March 2024, Vol.10,No.3

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Creating Habitat for Lepidoptera – Butterflies, Moths, and Skippers

By Deborah Harriman | March 2024, Vol.10,No.3

Perhaps the most welcome visitors to our gardens, butterflies enchant us with their vibrant colors and graceful flight. Butterflies, skippers, and their nocturnal counterparts, moths, are insects in the order Lepidoptera, a name derived from the Greek for scaly wings. Look closely and you will see the tiny overlapping scales comprising Lepidopteran wings. Each scale is one color and creates the intricate patterns distinctive to their wings. Butterflies are usually brightly colored while moths tend to have more muted colors. Skippers are dun-colored butterflies that resemble moths. As well as beauty, Lepidoptera add ecological benefit to our gardens. As both pollinators of plants and food for birds, spiders, and other animals, they are important parts of the food web. Butterfly and moth larvae, known as caterpillars, are the main source of nourishment to baby birds. Chickadees need 6,000 to 9,000 caterpillars to feed one clutch of babies. (Tallamy*, 2007*) It follows that, to ensure thriving bird populations, we need lots of caterpillars. There are over 100 species of butterflies in Virginia and over 400 species of moths. Yet the loss of habitat from development, urbanization, climate change, disease, and pesticides has caused a decline in both butterfly and moth populations. To counteract these threats, home gardeners are eager to plant butterfly gardens full of nectar-rich flowers that attract and sustain butterflies. When planting to encourage butterflies, it is also important to feed the larvae. This article will explore ways in which the home gardener can create a habitat that will protect and nourish Lepidoptera in all forms of their lives.

Life Cycle of Lepidoptera

Lepidoptera undergo metamorphosis and have four separate stages in their life cycle: egg, larva (caterpillar), pupa (chrysalis), and adult (butterfly). For simplicity, this article will use the term caterpillar for the larval stage and the term butterfly as a generic terms for adult butterflies and moths.

- **Eggs and Larvae (Caterpillars):** After mating, the female butterfly searches for an appropriate plant on which to lay her eggs. This is the host plant that will feed the hatching larva. Adult butterflies are able to sip nectar from many flowers but most caterpillars can only eat certain varieties of plant and it usually must be a native plant. Monarch caterpillars, who only eat milkweed, are the best-known example of this phenomenon. Some caterpillars can eat multiple native plants, but others are so specialized, they can eat only one species. As they grow, caterpillars molt, or shed their skins several times, eating constantly at each stage. They may spend their entire life on one plant, eating voraciously until they grow large enough to pupate.
- **Pupa (Chrysalis) and Adult:** When a caterpillar is mature, it finds a safe place to hide, spins silk, and attaches to a firm support such as a fence post, the stem of a plant, or the underside of a leaf. There it sheds its skin and turns into a pupa or chrysalis. The pupal stage of development typically lasts 10 – 14 days, but some species may over-winter as a chrysalis. The adult butterfly emerges and begins feeding on nectar, tree sap or rotting fruit and drinks water from puddles. The butterfly mates and the cycle begins again. The life span of a butterfly is typically about two weeks and several generations can be produced in one season. Some species live only a few days and others may live several months. As winter approaches, cold-blooded butterflies must find a protected place to hibernate. They may spend the winter in any stage (egg, larva, pupa or adult), hiding in the bark of trees, in stems of perennial plants, in old logs, on fences, or in leaf litter.

Monarch Chrysalis Photo by Melissa King

Host Plants for Lepidoptera

- **Trees And Woody Plants:** Native trees are some of the most important caterpillar host plants.

In the mid-Atlantic, oaks support over 500 species of Lepidoptera. Willows, native cherries and birches support over 400 varieties. Poplars, native crabapple, maple, pine and hickory are not far behind, supporting 200 to 300 species. (Tallamy, 2007) There is a good chance you have one or more of these trees in your yard or in a nearby wooded area. If you are adding plants to your yard, consider one of these native trees rather than a non-native for your landscape. Serviceberry (*Amelanchier)*, hornbeam (*Carpinus*), redbud (*Cercis canadensis*) and flowering dogwood (*Cornus florida)* are smaller trees that support multiple species of Lepidoptera and one or more should fit in most any landscape. Caterpillars will feast on New Jersey Tea, (*Ceanothus americanus*), highbush blueberry, (*Vaccinium corymbosum*), spicebush (*Lindera benzoin*), chokeberry (*Aronia arbutifolia*), winterberry (*Ilex verticillata*), and native viburnums.

- **Perennials:** Native perennials provide nectar for butterflies, and many are also host plants for caterpillars. Wild strawberry (*Fragaria virginiana*) blooms in spring and supports 60 species of Lepidoptera. Violets (*Viola*), meadow-rue (*Thalictrum*), wild columbine (*Aquilegia*) and wild geranium (*Geranium maculatum*) are another set of must-haves for early emerging caterpillars as they support up to 25 species of Lepidoptera. Milkweed (*Asclepias)*, wild indigo (*Baptisia),* black-eyed susan (*Rudbeckia*), sunflower (*Helianthus*), and rose mallow (*Hibiscus*) provide nourishment in early to midsummer. Joe-Pye Weed *(Eutrochium*), boneset (*Eupatorium*) and New York ironweed (*Veronia noveboracensis*) offer food for late summer caterpillars. Be sure to include asters (Symphyotrichum) and goldenrod (*Solidago*) in your fall garden as they support over 100 species of Lepidoptera.
- **Grasses:** Every garden benefits from the addition of native grasses. Switchgrass (*Panicum)*, broomsedge (*Andropogon virginicus*) and Poverty oat grass (*Danthonia spicata*) support multiple species of caterpillars. Sedges (C*arex*) are at home in shady areas and are food sources for various moths and butterflies, including skippers. Grasses are also hiding places for overwintering Lepidoptera in any stage of their cycle.

Wild Places and Weeds

Skipper on aster
Photo by Deborah Harriman

Have you seen butterflies flitting around areas that are wild rather than cultivated? Roadsides, medians, parks, and other public settings support butterfly and caterpillar populations if they are thick with native plants and pesticides are eliminated. The next time you walk along a wooded path, notice how many butterflies you see. The undergrowth at the edges of forests hosts many caterpillar species. Plants in these wild areas are often considered weeds and are not typically used in the home garden but are rich in food for both adult and larval butterflies. Native thistle, common milkweed, nettle, dogbane, tick-trefoil and wingstem are examples. In your own yard, is there an out-of-the-way corner, perhaps in the back or behind an outbuilding, where these “weeds” can flourish? If you live next to woods, can you let the undergrowth spread unmolested? Be sure to allow only native varieties to settle in and remove any invasive plants that might try to take over. Virginia creeper is a ground cover that is often considered a nuisance in a manicured bed. Think of it instead as a lovely native ground cover that feeds caterpillars and offers hiding places for them and other creatures. If you have turf grass, can you forego the chemicals needed for the manicured look and let violets, clover and plantain take hold?

