas and marginal wood ferns (*Polystichum acrostichides* and *Dryopteris marginalis* respectively) as well as Robin’s plantain (*Erigeron pulchellus*). Since the wild pink (*Silene caroliniana*) – see a picture of wild pinks at [Silene caroliniana \(Wild Pink\): mgnv.org](http://mgnv.org) – has done well in that area, I put in a few more. Wild pinks add lovely color in the early spring and stay in bloom longer than many spring flowers.



Marginal wood fern

Photo: [Lady Bird Johnson Wildflower Center](http://ladybirdjohnsonwildflowercenter.com)

The ferns get about 4 hours of sun from 9:30 a.m. to 12:30 p.m. Although it’s morning sun, it may be too much for them. The Christmas fern leaves browned a bit in the sun, but there is new growth, so I hope they will adapt. If there’s too much sun for the ferns, they will be moved to a more congenial spot and be replaced with something that’s happy there.

The evolution of this area demonstrates the changeability of the perennial garden. Planning for the eventual growth of shrubs and trees over time allows the gardener to experiment with sun-loving plants and then with part shade/full shade plants. It underscores the truth that gardens are never static. We know that at the start of a garden it usually takes three years to see a native perennial garden take off. Similarly, when shrubs and trees are initially introduced, they are usually small, but as they grow, they change the light, and sometimes the soil moisture content, of the area. One pleasure of gardening is to observe and respond to these changes.



Christmas fern

Photo: Sharon Perryman

A Brief Primer on Garden Tool Maintenance

Normalee Martin, Loudoun County Extension Master Gardener

It's time to prune all your spring-blooming shrubs. Get it done by early July; if you wait longer, you run the risk of cutting off next year's flower buds. But before you start make sure your tools are ready for good performance.

Even top of the line tools need to be kept clean and sharpened to perform their best and ensure that diseases and viruses are not spread. Dull blades can smash stems and branches restricting vascular flow, weakening a plant. Sap and dirt left on tools not only spread disease but also encourage rust.

Clean after every use

Get in the habit of rinsing your tools with the garden hose, especially any muddy shovels, hoes, or garden fork-type tools. Use a stiff brush if needed. Put tools away dry to discourage rust.

A little rubbing alcohol on a clean rag with good rubbing helps clean and sanitize clippers, pruners, and other hand tools. Linseed oil works well on metal parts as well as wooden handles.

I sometimes clean my clippers and hand hoe with a gentle biodegradable cleanser and water in the kitchen sink. Dry with a soft cloth then lay the clippers on the cloth and spray the moving parts with WD-40. It will displace any dampness and lubricate them.

Gently sand away any difficult rust or sap on pruners and loppers with a fine steel wool. Use medium grit sandpaper on shovels, spades, and larger tools. Stubborn saps can be removed with turpentine or a synthetic oil with solvents.

I keep a large coffee can filled 2/3 with fine sand mixed with half a cup mineral oil. Motor oil can be used. Rubbing it on your clippers or snips with fine steel wool acts as a pumice. You can fill a 5-gallon bucket with the sand oil combination and store shovels or other long handled tools in it.

Sharpeners & techniques

There are quite a variety of tool-bag-sized tool sharpeners. Hardware and garden stores usually carry one or two kinds. You can find a variety in different garden catalogs, and there are small whet stones and diamond files in stores and catalogs. My favorite is a small whetstone I got from a Japanese tool catalog. I put a few drops of oil on the stone to help lubricate and carry away any metal filings.



Sharpening tools
Photo courtesy of Normalee Martin

Make sure to sharpen the *beveled edge* of the blade against the stone, as if you are taking a thin layer off the stone. Use a circular motion on small blades such as those on clippers.

Use a long mill bastard file. That term refers to the cut pattern of the file, in between fine and coarse. Most mill files are made for right-handed people, and the cut patterns, or serrations, are angled so they grip the steel only when pushed in a left to right, forward motion. Do not use a backward motion on the blade. Don't use oil when sharpening with a file; the shavings accumulate and clog the file serrations.

