January-February 2026 Newsletter

Southeastern Pennsylvania

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Feeding Wildlife with Native Plants

Presented by Leah Brooks, Marketing Coordinator, Mt. Cuba Center

Why Plant Native Species?

Native plants are the building blocks of a healthy ecosystem. They recycle nutrients, infiltrate and purify groundwater, control flooding, and mitigate climate extremes. Native plants, insects, and animals have evolved together within their geographic area to develop interrelationships that enable them to survive.

Native plants provide food for wildlife in several forms. Leaves feed the larvae of butterflies and moths, and flowers provide nectar for the adults. For bees and wasps, native plants provide both pollen and nectar. Birds eat the seeds and fruits of many native plants, but 96 percent of terrestrial bird species in North America feed their young insects -- especially caterpillars -- rather than seeds and berries.

Why? Caterpillars are like baby food -- soft, easily digested, and packed with protein, fats, and other nutrients that baby birds need to grow quickly. Juvenile songbirds must mature and grow enough feathers to leave the nest just 2 to 3 weeks after hatching. Their parents continue to feed them for several weeks afterwards. Nutritious food is critical to their survival during this period.

Caterpillars feed on plants, so as gardeners we want to make sure we're growing the right plants to produce caterpillars for birds. Transitioning from nonnatives to native plants is just part of this step. A relatively small number of native plant families support the majority of native caterpillars. These superproducers are called keystone plants. Without them, the food web that connects plants, insects, and animals (including humans) would collapse. To be effective wildlife gardeners, we need to focus on growing these keystone species.

Keystone Plants

Keystone plants use resources efficiently. developing deeper or wider root systems to maximize their uptake of water and soil nutrients. Another characteristics of keystone plants is that they have relatively few chemical defenses to prevent them from being eaten. Saplings and young plants may need to be protected from four-footed predation.

The top dozen keystone species for our ecoregion are trees:

1. oak (*Quercus*)
2. plum (*Prunus*)
3. willow (*Salix*)
4. birch (*Betula*)
5. maple (*Acer*)
6. poplar (*Populus*)
7. apple (*Malus*)
8. blueberry (*Vaccinium*)
9. hickory (*Carya*)
10. elm (*Ulmus*)
11. alder (*Alnus*)
12. pine (*Pinus*)

Two herbaceous species that are considered to be keystone plants are goldenrod (*Solidago*) and aster (*Symphyotrichum*). Keystone plants for different ecoregions can be identified using the National Wildlife Federation's Native Plant Finder. Plants are listed in descending order of the number of insect species they support.

WO SEPA 2026 CALENDAR

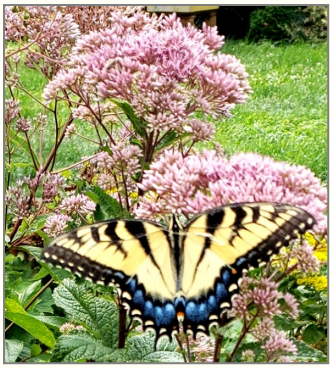
Feb. 18 Winter Gardening Practices and Planting in Small Spaces. Webinar, 7:00 p.m.

Mar. 18 Webinar (title to be announced), 7:00 p.m.

Watch recordings of past programs on our YouTube channel.

Native Plants That Support Insects

Keystone plants are the best at feeding caterpillars, but many other native species provide pollen and nectar to feed adult insects. The shapes and colors of leaves and flowers attract different types of insects. Butterflies and moths prefer to feed on flowers that provide an easy landing pad -- flat, open flowers like coneflowers, and dense flower clusters like joe pye weed (right).



Most bees need both nectar (for energy) and pollen (for protein and nutrients, and to rear their young). This is where cultivars could interfere with a native plant's ability to support pollinators. Cultivars that change a flower's size, shape, quantity, or configuration could make its pollen and nectar inaccessible to bees. If you're planting for pollinators, stick to straight species.