Winter Cover

Butterflies are cold-blooded and hibernate in the winter. Different species will overwinter in one of the four stages of their life cycle. Adults might hide in peeling tree bark, under leaves, on old logs or on fences. They

might find a spot in a shed, barn or other building. Pupae might attach in a protected spot on a structure, branch, or stem. Leave stalks of native perennial plants standing until spring and allow fallen leaves to lie on the garden beds. These provide secure hibernating spots for butterfly eggs and caterpillars.

Pesticides

The gardener who wants to attract wildlife must avoid pesticides. While often touted as safe for birds, fish, pollinators, and pets, “natural” pesticides can be harmful to caterpillars. Bt (*Bacillus thuringiensis*) is a bacterium found naturally in the soil and is used in pesticides to kill the larvae of beetles, flies, mosquitoes, and moths. Horticultural oils and insecticidal soaps kill the insects they touch, which includes caterpillars. By following good cultural practices that maintain healthy plants and providing a diverse habitat that encourages a variety of insects and wildlife, the home gardener may be able to keep insect damage in check and avoid chemical controls. As much as we want to “grow” caterpillars, some are unwelcome visitors to our gardens. Monitor your plants and learn to identify those that need to be removed and those that are best left unharmed.

Caterpillars in the Vegetable Garden

If you are growing vegetables or herbs, you will likely see caterpillars on some of your crops. The home gardener usually can live with the damage caterpillars inflict and still have a harvest. Here are three Lepidoptera commonly seen in Central Virginia gardens.

- **The cabbage white butterfly** is ubiquitous and its caterpillar, the cabbage worm, attacks plants in the brassica family — broccoli, cabbage, cauliflower, collards, and kale. The cabbage white is an imported species and, while a nuisance, can usually be controlled organically by the home gardener. If picking them off by hand, using row covers, or living with some damage is not an option, consult you local extension office for organic controls.
- **Hornworms** are the caterpillars of the five-spotted hawk moth and can defoliate a tomato plant. They are large and easy to pick off by hand, but this might not be necessary as nature often takes its course. White, rice-like appendages attached to the hornworm are wasp larvae that feed on and decimate the hornworm — problem solved.
- **Black swallowtail caterpillars** feed on vegetables and herbs in the carrot family – carrot, celery, chervil, cilantro, cumin, dill, fennel, lovage, parsley, and parsnip. This native caterpillar has adapted to these non-native plants and can eat them. The home gardener should decide whether to remove these caterpillars or live with them. Planting multiple crops and planting enough to share is often a good option. Queen Anne’s Lace is a favorite of this caterpillar and can be left to grow in your “wild” place.

Caterpillars on Native Trees

- **Bagworms** are the larvae of a native moth. They feed mostly on conifers, especially arborvitae, junipers, and cedars. Left unchecked, they can defoliate a small tree, and it can die. They chew on the leaves and spin bags resembling small pinecones where they spend the winger. Bags appear in late summer or early fall. Monitor your susceptible trees, pick off the bags before they hatch in the spring, and destroy them.
- **Eastern Tent Caterpillars** appear in the spring; Fall webworms appear in late summer. They are native to the eastern U.S. and live in groups in silken bags on the branches of native trees. They are commonly found on cherry, apple, and crabapples, but will feed on birch, black gum, willow, witch-hazel, maples, and oaks. Their webs and defoliation can be unsightly, but their foraging is seldom lethal to trees. They have numerous natural enemies that help keep them in check. If a heavy and potentially deadly infestation is present, consult your local extension office

to determine proper control.

- **Spongy Moth (formerly called the European gypsy moth)** arrived from Europe in the 1860's and can be found in most East coast states. Its presence in a landscape can be deadly. A devastating pest, spongy moth caterpillars feed on over 300 species of trees and shrubs. The defoliated trees then become susceptible to diseases and other pests and can die. Learn to identify this caterpillar and report spotting the egg, caterpillar, or moth to your local extension office.
- **Sawfly larvae** resemble caterpillars but are not Lepidoptera and do not turn into butterflies. Learn to identify them as they can severely damage dogwoods, roses, and other plants.

Some Lepidoptera Found in Central Virginia and Their Host Plants

- American lady: pearly everlasting, pussytoes
- Baltimore checkerspot: turtlehead
- Banded hairstreak: oaks, hickories, black walnut
- Black swallowtail: golden alexander, rue, Queen Anne's Lace, dill, parsley, fennel
- Common buckeye: plantain, vervain, toadflax
- Common wood nymph: poverty oat grass, big bluestem, little bluestem
- Eastern-tailed blue: clovers, tick-trefoil
- Eastern tiger swallowtail: black cherry, tulip tree, ash
- Gray hairstreak: clovers, mallows
- Fritillaries: violets
- Hummingbird clearwing moth: dogbane, snowberry, black cherry
- Monarch: milkweeds
- Mourning cloak: willows, elms, birch, hackberry
- Painted lady: thistles, mallows, legumes, asters
- Pandora sphinx moth: native grapes, Virginia creeper
- Pearl crescent: asters
- Pipevine swallowtail: Dutchman's pipe, Virginia snakeroot
- Polyphemus moth: apple, oak, birch, elm, rose, dogwood, hickory, willow, maple
- Red admiral: nettles
- Red-spotted purple: black cherry, willows, serviceberry, birch, hawthorn
- Silvery checkerspot: wingstem, ox-eye sunflower, black-eyed susan
- Spicebush swallowtail: spicebush
- Spring azure: dogwood, black cherry
- Sulphurs: clovers, legumes
- Summer azure: dogwoods, viburnums, wingstem
- Viceroy: willows
- Zebra swallowtail: pawpaw

Summary:

- Plant in layers: trees, shrubs, herbaceous perennials, and ground covers.
- Rely on native trees, shrubs, grasses, and perennials that will serve as host plants to caterpillars.
- Be sure both nectar and host plants are available in all seasons.
- Plant ground covers beneath larger plants to offer caterpillars food and to give them a place to hide from predators. Many moth caterpillars hide during the day and come out to feed at night.
- Try to have a "wild" area.
- Provide shelter for overwintering Lepidoptera by leaving leaves on the ground in the fall and

dried grasses and perennial stems in place until spring.