Types of blades

Loppers, clippers, and bypass pruners work like scissors except their blades are curved to hold a stem or branch in place. Sharpen only the beveled side of the blade. Do not sharpen the flat side of the cutting blade or the opposing blade because that will create a space between the blades that prevents a clean cut.

The cutting blades on anvil pruners and loppers come down on an anvil-like chopping block. The cutting edge is beveled on both sides. Sharpen on both sides of the cutting edge, taking care to be gentle and not shave too much from either side. You want to maintain its original shape.

Hedge shears work like scissors. The cutting blade is beveled on the inside edge of the scissor blade. Hand tools with long blades can be held steady with a vise, ensuring a smooth and even stroke of the file. A medium grit file is usually best for sharpening; then finish with a fine mill file. File the outside of the cutting blade and the opposing blade lightly to remove nicks or burrs.

A quick way to sharpen scissors is to use a sheet of aluminum foil folded three or four times. Cutting it in strips with the scissors or straight bladed snips quickly puts an edge on the cutting blades.

Shovels, spades, and hoes work with a blunt cutting edge since they are digging tools. A medium grit file can work out nicks and keep a straight bevel while not removing too much metal.

I can't count the amount of different tool-bag-sized sharpeners I have seen and owned and lost. Those were pocket sized. Most have at least two blades you run the cutting edge of your tool through. Some have two sets of two small sharpeners on either end--one fine and one coarse. You can feel the difference when you use it. The coarse part would be for nicked and rough edges and the fine for a smooth finish.

Clean wooden handles with a stiff brush and use fine grade sandpaper to remove nicks or splinters. Coat handles with linseed oil to help preserve them and to help keep the wood from splintering. Two coats, drying in between, will help keep the wood from breaking.

If you are very industrious, replacing the plastic handle coating is possible with spray or liquid plastic. Or duct tape!

Always clean your tools at the end of your garden season before storage. Store in a dry area. Keeping tools clean helps with longevity.

Removing rust from tools protects them from further corrosion. Chemical rust removers can be harsh while natural methods are just as effective and safer.

White vinegar is a mildly acidic solution for removing rust. Put the tool in a plastic container and fill with white vinegar until it is totally submerged. Let it soak for 24 hours to allow the rust to loosen. Any dark residue will come off when scrubbed with a nonmetal brush. Dry the tool well and put a drop of oil on any moving parts.

Molasses, lime and salt, and colas will also cut rust. Hopefully vinegar works well enough for your tools.

Sharp Tips

- Clean dirt, sap, and rust off tools before sharpening.
- Sharpen only the beveled side of the blade.
- File the flat side of a blade only to remove nicks and burrs.
- Always file in strokes away from your body.
- Do not drag a file backward over the blade on the return stroke.

Taking care of your tools helps you take care of your garden's health. Your tools can become old friends that you can count on.

Environmental Excellence Award for Master Gardener Gravel Beds

Gravel Bed Team, Loudoun County Extension Master Gardeners

The Loudoun County Master Gardeners, working under the leadership of Virginia Cooperative Extension, won a 2024 Loudoun County Environmental Excellence Award for its gravel beds project launched at two county parks – Claude Moore Park in Sterling, and the Franklin Park in Purcellville. The award honors entities showing leadership in environmental impacts, innovativeness and the sharing of best practice.



Gravel Bed with Trees at Claude Moore Park, 2023.
Photo courtesy of Gravel Bed Team

What is a gravel bed?

A gravel bed is an irrigated pile of gravel wherein bare root trees are planted for 3 to 6 months to increase their fibrous root volume and strengthen the stock prior to transplanting into the ground.

The gravel beds constructed at the Claude Moore and Franklin Parks are essentially raised beds – with two-foot walls filled with approximately 15 inches of 3/8 inch pea gravel. A small amount of sand was added to the gravel to improve the water holding capacity of the stone. A soaker hose provides drip irrigation on a timer.