Approximately one quarter of all bees native to our region are pollen specialists, meaning their larvae can be reared only on the pollen of a certain plant family. The adults will forage for nectar on a variety of plants, but their young have more specific needs.

To support native bees, start with a variety of nectar plants, such as blue mist flower (below), golden Alexanders, and milkweeds. Add pollen host plants for specialist bees.

Some well-known native species that support specialist bees include *Cornus* (dogwood), *Coreopsis* (tickseed), *Helianthus* (sunflower), *Salix* (willow), *Solidago* (goldenrod), *Symphyotrichum* (aster), Vaccinium (blueberry), *Vernonia* (ironweed), *Viola* (violet), and *Zizia* (golden Alexanders).

Native Plants That Feed Birds

Besides growing the caterpillars that feed baby birds, native plants produce fruits and seeds that are and important source of nutritious winter food.

Composite flowers like coneflowers, black-eyed Susans, and perennial sunflowers produce small seeds favored by finches. Sparrows feed on the seed of goldenrod in winter. Migrating and overwintering birds need fall berries with a high fat content.

One study found that successful annual migration of songbirds depends on whether the habitat at stopover sites provides adequate food to fuel the birds' flight. In fall, this means high-quality fruits and seeds. The highest fat content and energy densities were found in fruits of native shrubs. The invasive fruits had a much lower fat content and energy density.

Native trees and shrubs favored by birds include black cherry, viburnum, elderberry, dogwood, winterberry, spicebush, serviceberry, American holly, sour gum, and eastern red cedar (above). These trees and shrubs are all relatively easy to grow and should be available at nurseries that sell native plants. In addition, American holly, eastern red cedar, spicebush, and black cherry will reseed freely once they are established.

American holly, winterberry, eastern red cedar, and spicebush fruit on female plants and need a male plant nearby in order to produce fruit. Some species of *Viburnum* need two plants for better fruit production.

RESOURCES

Nativars: Where Do They Fit In?

Echinacea for the Mid-Atlantic Region

Pollen Specialist Bees of the Eastern United States

The Value of Native and Nonnative Fruit-Bearing Shrubs for Migrating Songbirds

Tree of the Month -- Dogwoods

Native dogwoods are important components of natural landscapes in the eastern United States. These understory species play an important role in enhancing biodiversity and restoring ecosystems from upland forests to wetlands.

The dogwood's fibrous root system, particularly in shrubby species like silky and red osier dogwood, helps anchor soils prone to erosion, reducing sedimentation in waterways and protecting water quality and aquatic habitat. Reintroducing dogwoods into degraded wetlands creates habitat for a diverse range of insects, birds, and small mammals.

Dogwoods also play a key role in the calcium cycle of the forest. Calcium is an essential nutrient for both plants and animals. Dogwoods, unlike most other plants, have the ability to absorb calcium from soil and rocks. The trees concentrate the mineral in their leaves and wood. When the leaves fall in autumn, that calcium becomes available to the rest of the plants and animals in the forest.

Red Osier Dogwood, *Cornus sericea*

Also known as red-twig dogwood, this multi-stem shrub lives up to its name with smooth reddish stems ranging from burgundy and copper on the oldest stems to bright red on the current year's growth. Leaves turn orange, red, or purple in fall. The colorful stems are especially striking after the leaves have fallen. To maximize this display, prune out some old stems in spring, which will encourage the growth of more new stems.

Red osier dogwood usually stays under 9 feet in height but can spread at least as wide via spreading underground stems. Red osier also roots from branch tips that touch the ground.

Although it tolerates a range of soil conditions, including wet and dry sites and heavy clay soil, red osier dogwood prefers organically rich, consistently moist soil in partial shade to full sun. Its tolerance for wet areas and ability to spread quickly make it useful in areas that need erosion control, such as rain gardens, swales, and stream banks.