- Many caterpillars feed on multiple varieties of plants, but a number can only feed on one species. The scarcity of these plants makes these butterflies more susceptible to loss. If you see the butterflies noted below in your area, try to include some of their host plants to help them persist:

    - *Spicebush (Lindera bensoin) for spicebush swallowtail Photo courtesy Missouri Botanic Garden*
    - *Milkweed (Assclepias) for monarchs*

Spicebush caterpillar Courtesy Missouri Botanical Garden Plant Finder

    - *Dutchmans pipe (Aristolochia macrophylla) for pipevine swallowtails*
    - *Pawpaw (Asimina triloba) for zebra swallowtails*
    - *Turtlehead (Chelone) for Baltimore checkerspots*

The Piedmont Environmental Council and the Master Gardeners of Northern Virginia have more information on hosts plants to include in your Central Virginia garden:

"Larval Host Plants of Selected Lepidoptera (e.g. Butterflies, Moths, Skippers) in Virginia". Piedmont Environmental Council

"Nectar and Host Plants for Selected Mid-Atlantic Butterflies and Moths". Master Gardeners of Northern Virginia

Featured photo: Monarch caterpillar by Melissa King

Resources:

Bringing Nature Home (Douglas W. Tallamy, 2007)

*Gardening for Butterflies (*The Xerces Society, 2016*)*

Piedmont Native Plants (Pant Virginia Natives.Org,)

"All About Butterflies". University of Kentucky College of Agriculture, Food and Environment

"Attracting Butterflies". National Wildlife Federation

"Bagworms on Trees and Shrubs". University of Maryland Extension

"Biological Control: Questions and Answers for Home Gardeners". N.C. State Extension

"Butterfly Conservation". Xerces Society

"Cabbage, Broccoli and Other Cole Crop Pests". Clemson Cooperative Extension

"Creating a Butterfly Garden". University of Minnesota Extension

"Food for Caterpillars". National Wildlife Federation

"Keep an Eye Out for Hornworms". Penn State Extension

"Landscaping for Butterflies in Maine". University of Maine Cooperative Extension

"Larval Host Plants for Butterflies" . UC Davis Arboretum and Public Garden

"Moths, Butterflies, and Pollination". University of Maryland Agronomy News

"Skippers". Missouri Department of Conservation

"Plants that Host Butterfly Larvae". N.C Cooperative Extension

'Spongy Moth". U.S. Department of Agriculture

"Tent Caterpillars". University of Kentucky Department of Entomology

The Edible Garden in March

By Ralph Morini | March 2024, Vol.10,No.3

March is the beginning of our outdoor gardening season. If you started cool weather crops indoors in February, you can begin transplanting into the outdoor garden in the middle of March. Alternatively, garden centers will begin selling transplants of cabbage family crops and lettuces to be planted on the same schedule. Lots of plants can be direct seeded into the ground as well.

Fruit growers should aim to get pruning done early in the month before serious new growth starts. It is also time to fertilize and plant bramble fruits and blueberries.

Let’s review some tips for getting things going.

Manage Your Soil for Best Growing Results

Soil testing. Photo: VA. Coop.Ext.

If you haven't had a **soil test** for three years or more, consider a new test. They are a valuable tool for maintaining optimum soil fertility and pH levels. Soil sampling kits and instructions are available at your local Virginia Cooperative Extension office. In Charlottesville/Albemarle, test kits are available in marked plastic bins at the Albemarle County Extension Office off 5th Street Extended or at the Stagecoach Road building entrance. Be sure to take boxes and the appropriate instruction sheet for home gardeners versus commercial growers. Samples should be mailed with payment directly to the Virginia Tech lab, and results will be issued directly to the sender. Call the Extension office at 434-872-4580 with questions. For additional information on soil testing, check out VCE publication 452-129: Soil Sampling for the Home Garden.

Compost batch. Photo: R Morini

Regardless of your soil's condition, adding organic matter to your soil will improve it, and fully-decomposed

compost is a great addition. It improves soil structure and water infiltration, while absorbing and holding moisture longer, a real benefit during our hot, dry summers. Compost can be purchased but can also be made at home using yard and organic kitchen wastes. Instructions for home composting can be found in the VCE publication Making Compost from Yard Waste. If you start a compost batch now, it can be ready for planting in 4 to 6 months depending on content and care.

If you have a heavy clay soil in your garden and you aren't sure how to best manage it, take a look at the Garden Shed article Gardening in Clay. Surprise: the secret is adding decomposed organic matter!

When adding compost to beds, spread a couple of inches on the surface. For new beds to be planted this spring, it can be tilled in. For established beds, we recommend scratching it into the soil surface and letting soil organisms carry it deeper.

A broadfork at work, from the video, "The broadfork – Jean-Martin Fortier – The Market Gardener's Toolkit,"

Rather than tilling to loosen soil, insert a broadfork or digging fork as deeply into the bed as possible and rock it back and forth to loosen and aerate the soil without destroying the soil structure. Work your way across the beds, advancing several inches with each fork insertion. It is also an effective way to integrate compost below the soil surface without upsetting soil structure.

Weed Management

Occultation. Photo: R Morini

Best practices for preparing soil for planting now emphasize minimum tilling. Tilling breaks up soil structure and the aeration increases carbon dioxide emissions. Pulverizing soil aggregates leads to increased compaction over the course of the growing season. The biggest issue no-till raises is probably how to manage weeds. Hopefully, most home gardeners are not using glyphosate products to kill garden weeds. Old time mechanical methods of weed hoeing and pulling are great but a lot of work. Organic practices that work are called **occultation or solarization**. Occultation involves covering beds for 4 weeks or longer with a black tarp, secured around its edges. Occultation denies light, smothering weeds and speeding decomposition of trimmed cover crop remains. Solarization via a clear plastic sheet allows light but gets hotter than occultation which also kills weed roots. Growers report season-long weed-stifling benefits. When the tarp is removed, residue can be left as mulch or composted. The post Black Covers Can Put Weeds to Bed . . . for Good from the Maryland Extension provides occultation explanation and guidance. Solarization guidelines are presented in the article Using the Sun to Kill Weeds and Prepare Garden Plots from the University of Minnesota Extension.

Cover Crop Removal

If you have a cover crop growing, the best time to remove it is after plants flower but before they go to seed. Use a string trimmer to cut it as close to the ground as possible. While residue and plant crowns can be removed and composted, a more common practice, when practical, is to leave the residue on the ground to act as a mulch and organic matter addition. Aerate the soil with a broadfork to reduce compaction and smooth the bed with a rake if needed for seed bed preparation.