The initial 10-foot square gravel bed was built at Claude Moore Park in late July 2023, planted with 24 native bare root trees (12 species) at the end of July, and harvested in early November. This was replanted with a new set of 25 native trees (8 species) in April 2024. A 10 foot by 20-foot gravel bed was constructed at Franklin Park in October 2023, and first planted with 53 bare root native trees (8 species) in April of 2024.

What is the problem being solved?

Trees purchased from nurseries are commonly grown in pots (containerized) from bare root stock or field grown then dug up with roots and original soil contained in burlap bags (balled and burlap - B&B). In the container, the tree roots tend to circle the pot and become entangled. One partial remedy is for buyers to cut off the largest encircling roots of containerized trees prior to planting. The main difficulty with B&B trees is that tap roots and a significant percentage of lateral roots are lost when field grown trees are dug and wrapped in burlap. In effect, both methods can compromise the tree's growth when the tree is ultimately planted in the soil.

One alternative is to plant smaller bare root trees. These have several advantages. They are cheaper to purchase and plant than larger trees. Containerized and B&B trees can be expensive to buy and haul, and sometimes require special equipment for planting. In addition, smaller trees (1 to 3 feet in height) with stronger root systems grow faster and stronger than larger trees of the same species with girdled roots from pots or missing roots lost during the process of field removal and placement in burlap. After several years, smaller trees with better roots will surpass the size of larger trees with poor root structures.

But the seasonality of bare root tree availability presents a problem. This plant stock is generally harvested in late fall after dormancy, and only available on the market in the spring. This is not the ideal season to plant new trees. They are more likely to die without consistent care and watering in the hot and often dry summers now characteristic of northern Virginia. These trees are more likely to survive if planted in the fall.

How do gravel beds solve these problems?

The gravel bed allows the preservation of bare root stock plant material purchased in the spring in preparation for an optimal fall planting. Even better, the bed commonly increases the number and size of roots - improving the strength and quality of trees being planted in the fall. The gravel bed offers an ideal environment to produce: i) denser, more fibrous roots, ii) thicker roots, and sometimes, iii) longer roots.



Blackhaw viburnum at the time of planting in gravel bed (left) and at the time of extraction from gravel bed 13 weeks later (right).
Photos courtesy of Gravel Bed Team

A limited, initial test of these impacts was conducted in 2023. The master gardener project started in mid-summer with the establishment of the gravel bed at Claude Moore Park. Due to this late start, bare root trees were difficult to obtain. The selected trees were young, but most had been started in small containers. All soil had to be washed off these roots before the trees were planted in the gravel bed. And these 24 initial trees were only in the gravel for about 13 weeks before they were transplanted to a nearby educational plot at the park offering an exhibit of native trees suitable to northern Virginia.

Despite the late start and limited growing period, 75% of the trees displayed significant growth in the width of roots and 42% showed significant growth in the density of roots. Thirty-three percent of the trees had longer roots. The picture below shows an example of this root growth. All of these young trees survived and were well-conditioned for their fall planting.

During the 2024 season, native bare root trees will have at least six months in the gravel bed before their fall planting.

Next steps

This project received seed funding from Amazon Web Services to establish the initial two gravel beds. Currently, the master gardener team plans to complete a full second season of testing and measurement with 75 new bare root native trees. Ultimately, the team hopes to encourage others to install gravel beds, and plant more native trees, contributing to a healthier tree canopy in Loudoun County.

Finally, we encourage visits to these beds in the two parks during the summer and fall season up to tree harvest planned for October. The Claude Moore Park gravel bed can be found just behind the park's Visitor Center. The gravel bed at Franklin Park can be found in a large open area just east of the baseball/softball fields. Additional information about the gravel beds (including construction advice) can be obtained from the Loudoun County Master Gardeners (loudounmg@vt.edu).