Identification

Red osier dogwood has medium to large oval leaves, pointed at the tips and heavily veined, with an almost quilted look. Clusters of lightly scented small white flowers appear on short stems in the leaf axils in late spring to early summer. White berries follow in the fall and are usually consumed by birds by early winter. The red stems (below) are bright spots of color in the winter and early spring landscape.


Photo © Curtis Clark

Red osier dogwood roots easily from stem cuttings and can be propagated in early spring by live-staking.

Habitat value

Dogwoods produce berries (technically drupes) that are rich in fat. Ripening in fall, the fruit serves as an essential food source for a variety of wildlife, including over 75 species of birds. Dogwoods are host plants for spring and summer azure butterflies, whose larvae feed on the leaves.

Shrubby dogwoods, like red-twig dogwood naturalize readily. Their dense, fibrous root systems create thickets that stabilize soil along stream banks and wetland edges, reducing erosion and preventing sediment from clogging waterways.

Quick Facts -- Red Osier Dogwood

Size	6-9 feet tall, 7-10 feet wide
Sun	Full to part sun
Soil	Prefers consistently moist, rich soil but tolerates wet and dry sites
Water	Tolerates occasional flooding
Habitat Value	Larval host for spring and summer azure butterflies; supports specialist bees; fruits consumed by birds and small mammals; dense foliage provides nesting habitat

Plant Survival Strategies and Garden Design

Why do some natives appear to thrive and spread, only to disappear in a few years? Why do others seem to sulk for a few years, then suddenly take off? Plant growth is based on more than the basic requirements of soil, light, and water. Each species has its own strategy to handle the challenge of surviving in an environment where stress must be managed because plants can't move away from threats to their survival.

According to the late ecologist J. Philip Grime, of the University of Sheffield in South Yorkshire, UK, plants have evolved certain approaches to two factors that limit their growth: stress and disturbance.

For a plant, stress is any environmental condition that reduces its ability to grow -- for example, too much or too little water, light, or nutrients. To live under stressful conditions, the plant must adapt to survive with less than ideal support. Disturbance is any activity that damages the plant, either above or below ground -- fire, wind, flood, pests, herbivory, soil compaction. To survive disturbance, the plant must either replace lost foliage or roots, or make do with less.

In response to stress and disturbance in their environment, plants have developed different growth strategies. Understanding these strategies can help gardeners design and maintain plantings for optimal plant health and ecological benefit.

Plants have three basic responses to stress and disturbance -- they can win the race for resources (competitors), they can evolve strategies to do more with less (stress tolerators), and they can take advantage of optimal conditions to grow and reproduce quickly (ruderals). Many plants adopt more than one of these strategies in combination, to maximize their chance of survival.

Plants that are competitors use resources efficiently to outgrow other plants that compete for water, light, and nutrients. Most trees and shrubs are competitors, growing larger than their neighbors and developing deeper or wider root systems to maximize uptake of resources.

Competitors dominate when stress and disturbance are low. These plants have a tall, wide, or large-leaf habit, grow up or outward rapidly, form large, expansive clumps, or spread by rhizomes. Examples include obedient plant, wild ginger, golden ragwort, bee balm, and goldenrod.

Relatively few species are adapted to growing in the deep shade of mature trees that consume most of the available water and soil nutrients. These plants are stress tolerators, surviving with less than optimal light, water, and/or nutrients. They usually mature slowly due to competition from surrounding plants. They may store water and nutrients in tubers, stems, or leaves and may go dormant when conditions are too harsh.

Many sedges are stress tolerators, growing slowly under the canopy of shade trees and spreading by seed or rhizomes. Other examples are butterfly milkweed, pale purple coneflower (*Echinacea pallida*), little bluestem, pussytoes, and leadplant (*Amorpha canescens*). These plants grow well in a hot, nutrient-poor environment.