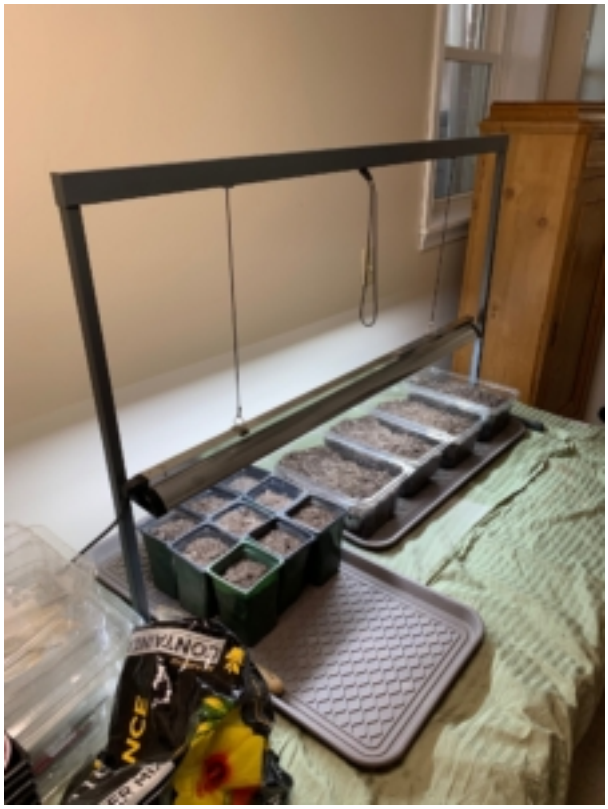
It’s Time to Plant

As noted in articles from the last couple of months, the USDA has changed Hardiness Zones boundaries based on climate change-driven warming temperatures. For our local area of Charlottesville and Albemarle County Virginia, our zone changes from 7a to 7b. The net effect is that our average last frost changes from April 15-25th to April 5-15th. This moves suggested early planting times about 10 days earlier in spring (and 10 days later in fall). *Virginia's Home Garden Vegetable Planting Guide* from the VA Cooperative Extension hasn't changed its map yet, but there is a recommended planting/harvesting chart for Hardiness Zone 7b that USDA suggests. The new guidelines make late February to early March the times for outdoor seeding of cool weather vegetables, including beets, carrots, kale, collards, mustard greens, lettuces, peas, radishes, spinach, and turnips. Home-started or purchased transplants that can be planted in the garden this month include broccoli, cabbage, cauliflower, leeks, onion sets, and new asparagus plantings.

Soil thermometer. Photo: R Morini

Soil temperature is an important factor in successful outdoor seed germination. Soil thermometers are readily available at prices starting at about $15. Consider stem length if you purchase one. For soil, home gardeners only need a short stem; even 4 inches will suffice for seed germination. However, if you get one with a stem of 12 inches or more it can also be useful to monitor compost temperature, where batches are typically 3 or 4 feet deep and the thermometer needs to probe deeply to get a good reading.

Cool weather crops like spinach and lettuce will germinate at temperatures in the 45-50° range, tomatoes need 60-65° soil, and squash and melons need about 70°. A complete guide is available in the Oregon State Extension publication Soil Temperature Conditions for Vegetable Seed Germination.



Simple seed starting setup. Photo: R Morini

If you started seeds indoors in February and are moving them to the garden in March, remember to harden them off by putting them outside during the day for progressively longer periods over one to two weeks, once daytime temperatures are above 50°F.

As you move early transplants outside, replace them with warm weather crops that should be transplanted after our last frost. For example, tomato seeds planted indoors in early to mid-March should be ready to transplant outside in about 6 weeks, from mid-April to May 1st. This matches up with our average last frost in Zone 7b of April 5-15. But remember that we had a frost in 2020 on May 9, so pay attention to current weather forecasts and be ready to cover crops overnight if a late frost comes our way.

You can find lots of good advice for seed starting and transplanting in the VCE publication Plant Propagation from Seed and *The Garden Shed* article How to Start Your Garden Seeds.

Fruit Growing

If you are a fruit grower, fertilize fruit trees 3-4 weeks before active growth begins. Scatter fertilizer evenly under the tree, starting about 2 feet from the trunk and extending just beyond the drip line or end of the furthest branches. A soil test should be performed prior to applying fertilizer. For additional information on fruit trees, visit VCE Publication 426-841, "Tree Fruit in the Home Garden."

Fruit trees are pruned before growth starts in late winter or early spring to remove dead and diseased branches, remove vertical shoots, open the structure for light penetration, and to shape the tree. Further pruning can be done in summer to "dwarf" a tree, if desirable. Pruning allows the tree to direct nutrients to branches that will bear high quality fruit. The article Pruning Fruit Trees from the University of Nebraska Extension is a helpful resource. For more detail on the effects of pruning try VCE Publication 422-025, "Physiology of Pruning Fruit Trees."

Bramble fruits such as raspberries and blackberries may be planted in early-to-late March. Plant in moist, well-drained soil containing large amounts of humus or organic matter. For weed control, mulch around newly-planted brambles with an organic mulch. For additional information on how to grow bramble fruit, review VCE Publication "Small Fruit in the Home Garden".

Now is the time to plant **blueberry** bushes. Different varieties of blueberries have different requirements for "chilling hours" — i.e., the number of days with temperatures between 35° and 45°F. They also require very acidic soil for best growth. It makes sense to make careful choices when acquiring plants. *The Garden Shed* article Blueberry Cultivation in the Home Garden explains further.

If you have established blueberry plantings, the publication Pruning Blueberries from the Maryland Extension offers excellent pruning advice with illustrations.

I hope this information provides guidance and motivation to help you get things going. It's great to be out in the garden again. I hope to see you again next month at *The Garden Shed*.

Resources:

Featured Photo: Backyard garden in March. Photo: R Morini

"Virginia's Home Garden Vegetable Planting Guide and Recommended Planting Dates," Va. Coop. Ext. Publication 426-331, http://pubs.ext.vt.edu/426/426-331/426-331.html

"Tree Fruit in the Home Garden," VA Coop. Ext, Publication 426-841, https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/426/426-841/426-841_pdf.pdf

"Soil Temperature for Vegetable Seed Germination," Oregon State Extension, Soil Temperature Conditions for Vegetable Seed Germination | OSU Extension Service (oregonstate.edu)

Plant Propagation: Creating New Plants by Layering

By Patsy Chadwick | March 2024, Vol.10,No.3

Most gardeners rely on two proven **vegetative (asexual) propagation** methods to create new plants: cuttings and divisions. Both approaches involve severing stems, leaves, or roots from the "parent" plant and then tending the severed parts as they develop new root systems of their own. These methods aren't complicated, but they do take some practice to master and occasional failures are to be expected.

A third vegetative propagation method, **layering**, is not as familiar to home gardeners, yet it has existed in nature for probably as long as plant species have inhabited the earth. Like cuttings and divisions, layering produces new plants with characteristics identical to those of the parent plant. Unlike cuttings and divisions, this method creates a new plant **while it is still attached to the parent plant**. A "layer" is the name given to a rooted plant after it is detached from the parent plant. Until it is detached, the layer benefits from being supplied with nutrients and moisture while it develops an independent root system. As a result, this propagation method generally has a higher success rate than plants started from cuttings or divisions.

LAYERING AS A VEGETATIVE PROPAGATION METHOD

Layering is best suited for propagating shrubs, vines, woody herbs, and even some trees that have flexible stems located low to the ground. It's a good alternative to stem cuttings for some plant species that are difficult to propagate. Layering is also a good method for propagating native species that aren't readily available for sale through commercial sources. It is not normally suitable for propagating herbaceous perennials or annuals.

While plants may be layered any time of year, dormant stems are best rooted in late winter to early spring just before new growth starts. This allows the layer to develop a good root structure over the summer and plenty of time to get established after it is separated from the parent and transplanted elsewhere.

HOW MOTHER NATURE DOES IT

Many plant species evolved to replicate themselves naturally through offsets, stolons or runners, and suckers, all of which are specialized plant structures. Because these structures result in new plants while they still attached to the parent plant, they are considered to be a form of layering.