Spotlighting Two Versatile Native Plants

Carol Ivory, Loudoun County Extension Master Gardener

Just when I thought I had my favorite native plants all lined up, two more with multiple endearing characteristics burst upon the scene. Both of these plants have colorful foliage that persists over the winter and flowers that are loved by pollinators. Plus, both are deer and rabbit resistant. One of them can even be mowed after flowering and converted into a good lawn alternative.



Lyreleaf sage

Photo courtesy of Carol Ivory

Lyreleaf Sage

Lyreleaf sage (*Salvia lyrata*) is a member of the mint family. It gets its name from its elongated basal leaves that have several rounded lobes. Each basal leaf is shaped somewhat like a lyre. The leaf color varies greatly and ranges from all green through totally deep burgundy. Most plants have green leaves with dark purple or burgundy veins. Like other members of the mint family, lyreleaf sage has a square stem and tends to reproduce prolifically.



Throughout the fall, winter, and early spring, this plant forms a ground-hugging rosette of basal leaves up to 8 inches long with no visible stalk. Then in mid-spring, it sends up a 16-to-24-inch flower stalk with a whorl of blue, tubular flowers that circle the stem. The lower lip of the flower is elongated to serve as a landing pad for butterflies, bees, hummingbirds, and moths.





Lyreleaf sage seedlings
Photo courtesy of Carol Ivory

If you do not want your plants to reproduce, once the flowers begin to fade and drop, you can cut them down. You can use clippers, shears, or even a lawn mower set on the highest setting. But, if you want the plants to form a denser groundcover, allow the flowers to go to seed before cutting them down. The following year you will see the little seedlings.

Lyreleaf sage is a hardy and versatile plant. It's not too picky about habitat. While it tolerates part shade, it does prefer full sun in open areas where the leaves will develop their best color. You'll find it growing wild in abandoned fields, in pastures, along roadsides, and in waste areas. It's a native plant in the eastern half of the United States, from the East Coast to the Great Plains.

As a cultivated plant, it's a good groundcover in difficult spots such as hellstrips and anywhere you want to crowd out weeds or stop erosion. It's a native alternative to ajuga. Its tolerance for foot traffic is a plus. It is relatively drought tolerant but benefits from a deep soaking once a month during the summer.

Lyreleaf sage is the host plant for eight species of Lepidoptera larvae, including wavy-lined emerald moths and hermit sphinx moths. Visiting bees may include carpenter, leaf-cutting, and mason bees. Mourning doves and other birds eat the seeds. In addition, the thick mat of basal leaves shelters many tiny soil dwelling critters.

Salvia lyrata is a medicinal and edible herb. It has some of the same properties of the other sages, but it is not as strong. This sage is mild tasting and has a rather pleasant minty flavor. Fresh young spring leaves are edible in salads or cooked as a pot herb. Gather the entire plant as flowers bloom and dry each plant for later use as an herb.

Here's a recipe for medicinal tea: Add 1 Tbsp. dried herb to 1 cup water. Bring to a boil. Steep 10 minutes, strain, and sweeten to taste. Drink warm at bedtime.

Lyreleaf sage is like golden ragwort—never buy it! Get a few plants from another gardener. It propagates quickly.

Foxglove Beardtongue

Foxglove Beardtongue (*Penstemon digitalis*) is a member of the Plantaginaceae family along with snapdragons, toadflax, common foxgloves, and firecracker plants. Foxglove beardtongue is native and has no toxicity

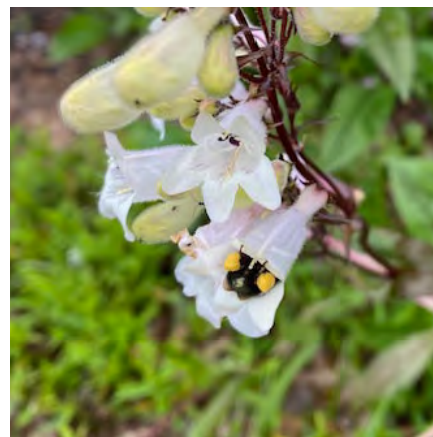


Left: Foxglove Beardtongue,
native and nontoxic
Photo credit: [Missouri Botanical Gardens](#)

Right: Common Foxglove,
non-native and all parts highly toxic
Photo: [North Carolina State University](#),
courtesy Parent Gery

issues for humans or animals and must not be confused with common foxglove, *Digitalis purpurea* which is non-native and is highly toxic.