Spring ephemerals are stress tolerators that have developed an annual life cycle that starts underground in the fall, when the plant uses nutrients stored in bulbs, corms, or fleshy roots to develop a root network and send up shoots as soon as the days start to lengthen in spring. These plants leaf out, bloom, and set seed or produce new plants rapidly, completing their life cycle while the trees are leafless and their roots aren't taking up water and soil nutrients.

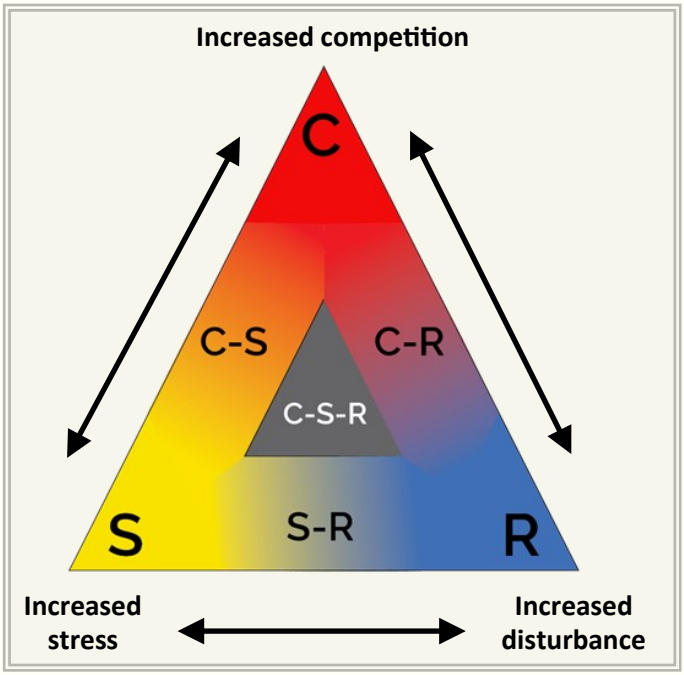
Ruderals are opportunists that take advantage of sudden influxes of resources (a fallen tree that opens the forest canopy, or an especially wet season) to grow quickly, produce a lot of flowers, and set a copious amount of seed because they have no way of storing nutrients for the next season. Many annuals and short-lived perennials are ruderals, such as *Bidens*, blanket flower, and bluebonnet.

Some ruderals, such as blanket flower and black-eyed Susan, can be relied on to provide an extended period of bloom, but others are seasonal, such as columbine and frost aster.

Many plants combine two or all three strategies to maximize their chance of surviving environmental stress. For example, milkweed has a thick root system (stress tolerator) and also produces copious amounts of seed (ruderal), but the seedlings require several years to mature (not a competitor). Pokeweed emerges quickly to fill any gaps,

(ruderal), and it also develops a thick root system (stress tolerator) that allows the plant to persist until it is shaded out by larger plants (not a competitor). Blue mist flower (*Conoclinium coelestina*) sprouts and matures quickly in a favorable environment (ruderal) and spreads quickly (competitor), but does not tolerate the stress of drought.

Natives that volunteer readily are often a combination of stress-tolerator and ruderal, filling gaps in the garden or appearing in areas that would discourage other plants, such as brick walks and patios.



Grimes's triangle of plant survival strategies.

Applying CSR theory to garden design.

Gardeners can use the CSR theory shown in Grimes's triangle to be strategic in combining plants. Planting too many competitors will cause them to try to dominate each other and will crowd out less competitive species. Too many stress-tolerates and ruderals will result in gaps when these plants go dormant or go to seed. Combining the three types of plants can maximize soil coverage and help control invasives. Many native groundcovers are stress-tolerators, slow-growing but dependable through adverse growing conditions.

Gardeners sometimes try to optimize environmental conditions in an effort to grow more plants. In fact, research shows that stress and disturbance can contribute to a wider diversity of plants. If conditions are ideal (low stress and low disturbance), Grimes's triangle indicates that competitors will dominate, and stress-tolerators and ruderals will decline. If a site is constantly disturbed (e.g., a vegetable garden), ruderals will dominate.