Offsets – Sideshoots or branches that grow from buds at the base or main stem of a plant. After they have developed their own root systems, offsets (which are often called **pups**) can be propagated by simply cutting them away from the plant parent and planting them. Agave and yucca are examples of landscape plants that can be propagated from offsets. Some houseplants, such as Chinese money plant (*Pilea peperomioides*) and aloe, may also be propagated from offsets.

Stolons (Runners) – Stems that emerge from the crown of a plant and grow horizontally above the soil surface. New plants can form from nodes along the stem. If the nodes come in contact with soil, they develop roots and top growth resulting in a new plant. Strawberry plants, many ground covers, grasses, and some weeds replicate themselves using stolons.

Suckers – Stems that develop from root tissues below ground or from stem tissue at the base of a plant. On the one hand, plants that sucker can be a nuisance, especially if the suckers allow the plant to spread beyond the space allocated for it in the landscape. On the other hand, rooting suckers as a propagation method allows gardeners to duplicate **desired plants** repeatedly without significant variation from the parent plant. Examples of native shrubs that sucker include Virginia sweetspire (*Itea virginica*), sweet pepperbush (*Clethra*), spicebush (*Lindera benzoin*), and witch alder (*Fothergilla*).

METHODS FOR LAYERING PLANTS

Many plant species do a remarkable job of propagating themselves through the specialized plant structures just described. They are the inspiration for a variety of layering techniques now used by professional plant propagators and home gardeners. For simple drawings of these techniques, see the link to the Virginia Cooperative Extension Gardener Handbook (page 222) under Sources below.

Before starting a layering project, take a few minutes to decide which of the five basic methods described below is best for the plant being layered.

Technique 1 – Tip Layering – This is a particularly easy way to propagate vining plants such as purple and black raspberries and blackberries. The technique involves rooting the tip of the current season's growth where the greatest concentration of rooting hormones is located. To tip layer a plant:

- Select a long arching stem and bend it so that the tip touches the ground.
- Dig a shallow 3" to 4" deep hole at that spot, insert the tip into the hole and cover it with soil.
- If necessary to hold the tip in place, secure it with a U-shaped pin or piece of wire or simply use a rock. The tip will initially grow downward but will bend sharply upward toward the light. Roots will form at the bend and the recurved tip will become a new plant.
- Keep the soil moist while the roots are developing.
- Note: If this is more convenient, root the stem tip in a pot filled with potting soil rather than in the ground.

Technique 2 – Simple Layering – This method works well for plants with flexible low-growing branches such as abelia, azalea, boxwood, dogwood, forsythia, Virginia sweetspire and rhododendron.

- In late winter to early spring, select a young, flexible stem near the base of the plant. Make sure the stem will bend to the ground without breaking.
- Select a spot about 6” to 12” from the tip of the stem for layering. At that spot, dig a shallow 3” to 4” deep hole.
- Remove the leaves from the part of the stem that will be buried.
- Use a sharp knife to slice off a portion of the bark from the underside of the stem.
- Optional: Although not necessary, dusting a rooting hormone (auxin) to the wound can facilitate rooting.
- Bend the stem down so that the wounded area is at the bottom of the prepared hole. This is the point where new roots will form.
- Secure the stem in place with a U-shaped landscape staple or set a rock or brick on it to keep it beneath the soil.
- Leave the 6” to 12” of the stem exposed above the soil. Bend it into a vertical position and stake it so that it will grow upright.

Layered red twig dogwood stem tip. Photo Credit: Pat Chadwick

Technique 3 – Compound Layering (also called serpentine layering) – This is a variation of simple layering. Instead of creating just one new plant from a stem, compound layering allows you to create multiple plants by alternately covering and exposing sections along the length of the stem. It’s a particularly good method to use for vines such as clematis and wisteria.

Technique 4 – Mound Layering – This method is a good way to get lots of new plants from one parent plant. It works best for dormant plants that are heavily stemmed with close branching. Candidates for mound layering include lavender, wormwood, spirea, flowering quince, and cotoneaster.

- Prune the dormant stems back to 1 inch above the surface of the soil.
- When shoots begin to emerge in spring, mound soil up over them. Roots will develop at the base of the shoots.
- Separate the new plants from the parent plant by cutting the stems just below the newly developed roots.

Technique 5 – Air Layering – This method of layering is much more involved than the previous four. Instead of rooting new plants in soil, air layering is used to create a new plant on the stem or branch of a plant, hence the name. Air layering is appropriate for hardy shrubs with stems or branches that cannot be bent down to the ground such as azalea, camellia, magnolia, and holly. For best results, choose a stem from

the **previous season's growth** that is pencil size or slightly larger diameter. Or, if later in summer, choose a mature shoot from the **current season's growth**. To air layer a woody plant such as a shrub or tree:

- Choose a spot for layering about a foot or so from the tip of the branch and remove all leaves and twigs from 3" to 4" above and below that point.
- Use a sharp, sterile knife to make two parallel cuts about an inch apart around the stem and through the bark and underlying cambium layer.
- Then make a couple of perpendicular cuts between the two parallel cuts and remove the ring of bark.
- Scrape the bared ring to remove the cambial tissue. This is important to prevent callus tissue from forming.
- Pack a ball of damp (but not soggy) sphagnum moss or coir about the size of a baseball around the cut area.
- Use clear plastic wrap to secure the moss or coir tightly against the wounded area. Seal both the top and bottom so that the packing material doesn't dry out.

While the emphasis of this article is primarily on landscape plants, air layering is commonly used for propagating houseplants with thick stems such as rubber plant (*Ficus elastica*) or dumb cane (*Dieffenbachia*). For more information on the technique, see University of Missouri Extension's publication on Home Propagation of Houseplants.

HOW LONG DOES IT TAKE TO CREATE A NEW PLANT BY LAYERING?

If there is a downside to layering, it's that the process requires patience. Some plant species, such as vining plants, may root within a few weeks. Other species, such as some woody shrubs and trees, may need as much as a year to root.

For a stem rooted in late winter or early spring, give it a gentle tug in the fall to see if it is rooted. If it resists being tugged, then the roots are adequately developed, and the plant can be separated from the parent and transplanted elsewhere. If the roots are not adequately rooted, then cover the soil back around the roots and leave the plant in place until the following spring before checking again.

PATENT LAWS REGARDING PLANT PROPAGATION

Before attempting to propagate a plant, check first to see if it is currently under an active patent or has a patent pending. If it is under patent protection, then it is illegal for home gardeners to propagate the plant either by seed or by vegetative methods or to share it with others or sell it. Once a plant patent application is filed with the U.S. Patent Office, the patent is valid for 20 years. But if it is in the public domain, the plant can be legally propagated and shared. This issue pertains more to newer varieties and cultivars than to unpatented older, heirloom varieties.

SUMMARY

Layering is a quick and easy – some might say effortless – way to propagate new plants at no cost. No special tools or gardening skills are required. In fact, the plant does most of the actual work. Of the five layering techniques described, simple layering and tip layering are the easiest. However, it is important to match the technique to the physical characteristics of the plant being propagated.