All penstemon are clump-forming semi-evergreen perennials with an upright habit. They typically grow to 3 to 4 feet with a 2-foot spread. The blooms are two-lipped and tubular, similar to the lyre-leaf sage but larger and longer lasting; the bloom time is several weeks. Penstemon is widely used in native plant gardens, pollinator gardens, rain gardens, and naturalistic plantings. Its tall showy flowers are an excellent backdrop to shorter plants. Penstemon can also be used as cut flowers. It combines well with many native plants including blue-flowered spiderwort (*Tradescantia spp.*) and blue false indigo (*Baptisia australis*).



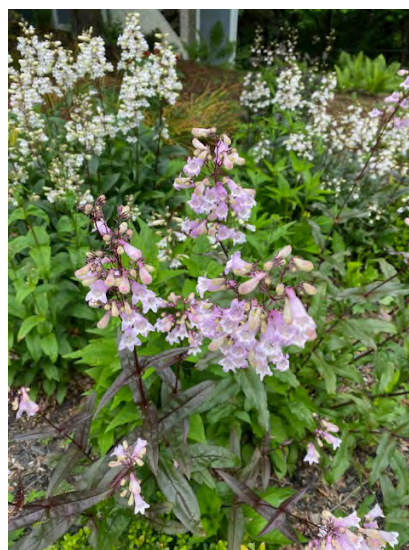
Bumblebee with pollen baskets
Photo courtesy of Carol Ivory



Husker Red cultivar
Photo: [U of Wisconsin Extension](#)

Penstemon provides pollen and nectar at a time when resources are dwindling at the end of spring. In our area, bumblebees are a constant at the penstemon flowers, but many other natives including small carpenter bees, digger bees, leaf cutter bees, and syrphid flies crawl down the tube to drink the nectar and harvest the pollen. In addition to providing pollen and nectar, penstemon is a caterpillar host for the Buckeye butterfly and eight moth species. Then in the fall, the birds eat the seeds.

The straight species penstemon is green with brilliant white flowers. A popular cultivar is 'Husker Red' that has red leaves and bluish pink or white flowers. 'Red Husker' foliage turns green later in the summer. Another cultivar, 'Mystica' has bronze foliage in the early spring that turns red in the fall. Because penstemon are very susceptible to hybridizing with other species of penstemon including cultivars, within a couple years of introducing some cultivars to your garden you can have a colorful and ever-changing mix of color.



Photos courtesy of Carol Ivory

Got the Blues? Then This Plant Is for You! Meet *Platycodon grandiflorus* (Balloon Flower)

Pamela McGraw, Loudoun County Extension Master Gardener

This balloon flower is a real beauty and easy to grow. It is a member of the *Campanulaceae* family which also includes bellflowers and lobelia. It is an herbaceous, clump forming perennial (meaning, a plant with little or no woody tissue and which usually lasts several growing seasons; stems are soft and green, somewhat like a fern's) which faithfully returns, even more robust, each year....so another of nature's wonderful 'exceptions.'



Balloon flowers in bloom - *Platycodon grandiflorus*
Neighbor's photo, with permission

Balloon flowers, of which there are several varieties, range from 1 to 3' in height and colors—light and deeper blue and white. It is so named because its flower buds puff up like balloons before bursting open into bell-shaped flowers with pointed lobes. They bloom throughout the summer, sometimes singly or in clusters atop attractive blue-green leaves, typically 2' in height. This year, I'm seeding a newer variety, *Platycodon Komachi*, which is shorter and whose blossoms remain as 'balloons' rather than open. I'm looking forward to seeing how they develop from their current size.