In the wild, increasing stress and disturbance will increase plant diversity until the stress or disturbance becomes too great and reduces the number of species that can survive in a particular location. A native meadow or prairie is a good example. The stress of inadequate water or constant grazing/mowing limits the growth of trees and tall shrubs, except near a water source, where more abundant resources favor these competitors.

Gardeners can use the CSR triangle to optimize plant diversity and manage plantings as they evolve. For maximum plant diversity, a garden should include enough stress and disturbance to control the growth of competitors and allow stress-tolerators and ruderals to survive. An easy way to include stress is to plant into native soil, rather than amending the soil with compost and fertilizers, which will favor competitors by providing extra nutrients.

Disturbing the ground favors ruderals, which includes nonnative weeds as well as native plants. Pulling or digging weeds rather than cutting them just below the soil surface will encourage ruderals to sprout, which is why weeds appear wherever new plants are added, and why pulling weeds like garlic mustard seems to encourage more of them to sprout. A better strategy for controlling undesired ruderals is to use clippers to cut the root below the crown, minimizing soil disturbance.

Watering also favors competitors. Spot-watering new plants is better than turning the sprinkler on an entire bed of established plants in order to water a few additions.

Other strategies to maximize plant diversity include:

- Plant into a 4" to 6" layer of gravel or sand. A coarse planting medium with low fertility reduces weed germination and favors stress-tolerators.
- Introduce disturbance by breaking up the edges of clumps of competitors to slow their spread and open up areas for ruderals to emerge
- Use the "Chelsea chop"-- cut back late bloomers like asters and goldenrods before July 1 to control their spread and maximize flowering.

Winter Garden Project -- Live Stakes

Live staking is plant propagation using cuttings. It involves cutting dormant stems from woody plants in late winter and rooting them directly in the ground or in pots to create new plants.

Late February to early March is the best time for live staking in our area. Live stakes need to be cut while the plants are still dormant, before they start pushing out new growth for the season, but after the soil has thawed. Live stakes can be cut before the soil is completely thawed and held under refrigeration, but this can decrease the success rate.

Good Species for Live Staking

These clump-forming pioneer species are good candidates for live-staking:

Common Name	Scientific Name
Smooth alder	*Alnus serrulata*
Speckled alder	*Alnus incana*
Buttonbush	*Cephalanthus occidentalis*
Silky dogwood	*Cornus amomum*
Grey dogwood	*Cornus racemosa*
Red-twig dogwood	*Cornus sericea*
Spicebush	*Lindera benzoin*
Ninebark	*Physocarpus opulifolius*
Pussy willow	*Salix discolor*
Black willow	*Salix sericea*
Black elderberry	*Sambucus canadensis*
Red elderberry	*Sambucus racemosa*
Arrowwood viburnum	*Viburnum dentatum*
Nannyberry viburnum	*Viburnum lentago*

Cutting dormant stems and driving them into wet soil triggers the plant's response to produce new growth. Stem nodes in contact with soil will be prompted to form roots, while new branches will develop from the nodes above ground.

Live stakes need constant moisture to establish roots. Streambanks and rain gardens are good locations. Live stakes can be planted in masses along streambanks to help control bank erosion. The cut stakes are tied in bunches with biodegradable twine and placed horizontally in shallow trenches. They are held in place with another live stake or a wooden stake. These cuttings will root and sprout branches all along their length.

How To Cut Live Stakes

You'll need garden pruners, loppers, and a bucket (or several) to carry the cuttings. Cuttings taken from the base of a branch have a better chance of producing root shoots rather than leaves, so take your cuttings as close to the root crown as possible.