FEATURED PHOTO: Layered red twig dogwood stem. Photo Credit: Pat Chadwick

SOURCES

Plant Parenting (Halleck, Leslie F., 2019)

Plant Propagation, American Horticultural Society, 1999

Virginia Cooperative Extension Gardener Handbook, Chapter 8, Plant Propagation, page 222.

Plant Propagation by Layering, NC State Extension Publications (ncsu.edu)

How to Propagate Shrubs by Layering, Iowa State University Extension

Propagation by Cuttings, Layering and Division, Virginia Cooperative Extension Publication 426-002

Upcoming Events

By Cathy Caldwell | March 2024, Vol.10,No.3

Tree Basics Class on Zoom: ***Select, Plant, and Care for Trees***
Tuesday, March 12 @ 7:00 to 9:00 p.m. FREE

– Register here

–Learn how to select a tree for your property that will have the best chance to survive and flourish in the place that you choose for it. Tree Steward Tim Maywalt will discuss best practices for planting and show you how to care for your newly-planted tree and your other landscape trees for the long term.

The Policy & Practice of Stream Restoration
Wednesday, March 13, 2024 @ 7:00 pm – 9:00 pm — ZOOM

–If you are not a member of the Jefferson Chapter, Virginia Native Plant Society and would like to attend the presentation on Zoom, please send an email to Emily Byers at jeffvnps@gmail.com.

Garden Basics: A Year in the Life of a Vegetable Garden–A Gardener's Path

Saturday, March 16 @ 2:00 pm – 4:00 pm. FREE

Trinity Episcopal Church 1118 Preston Avenue, Charlottesville

–Growing a veggie garden can be enchanting, fulfilling, and, at times, a bit frustrating. This year-long journey through the life of a veggie garden and gardener—from selecting seeds through reaping the rewards of your efforts—will help you avoid getting overwhelmed…

RSVP Here

Spring/Summer Invasive Plant Workshop: Identification

March 26 @ 1:00 pm – 3:00 pm
$10

This online workshop will provide an introduction to invasive plants and will help you to identify different species for the spring and summer. This session will take place via Zoom and will include a Q&A period with PRISM experts.

Cost: $10

This virtual session will be recorded. Those who register will receive access to the recording.

Register via eventbrite HERE.

Coming up in April . . .

Spring/Summer Invasive Plant Workshop (Nellysford, VA)

Friday, April 5 @ 10:00 am – 1:00 pm
$25

In partnership with the Rockfish Valley Foundation, Blue Ridge PRISM will offer an in-person workshop to guide you through invasive plant management in the spring and summer.

Join Blue Ridge PRISM's knowledgeable staff at the Rockfish Valley Trails to learn about invasive plant ID, herbicide safety, basic management strategies, and a step-by-step tutorial on how to use herbicide techniques as well as manual control options.

This in-person workshop will take place on Friday, April 5th from 10:00 am – 1:00 pm in Nellysford. The site of the workshop is a short walking distance from the main trailhead (Camille Trailhead) of the Rockfish Valley Trails in Nelson County. This workshop will include an invasive plant identification walk on the trail.

Space is limited to 25 participants.

–Registration fee is $25. Registration via EventBrite. Register HERE.

Garden Basics: Native Plants for Shade

Saturday, April 20 @ 2:00 pm – 4:00 pm

Trinity Episcopal Church 1118 Preston Avenue, Charlottesville

Adding native plants to your shady yard is both ecological and beautiful. Learn how to: layer your landscape, identify types of shade, and determine which plants work in each situation. We will cover trees, shrubs, and perennials.

FREE RSVP Here

Growing Summer Squash

By Gena Breakiron | March 2024, Vol.10,No.3

For many, growing and harvesting yellow and zucchini squash epitomizes summer. Winter's short days and cold weather have many longing for the garden. While the memory of cutting off those tender yellow squash may intensify that longing, it helps to remember spring planting is just around the corner.

The word "squash" comes from the Massachuset Indian word *askutasquash,* meaning "eaten raw or uncooked." While we usually enjoy our squash cooked, summer squash is easily enjoyed raw. The tenderness of summer squash is attributable to being harvested when immature. If left to mature, it would develop a hard rind that is not usually edible. Many gardeners have experienced this, when a green zucchini evades detection and grows into a huge fruit in just a few days. Winter squash is, in fact, left on the vine to develop a hard skin that increases its ability to maintain freshness when stored for months.

Summer squash (*Cucurbita pepo*) is usually one of the easiest and most prolific crops to grow. The 3 main types of summer squash include yellow, both straight neck and crookneck; green, gray or yellow zucchini; and white patty pan, saucer-shaped or scalloped. There are many varieties and cultivars having different

fruit shapes and colors, and some cultivars are more disease-resistant. NC State Ext/Basics for Growing Squash.

According to Virginia Tech's Vegetable Planting Guide, you can plant squash in your garden after the last spring frost date. Depending on where you live in Virginia, that could be any time between April 15th and May 15th. Albemarle County's hardiness zone was recently changed from 7a to 7b, and the last spring frost date is now estimated to be between April 5th and April 15th.

However, squash grows best if the temperature is at least 65°-70°F. This is one of the reasons that squash is usually planted in "hills."Not only does this help to warm the soil, it also promotes good drainage. Plant 3-4 seeds per hill, and leave 3'-4' between hills. If you plant in rows, leave several feet between plants and 4'-5' feet between rows. Although summer squash is not vining, the plants become very large. Many stems will come in contact with the soil and develop roots to help provide water and nutrients to the plant.

Squash is easily directly sown in the garden, but if you decide to grow transplants, start your plants indoors 3 weeks before your last frost date. Use a soilless seed starting mix and transplant into the garden when they have developed their first true leaves (the leaves that develop after the cotyledons or seed leaves.) Keep them in a warm, sunny window. A heating pad and grow lights can be used if you do not have an ideal location.

Placing a gentle fan on the young seedlings will help them develop strong, resilient stems. You'll need to "harden off" the plants before transplanting them to your garden. To do this, place the plants outdoors for an hour on the first day and increase the time outside until they have acclimated. You may need to shelter them from direct sunlight, depending on the temperature and how they tolerate the outdoors. Give them a week to adapt, before moving them to your garden. Be sure to incorporate some compost into your soil before planting.

Your squash plants will need at least 6 hours of sun a day, but they prefer 8-10 hours. Additionally, squash will require at least 1 inch of water each week. Try to water regularly, in the morning, and keep the stream at the base of the plant. If the weather is particularly hot and dry, as we often experience in central Virginia summers, your plants will need additional water to continue to produce fruit.

Photo: Gena Breakiron

When harvesting your squash, be sure to cut the stem to avoid damaging the plant. The more you harvest the immature fruits, the more fruit your plant will produce. Naturally, plants want to produce seeds and offspring, so once mature seeds are produced, the plant will decrease production.