Platycodon Komachi seedlings
Photo courtesy of P McGraw

This perennial is easy to sow from seed and often blooms its first year, unlike most perennials. It prefers organically rich, well-drained soil in full to part sun. In my yard, they happily bloom under my Dogwoods in a semi-sunny, somewhat dry location. Best to leave foliage intact during the winter months so the plant's crown is not disturbed; new stem growth in the spring quickly identifies what needs to be removed, particularly because the foliage is late to appear the following spring. If one so chooses, the plant stems can be shortened by half

to reduce height. It's best to deadhead throughout the season to assure continued blooms till fall.

Balloon flowers have no serious insect or disease problems....and deer generally leave them alone! While some deer may ignore the balloon flowers, others like to nip off the flower buds.

Zones 3 to 8 provide ideal conditions, making this lovely plant featuring showy blooms, low maintenance and dependability, a good choice for our area. It is native to China, Japan, Korea, and Siberia.

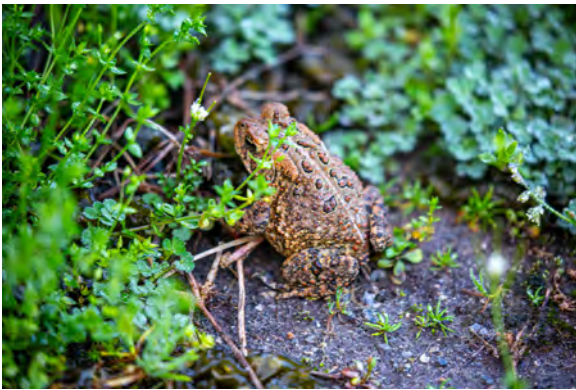


Balloon flower and flower buds.
White residue on leaves is deer repellent.
Photos courtesy of Carol Ivory

Frogs and Toads

Heather Swanson, Loudoun County Extension Master Gardener

No doubt you've encountered many toads while gardening. What do you know about them? Frogs, toads, salamanders, and some lesser-known creatures are in the class *Amphibia*. The word amphibian comes from the Greek word amphibious which means "having a double life." Amphibians generally spend their early lives in water and their later lives on land. All amphibians are cold-blooded, breathe through their skin, and have 4 legs. Frogs and toads are the most numerous and diverse of the amphibians – about 4,750 species. All frogs and toads belong to the order *Anura*, which means "without a tail". All toads are frogs but not all frogs are toads. Toads usually have thicker, dryer skin and are covered with bumps. Their thick skin allows them to live away from water longer than most frogs. Toads prefer to walk while frogs hop. These differences are very superficial. Collectively as anurans, there is no real scientific difference between a toad and a frog. In addition to similarities in appearance frogs and toads both reproduce and develop in water, sing, and are carnivorous. The distinction between frogs and toads is meaningless in the greater scheme of anurans.



American Toad
Photo courtesy of John Eppler

Frogs and toads are found on every continent except Antarctica. More than 80 percent of all species is found in the tropics and subtropics, a great many live in the temperate zones. Their habitats range from temperate forest, deserts and savannas to grasslands, and plains to mountain peaks. They can tolerate an amazing range of conditions. They can live in highly acidic bogs, blazing hot deserts, the cold tundra of Alaska, below sea level in Death Valley and elevations exceeding 9,000 feet in the Rocky Mountains.