Choose branches that are as thick as your thumb at the base. Use heavy loppers to minimize crushing the wood. Cut stakes 2 to 3 feet long. Curved stems are fine. Use your pruners to trim the bottom of each stake at an angle, just below a leaf node. Cut the top of the stake straight across. The angled cut is the bottom of each stake; the flat cut is the top. Each stake should have at least 6 nodes. Cut off any side branches. Keep stakes separated by species.

It's best to plant live stakes right away. Have the planting locations planned ahead of time. If needed, stems can be stored in a cool (not freezing) location for up to several weeks if the angled ends (the bottoms) are kept in water.

To plant live stakes, push the angled end into damp soil at least 1 foot deep, making sure at least two stem nodes are underground. You can use a piece of rebar as a hole starter, but make sure it's a smaller diameter than the stakes, because you want good soil contact all along the stake.

Instead of having to water dozens of live stakes all over your property every other day, you can plant the stakes in pots or tree sleeves and grow them through the summer, planting them out once fall rains start. You'll need pots or sleeves at least 10 inches tall. Plant only one stake in each sleeve, because untangling young root systems in the fall could injure them.

The one-year-old live-staked red-twig dogwood shown at right developed an extensive root system from nodes that were below the soil line.

Invasive Species -- Jumping Worms

Jumping worms (*Amynthas* spp.) are an emerging invasive threat, dramatically altering soil structure and impacting plant health. This Asian native was introduced to North America over 100 years ago. Originally found primarily in southern states, these interlopers have now moved to the northeast and mid-Atlantic states.

Earthworms native to North America are scarce and are largely restricted to forests. The common lawn and garden earthworms are natives of Europe. They are considered to be beneficial to the soil because their tunneling activity mixes soil components and improves the movement of water and air through soil. Processed earthworm castings are sold as fertilizer because these earthworms digest organic material and turn it into a nutrient-available form.

Impacts to Habitat

Asian jumping worms consume fallen leaves and other organic matter at twice the rate of European earthworms, literally eating up resources that could sustain slower consumers. The castings of Asian jumping worm do not reincorporate into the soil, locking up nutrients and making them unavailable to plants. This affects forest regeneration by decreasing the emergence of tree seedlings and herbaceous plants.

In areas of heavy jumping worm infestation, soil nutrients can be washed away by heavy rains, leaving bare soil that doesn't support regrowth of native vegetation and providing an opportunity for aggressive nonnative invasives, such as garlic mustard and Japanese stilt grass, to move in.

Identification

Asian jumping worms can be identified in several ways. One sign of an infestation is soil that appears very uniform and granular, like coffee grounds. These grains are worm casting pellets, not soil.

Asian jumping worms react strongly to being disturbed. Worms that thrash in an erratic, snake-like pattern when the top layer of soil is scratched are probably jumping worms. These worms have a prominent band around the body which is grayish white or pink and flush with the worm's body. In contrast, the body band on European night crawlers is raised and reddish-brown in color.

Treatment and Prevention

Jumping worms live in the topmost layer of soil and mulch. In most of the northeast, Asian jumping worms on residential properties arrive in mulch and other organic material. If you purchase bulk mulch or soil, make sure the material has been properly heat treated. If you already have bulk material on your property, solarization to at least 104°F for several days should kill jumping worms.

Check all plants that you bring into your garden, particularly those from plant swaps or other non-commercial sources. If you see the distinctive coffee ground-like soil, either discard the plant or remove all soil and rinse the roots thoroughly before transplanting.

Jumping worms are an annual species. A hard frost will kill the adults, but the tiny cocoons will survive the winter and hatch in mid-April, once temperatures have reached a consistent 50°F. Any treatment of a localized jumping worm infestation should include follow-up during the next growing season to eradicate the second generation.

Several substances can be used to treat small infestations, including tea tree meal (sold as a fertilizer), dry mustard, and diatomaceous earth. Tea tree meal is mixed into the top layer of soil. Dry mustard is applied as a soil drench at a rate of 1/3 cup per gallon of water. These substances irritate the worms and drive them to the surface, where they must be removed by hand.