Unfortunately, squash plants, like many garden plants, can fall victim to a host of diseases and pests. They can be difficult to manage and continue to maintain an organic garden. Below are some methods for battling two of the most troublesome: the squash vine borer (*Melittia cucurbitae)* and the squash bug *(Anasa tristis)*. You can read about other pests and diseases by visiting the links provided at the end of this article.

Additionally, If you want a longer harvest window, you may want to plant fewer plants at first, and then plant again every two or three weeks. Eventually, your successive plantings will outlast the insect pests.

Both the squash vine borer and the squash bug overwinter, vine borers as a pupa or pupa in cocoon 2” under the soil, and squash bugs as adults under plant debris, rocks, compost, or anything else they can find for shelter. Gardeners may be able to avoid these pests by planting later in the season and thereby missing the insect’s life cycle.

To prevent the vine borer moth from laying its eggs on the stem, try wrapping the stems with aluminum foil. If the vine borer is already present, use a sharp blade to cut halfway through the stem of the plant and extract and destroy the larva. Then, mound the soil up around the wound so it can heal.

The squash bug is a bit more difficult to deal with, but they won’t kill your plants as quickly as the vine borer. However, once the bugs become established, your plants will decline quickly. Again, consider planting later in the season. In our area, gardeners can plant in mid- to late June and possibly experience fewer or no squash bugs. They will still have an abundant harvest and enough time to plant successive crops through mid- or late August, with harvests likely into October. Look for pictures and a great article on the squash bug at the link as the end of this article.

Low tunnel protects plants while tender. Photo: Gena Breakiron

If you choose to plant early and take on the squash bugs, there are some ways to combat them. First, row covers or a low tunnel could be used until the flowers develop fully. You’ll want to wait until you have plenty of male and female flowers. The male flowers will develop first, and there may be quite a few before the first female flowers bloom. You’ll know the difference because the male flowers will be upright, whereas the female flowers will be oriented almost parallel to the soil. This helps the fruit develop horizontally without snapping off as it becomes heavy. Once you have a few female flowers, you’ll want to remove the row covers so natural pollination can occur.

Whether you use row covers or not, you’ll want to be diligent about looking for eggs on the leaves. They will likely be on the undersides of the leaves, but some will also be on the surface. You can remove them by tearing off the piece of the leaf that has the eggs (they are too hard to crush), or you can try using some strong tape to pull them off. This may damage your leaves at times, but it will not be as much damage as the bugs can manage if left on the plants. Be sure to put the used tape in a plastic bag and dispose of it in the trash.

Squash bugs also like to hide under things, especially at night. You will notice them congregating under leaves that are on the ground. Because of this habit, you can lay boards or cardboard under the plants. Lift the boards early in the morning, and squish as many bugs as you can. Make regular inspections of your plants, and you may be able to keep up with them long enough to harvest a good amount of squash.

I have found I can smash many squash bugs if I wet the plants with a gentle spray of water during the heat of the day. The water appears to cause the bugs to come to the surface of the leaves, most likely in survival mode. They are more easily crushed when they come out from hiding. Conducting this procedure in the middle of the day, allows the plants to dry before the cooler temperatures of the night, thus avoiding mildew.

When the squash bugs have become too numerous, or your plants begin to decline, it may be time to remove them. Pull the plant out of the ground and place it in a large black plastic trash bag. Look for squash bugs on the ground that will have fallen from the plant and dispatch them or add them to the bag. Twist the top of the bag firmly, so no bugs escape. Leave it in the sun for a few days, and dispose of it in the trash. Never put diseased or pest-infested plant matter in your compost!

Most gardeners feel a summer vegetable patch is not complete without summer squash. While these plants are not without their troubles, they can prove to be worth the effort. Online, you'll find an abundance of recipe ideas. When you find your kitchen inundated with squash, don't forget you can always share with your neighbors or a food pantry.

Featured Photo: *Gena Breakiron*

SOURCES:

Virginia's Home Garden Vegetable Planting Guide: Recommended Planting Dates and Amounts to Plant (note that this publication has not yet been updated to reflect the change in hardiness zones which occurred in the autumn of 2023)

Cucumbers, Melons, and Squash/VA Tech Pub. No. 426-406

Squash Bug in Virginia Home Gardens/VA Tech

Growing Summer Squash (Zucchini) in a Home Garden/University of Maryland Extension

Squash Vine Borer/VA Tech

Easy Gardening: Squash/Aggie Horticulture/Texas A & M

Squash Bug in Virginia Home Gardens/www.pubs.ext.vt.edu/ENTO/ento-578/ento-578

The Ornamental Garden in March

By Cathy Caldwell | March 2024, Vol.10,No.3

March marks the beginning of spring, but it can be a fickle month! The weather can be mild and pleasant one day and then cold and blustery the next. Until the weather becomes consistently milder, be patient and use this time to organize your thoughts on what you want to accomplish in your ornamental garden this spring. Start by checking the **Monthly Gardening Tips** section now located under Gardening Resources on the main page of the PMG website: pmgarchives.com/Gardening Resources/Monthly Gardening Tips/#March. You just might find other useful information in the Gardening Resources section, too.

The soil in March is generally too cold and wet to work in. Just walking on soggy soil compresses the soil aggregates and particles. The resulting compaction affects drainage and rain infiltration and prevents plant roots from penetrating very deeply. Soil compaction also reduces the amount of open pore spaces, which makes it difficult for plant roots to absorb oxygen and water.

Here's how to tell whether your soil is dry enough to work in: Dig up a small amount of soil and squeeze it in your hand. If the soil stays in a solid muddy ball and does not fall apart, it's too wet to work in. If the soil crumbles through your fingers when you squeeze it, then it's ready to be worked.

Once the soil in ornamental garden beds is dry enough to walk on, remove any weeds that have overwintered in your flower beds. It's important to tackle weeds early and stay on top of this task throughout the growing season. For help with identifying weeds, check out Virginia Tech's Weed ID website or the University of Missouri Weed ID Guide.

Don't be too eager to cut back last year's perennial foliage and stems. If possible, hold off on this task until daytime temperatures are consistently above 50°F for at least seven consecutive days. Many beneficial insect species such as small native bees, syrphid flies, and lacewings overwinter in the debris and are merely waiting for warmer weather conditions before emerging. By waiting for the right conditions, you give these insects the chance to emerge safely.

Redefine flower bed edges as needed to give them a neat, crisp appearance. A flat-edged spade is very useful for this task.

Photo: Cathy Caldwell

Direct sow seeds for hardy annuals such as larkspur, sweet peas, and love-in-a-mist. These annual species germinate best when soil temperatures are between 55°F and 65°F, which means they can be planted weeks before the last frost date in spring. On the other hand, **tender annuals** such as begonia, cosmos, zinnia, and vinca can't handle cooler soil and air temperatures and should be planted after the last frost date in spring. As a reminder, the last frost date for the Charlottesville/Albemarle County area of Virginia is around April 15 to April 25 on average. To learn more about hardy annuals, see the University of Missouri Extension's publication on Flowering Annuals.