The American Toad is the most familiar eastern hop toad who wanders from water after the breeding season and is a familiar occupant of yard and garden as well as woodland settings in this area. Cope's Gray Treefrog is found all over the Loudoun County area of Virginia. They are primarily forest dwellers but may be associated with grasslands and prairies. The Spring Peeper are among the first frog sounds heard each spring in the eastern United States and Canada. The Upland Chorus Frog and Brimley's Chorus Frog are found in the piedmont region, areas in which the rolling hills are higher in elevation than the coastal plains. The Northern Cricket Frog lacks toe pads and seldom climbs. They are scarcely longer than an inch, these small frogs are wary and difficult to catch and can leap long distances for their small size.

The length of a frog or a toad is measured from the tip of the snout to the vent; the legs are not included in the overall measurement. They have a squat body, long hindlimbs, and almost always lack a tail. There are a very few of the species that retain some tail but this is uncommon. Their broad head and thick neck are not very distinct from the body. They have very wide mouths and a long, sticky tongue to catch their



Northern Leopard Frog
Photo courtesy of John Eppler



American Bull Frog
Photo courtesy of John Eppler

prey (usually insects). Most anurans have webbing between their toes to assist in swimming. Some have adhesive pads to help them climb various surfaces.

The size of both a toad and a frog are usually between .8 to 4.7 inches from snout to vent. Their color is extremely variable including green, brown, black, red, orange, yellow, and even blue and white.

Their sounds are impressive in variety. They croak, peep, thrill, snore, bark and chuckle. They have choruses with complex rhythms. The function of their sounds includes

mate attraction, aggression, and distress. Most male anurans have a vocal sac on their throat that inflates each time the animal calls. If you are in the right place at the right time of year, you can hear dozens-sometimes hundreds-of males calling for mates. Some species of frogs and toads can be recognized by their distinctive sounds.

The very best time to encounter these amphibians is shortly after a spring rainstorm when water has pooled. Normally, they sit at the edge of water; when disturbed, they escape by leaping into the water and swimming away. Amphibians, including frogs and toads, should be handled as infrequently as possible. Handling not only spreads germs from your hands to their skin, it also stresses the animal. They are not the type of animal that you caress and cuddle; they are best only observed and admired. Having such a delicate and sensitive skin, most amphibians resent the warmth and saltiness of the human hand.

Frogs and toads are cold-blooded which makes it impossible for them to regulate body temperature as any warm-blooded animal. For this reason, they become inactive when they are cold. In colder climates, they are forced to hibernate for a substantial part of the year. Some will burrow into the soil or mud, some species such as Wood Frogs can actually tolerate being frozen. Since they are cold-blooded and having an overall low metabolic rate, they do not have to be constantly active and feeding. This also allows them to live in extreme environments.



Eastern American Toad
Photo courtesy of Barbara Eppler

Adult frogs and toads live primarily on insects but they will try to eat anything that moves, and is smaller than themselves. Virtually all amphibians are carnivorous. The larger species such as the Bullfrog, eat insects but also small frogs, snakes, turtles, birds, and mammals. They will usually sit and wait for prey as opposed to seeking out prey.

Their most common tactic to protect themselves is to freeze and use natural camouflage to hide them. Some species can change color to match their surroundings. They can leap or burrow to escape a predator. They also can secrete a toxic skin secretion if they are caught. The potency of these skin secretions varies from one species to another. This noxious secretion can often help them escape. Some produce loud distress calls that may startle the predator. They can inflate their bodies in a way that makes it difficult for a snake to swallow them.

Fertilization is mostly external and once mated, the eggs are laid in water, one egg at a time, in a large single mass, or in scattered clumps or strings. Eggs can also develop in or on one of the parents. Many amphibians lay their eggs on the leaves of terrestrial plants. Embryos of most species pass through a free-swimming and feeding tadpole stage, but some develop within the egg capsule and hatch as froglets. Aquatic tadpoles can turn into small toads quickly (less than) two weeks in some species, after a few weeks or months (for most) or after two years or more in some species such as tailed frogs. About 20 percent of the 4,750 species of frogs and toads in the world lack the tadpole stage.