Diatomaceous earth is also applies by mixing into the top few inches of soil. This substance could be longer-acting, causing gradual dehydration of the adults. Any treatment of the adults must be repeated the following season, after the cocoons hatch, to destroy the second generation.

Walk on the Wild Side is a new video series from Wild Ones' partners at PLAN it WILD featuring three of America's leading ecological designers: Rebecca McMackin, Edwina von Gal, and Filippine Hoogland.

Each short episode invites viewers into the presents' gardens to see how beauty, biodiversity, and balance come together in landscapes that are alive with purpose.

Watch the series at wildsideseries.com and get inspired to let your own garden go a little wild.

Events and Educational Opportunities

Jan. 21 Intergenerational Care for Land and Community: A Conversation with Robin Wall Kimmerer and Esther Bonner, Wild Ones National webinar, 7:00 p.m.

Jan. 22 Bring Back Pollinators: How You Can Save the Bees. Xerxes Society webinar. 1:00 p.m.

Jan. 22 Multipurpose Natives: Creating Habitat Through Cut Flower Gardening. Brandywine Conservancy webinar. 6:30 p.m.

Jan. 24 Native Seed Propagation. Jenkins Arboretum, 631 Berwyn Baptist Rd, Devon, PA. 10 a.m.

Jan. 28 Illuminating the Wild Potential of Shrublands. Mt. Cuba Center webinar. 6:00 p.m.

Jan. 31 Beyond Blooms: The Beauty of Winter Gardens. Mt. Cuba Center, 3120 Barley Mil Road, Hockessin, DE. 1:00 p.m.

Jan. 31 Enhancing Life in the Soil. Mt. Cuba Center, 3120 Barley Mil Road, Hockessin, DE. 9:00 a.m.

Feb. 12 Building a Pollinator Haven at Home: Tips and Lessons Learned, Xerces Society webinar. 1:00 p.m.

Feb. 18 Trial Garden Highlights: *Solidago*. Mt. Cuba Center webinar. 6:00 p.m.

Feb. 21 Ecological Design for Homeowners. Mt. Cuba Center, 3120 Barley Mil Road, Hockessin, DE. 10:00 a.m.

Feb. 21 Practical Pathways to Healthy Landscapes. PennState Extension webinar. 9:00 a.m.

Feb. 24-26 Best Practices for Pollinators 2026. Pollinator Friendly Alliance webinar. 1:00 p.m.

Mar. 7 A Journey to Backyard Biodiversity. Jenkins Arboretum, 631 Berwyn Baptist Rd, Devon, PA. 10 a.m.

Mar. 14 Lawn to Pollinator Garden. PennState Extension webinar. 9:00 a.m.

Mar. 19 Discovering Our Spring Ephemeral Wildflowers. Lancaster Conservancy webinar. 6:00 p.m.

Mar. 21 Explore the Art of Bonsai Using Native Trees. Mt. Cuba Center, 3120 Barley Mil Road, Hockessin, DE. 10:00 a.m.

Mar. 21 Gardening for Watershed Conservation. Mt. Cuba Center, 3120 Barley Mil Road, Hockessin, DE. 9:00 a.m.

Mar. 25 The Secret Lives of Spring Wildflowers. Mt. Cuba Center webinar. 6:00 p.m.

Mar. 23, 24, 30, 31 Spring Garden Series. PennState Extension webinar. 6:30 p.m.

Wild Ones Native Garden Designs

Wild Ones wants to help you create striking home landscapes that benefit wildlife and you. This site provides practical, educationally sound information on native landscaping developed specifically for first-time native plant gardeners looking for help getting started.

The site also features a growing number of free, downloadable native garden designs created by professional landscape designers for multiple ecoregions in the U.S., taking into account various light, soil, and moisture conditions.

A plant list accompanies each design and provides a quick preview of the diversity and beauty of the native plants incorporated in the design.