Assess your emerging perennials to identify any that need to be divided. Guidelines vary on how often to divide perennials but, on average, many of them benefit from being divided about every three to five years. As a general rule, divide spring and early summer-flowering plants in the late summer or fall and fall-blooming plants in the spring**.** And here's another tip: Hostas may be divided just as they emerge in early spring to minimize damage to the leaves. For more insight into how and when to divide perennials, see *Garden Shed* article on Guidelines for Dividing Perennials.

Now is a good time to have the soil tested in your ornamental garden beds to determine the pH and to analyze fertility levels. If it's been a while since you've had your garden soil tested or if you've never had a soil test done before, check out the Virginia Cooperative Extension's (VCE) website, which is http://www.ext.vt.edu and view Publication No. 452-129, Soil Sampling for the Home Gardener. Don't guess! Follow the soil test recommendations for incorporating any amendments into the soil.

Top dress flower beds with one inch of compost to improve the soil structure, add nutrients, and enhance the soil's capacity for holding moisture.

Now is a good time to plant **bare root, dormant roses.** Soak the bare root rose in a bucket of water for at least eight or more hours to rehydrate the roots. Choose a sunny, well-drained location, dig the planting hole wide enough and deep enough to easily accommodate the roots and set the plant so that the graft union is at soil level. Space roses far enough apart to allow good air circulation.

Prune established rose bushes now to improve their health and structure. Make sure your pruners are sharp and clean. Prune canes to an outward-pointing bud and make each cut at a 45° angle just slightly above the bud. Remove any weak or unattractive canes. Cut any damaged wood back about one inch into

healthy wood. Cut any dead canes down to the ground level. If any branches rub together, choose the healthier of the two and remove the other one. If you are pruning a grafted rose, check for suckers below the graft union and remove them. Proper pruning facilitates better air circulation, also allows more sun into the middle of the plant, and results in a healthier, more attractive plant.

Prune subshrubs to shape them or remove dead terminal growth. By definition, a subshrub is a dwarf or low growing shrub or perennial plant that has woody stems at the base but new soft, green terminal growth that typically dies back each year. Some examples of subshrubs include the following:

- Blue Mist Shrub (*Caryopteris*) – Cut back top growth by about a third to neaten the shrub and encourage new growth. To rejuvenate the shrub, cut it back to about 6 inches from the ground.
- Heather (*Calluna vulgaris*) – Prune flower stems back to the base of old flowers. Snip the green part only. Don't cut down to the brown woody portion.
- Lavender (*Lavendula*) – Although Lavender is a subshrub, **it should not be cut back until after it blooms**, at which time, remove only the green part. Do not cut into the brown woody part.
- Lavender cotton (*Santolina chamaecyparissus*) – Cut back to within 6 inches of the crown every 2 to 3 years to keep it vigorous.
- Russian Sage (*Perovskia atriplicifolia*) – Leave the foliage standing over winter to provide interest and help protect the crown. Cut the old foliage back in spring to within 6 inches of the crown.

If deer are a nuisance in your garden, apply repellents or other deterrents as soon as the plant foliage emerges from the soil. The idea is to condition the deer to view your emerging plantings as unpalatable. Generally, no one deterrent, short of a physical barrier, is enough to stop a hungry deer. For lots of good information on how to address the problem of deer in the landscape, see *The Garden Shed's* article Deer, Deer, Deer!, which appeared in the May, 2021 issue. In addition, see VCE Publication HORT-62NP, Deer: A Garden Pest, and VCE Publication 456-018, Pest Management Guide: Home Grounds and Animals (scroll down to "Other Animals" in the menu) for more good information on how to deal with deer problems.

If you plan to **grow annuals or perennials from seed**, check seed packets for guidance on the merits of direct sowing in the garden versus starting seeds indoors. Tip: If you decide to start your seeds indoors, sow them in a fine, soil-less growing medium. Place under cool-white fluorescent lights about 14 to 16 hours per day and position the lights about two inches from the top of the seedlings. Maintain day-time temperatures at 70° to 75° F. and 65° F. at night. Keep the growing medium moist but not wet.

Clean leaves and other debris out of aquatic gardens to help reduce algae growth when temperatures warm up. Tip: If amphibians live in your pond, be careful not to disturb them. If they have already laid their eggs, be very gentle as you work around the eggs to avoid harming them.

Sources vary on **when to fertilize spring-flowering bulbs**, but, as a general rule of thumb, they may be fertilized with a **low-nitrogen fertilizer** or a fertilizer made especially for bulbs as soon as the shoots start to appear in spring. For daffodils, the American Daffodil Society recommends reapplying fertilizer at bloom time as well. Other sources recommend fertilizing daffodils after the bulbs have finished blooming. Regardless of when you fertilize, if you are using a granular fertilizer, avoid getting any on the foliage and be sure to water it in or apply it just before a rain.

Cut back ornamental grasses early in the month before they start to display new spring growth. If you wait too long, you risk cutting the new foliage.

Prune tree and shrub twigs that were affected by winter kill. Cut back to green wood. To determine if

the twig is alive or dead, scratch the bark with your fingernail.

Feed houseplants with a diluted (half-strength) solution of soluble houseplant food this month. This is when houseplants start actively growing.

Once the soil is dry enough, **inspect your lawn for any problems that need to be addressed**. For example, does the soil need to be aerated and de-thatched? Are there drainage issues that need to be addressed to eliminate standing water? Does the lawn have bare spots that need to be seeded?

If you haven't had a soil test done for your lawn recently, have one done to find out what nutrients, if any, may be needed. See VCE Publication 452-129, Soil Sampling for the Home Gardener. Note: if the lawn needs fertilizer, it's generally **best to apply it in the fall** rather than in the spring. For more information on lawn fertilization, see VCE Publication 430-011, Lawn Fertilization in Virginia.

Garlic mustard
Photo: Cathy Caldwell

Invasive watch: Look for garlic mustard (*Alliaria petiolata*) in your landscape and eliminate it in spring when the ground is moist and the plant is easy to pull up. This **invasive plant** has displaced native wildflowers such as spring beauty, wild ginger, bloodroot, trillium, and toothworts in many forested areas. Although it is easiest to recognize after it produces white flowers in early April, its foliage is also distinctive, and all parts of the plant emit a strong garlic odor. It is essential to remove garlic mustard before it sets seed. For more information on identification and treatment, see the Blue Ridge PRISM (Partnership for Regional Invasive Species Management) Factsheet/Garlic Mustard and Weed Alert – Garlic Mustard/ Blue Ridge Prism and Research Update/Blue Ridge Prism/Newest Recommendations for Garlic Mustard/2019.

Take photos of your daffodils, hyacinths and other spring bulbs as they emerge in spring to help you remember where they are planted. Once the foliage dies back in late spring, it's all too easy to forget where the bulbs are located. Your photos will save you much frustration and heartbreak later when you are digging holes for new plants.

Featured Photo: Pat Chadwick