Green Tree Frog
Photo courtesy of John Eppler

The longevity of these amphibians in the wild is not well known. In captivity, adults commonly live 1-10 years, though some have been reported to live more than 35 years.

Frogs and toads are indicators of environmental health. They are affected by habitat destruction and global climate change. Five species, are listed as extinct; in addition, 22 species are critically endangered, 29 endangered, and 56 vulnerable. The chytrid fungus is a disease that is having enormous impacts on amphibian populations throughout the world.

While not all amphibian species are threatened, rapid population declines have been documented around the planet: in the United States, in Central and South America, in Australia and New Zealand, in Europe, and in some places in Africa. Rapid population declines have been concentrated in the western mountains of the United States and in the desert Southwest. In many locations, entire populations have disappeared from one year to the next.

Loss of habitat still remains an important long-term cause of population decline. Most amphibians rely on aquatic ecosystems, such as lakes, streams, bogs, and vernal pools, and these ecosystems have been some of the hardest hit by habitat destruction. Preserving your local stream or wetland is one of the best things you can do for frogs and toads. The frogs and toads are a national treasure worth saving.

Changing Plant Hardiness Zones in Loudoun County

David Rohrbach, Loudoun County Extension Master Gardener

The United States Department of Agriculture, with the assistance of many horticultural, botanical, and climatological experts, calculates and maps plant hardiness zones in the country. These zones are based on the distribution of average minimum winter temperatures in the United States. The zones are broadly divided into ten degree Fahrenheit divisions (1 to 13), and then are divided further into 5 degree half zones with 'a' and 'b' gradients.

Plant hardiness zones offer a partial, but commonly used guide to the suitability for growing various perennials in different parts of the country. Many plant nurseries list zone numbers to highlight where different plants can be expected to survive winter weather. Buyers also need to take account of a wider range of climatic factors in their plant selections, however, including soil type, moisture, wind and sunshine hours.

Late last year, the United States Department of Agriculture (USDA) published a new plant hardiness map for the United States (planthardiness.ars.usda.gov). This updates the last map published in 2012.

The information in this map is derived from 30 years of weather data collected between 1991 and 2020. The high level of resolution in the map takes account of the fact that cities and larger towns hold more heat than their surrounding countryside. Weather patterns are also influenced by elevation and proximity to large bodies of water.

On average, the boundaries of these hardiness zones have shifted by about one-quarter zone compared with the 2012 map – generally warmer. These changes are attributable to multiple factors including the availability of additional data and improved interpolation techniques. Climate change also contributes to this warming, though USDA cites a caveat that these data are not reliable indicators of global warming per se.

The table below lists the changes in plant hardiness zones identified in this map for zip codes in Loudoun County. In general, average minimum temperatures in the western and southern parts of the county have increased, but not quite enough to change a hardiness zone designation. Greater winter warming has been registered in the central and eastern parts of the county – particularly in the Sterling region which shifted from hardiness zone 6b to 7b. Readers can review these maps and find data relating to their own zip code at the website cited above.

Zip Code	2012 Hardiness Zone	2023 Hardiness Zone
20147, 20148, 20166, 20184	6b	7a
20164, 20165	6b	7b
20175, 20151, 20170, 22066	7a	7b
20105, 20117, 20120, 20129, 20130, 20132, 20135, 20141, 20152, 20158, 20176, 20180, 20197	7a	7a

Table: Loudoun County Plant Hardiness Zone Changes, 2012-2023

Finally, it is worth noting that these maps do not register changes in growing season length, or in first and last average frost dates. Ongoing research on frost dates is being conducted under the auspices of the USDA Climate Hub. The Midwestern Regional Climate Center maintains a website (www.climatehubs.usda.gov/hubs/midwest/tools/exploring-historical-freeze-dates-midwest-and-northeast-regions) with a first and last freeze date maps for the northeastern parts of the country, including Virginia. This highlights a small increase in growing season length (approximately 1 day) in Loudoun since 1950 – mostly attributed to a later initial fall frost.



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