

Normalize Nature in Your Garden



Kristy Gallo, Pennsylvania Master Naturalist

Wildflowers and pollinators are what first come to mind for many when thinking about native habitat landscaping. While native forbs (herbaceous flowering plants) and pollinators both play a crucial role in our ecosystem, they can't do it alone. Healthy habitats require diversity. Planting a variety of flowers to extend blooms across all three seasons for nectaring is important, but so is including grasses, sedges, bare ground, shrubs, trees, fallen leaves, fungi, snags, sticks, and rocks. Together, these components provide the complexity necessary to support a thriving ecosystem.

Beyond nectar and pollen to support the adult life stage, invertebrates (and all wildlife) need safe shelter, a place to rear young and food sources for other stages of life. The larval stage of invertebrates can range from just a few days to over a decade, depending on the species and environmental factors. Fireflies for instance spend anywhere between a few weeks to a few months twinkling in the

summer night's sky but spend nearly two years in their larval phase within the layer of fallen leaves, topsoil, and other organic detritus. Thousands of bee species nest underground and hide in leaf life within an inch or two from the surface to overwinter. Butterflies and moths such as swallowtails, and the luna moth overwinter in the chrysalis phase camouflaged amongst leaves and dead stalks. Maintaining safe, undisturbed areas where organic material is allowed to collect and stay, are key components to supporting a healthy ecosystem in your yard.

Max Ferlauto, state entomologist with Maryland Natural Heritage Program conducted research to determine just how much life these fallen leaves held. Over 20 yards in suburban Maryland had data collected, and he found over 1,800 individual insects from ONE SQUARE METER of yard where leaves were retained! On average, he found 20 butterflies and moths, about 300 parasitic wasps, over 100 spiders, over 300 beetles and thousands of fly species. Max's research didn't even encompass all insects, like some of the tiny species like springtails, nor did it account



Above: Fallen leaves, branches and other dead vegetation provide shelter and food for some detritus snacking organisms like some species of beetles and fungus. Photo: Kristy Gallo

Above left: Insulated pockets found amongst a small pile of dead wood and wood fern (Dryopteris) provides sanctuary from winter weather for our smaller friends. Photo: Kristy Gallo

for the myriads of other wildlife species that shelter in and find valuable resources amongst autumn leaves.

Beyond the leaves, plants with pithy stems, such as joe-pye weed, coneflowers, hyssop, and many more are excellent habitats for small carpenter and other cavity nesting bees. Leaf cutters, mason bees and many others depend on the soft core of the stem to tunnel into. 30% of bee species in fact are tunnel nesting and they need different size stems and varied materials to construct brood

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PRESIDENT'S LETTER

Happy New Year!

The PA Native Plant Society has had an incredible year celebrating native plants in the landscape and connecting with our communities through conservation. A few highlights of 2025 include:

- \$7,728 was awarded to grant recipients across PA to support native plant gardens and student projects thanks to the dues paid by our 459 registered members.
- The Lancaster Chapter continues to be a force for good in their communities with outreach at a number of events including PA Native Species Day and the York Expo.
- Central PA Native Plant Fest featured a dozen native plant nurseries, live music, local food and conservation partners.
- Our Annual Meeting at Shaver's Creek Environmental Center saw 75 members in attendance with engaging talks by DCNR's Cheyenne Moore and PSU Entomology doctoral candidate Sophia Mucciolo.
- New merchandise was designed and made available for sale including a reimagining of the classic "Got Milkweed?" design.

The Society's impact wouldn't be possible without the hard work of members like you who volunteer their time and energy to organize and run events, engage in meaningful conversations with community members, and inspire the next generation. And an extra special thanks to the PNPS board, many of whom have been part of this organization for years and continue to see the value in native plant advocacy. I am grateful to have you as part of this team.

Looking to 2026, Vice President Jaci Braund and I have some new ideas to grow our membership and expand the grant program. We look forward to launching a newly designed website in the new year. This new online platform will include a member's portal and original members-only content. We also plan to reimagine how we support the development of new chapters throughout Pennsylvania.

We are optimistic that these developments will put us in a position to expand the organization to new heights! Our membership dues are used to support the grants program, outreach, and organizational development. With that in mind, we are increasing our membership dues and adding new levels for students and businesses.

New membership rates:

Student (new category!)	\$10/ year
Individual	\$20/year
Family	\$25/year
Lifetime	\$250
Organization	\$30/year
Business (new!)	\$80/year

Through our 2026 strategic initiatives, we hope to increase the number of paying members, expand our grants program and show the citizens of Pennsylvania why native plants are so important in our landscapes.

*Wishing you a happy and safe 2026!
Keep Growing,
Cat*



Normalize Nature in Your Garden

Leaving last summer's growth not only provides critical resources for wildlife but also brings dimension, depth and texture to winter's stark landscape.

Photo: Kristy Gallo

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cells and seal their nests. Damp ground or mud puddles and a variety of native plants near the nests will be important for construction material (mud, leaves, petals) and butterflies will also benefit from the muddy puddles to drink from. Dead plant stems, brush piles and cavities in dead wood provide habitats for overwintering larvae and pupae. In addition to installing native plants with pithy centers, you can help by cutting stems between 8 and 24 inches in the early spring and leaving them all year. These stems will become nest sites and support the generation of next year's pollinators.

For the other 70% of bee species, leaving patches of undisturbed bare earth around your landscape should be considered. The space doesn't need to be large and offering pockets scattered in different locations around your yard can host a great variety of species. If you are an avid vegetable gardener and routinely practice tilling, understand that this may kill ground nesting bees. Reducing or eliminating tilling (and compaction) can have a beneficial impact on ground nesting pollinators, as well as the health and composition of the soil for your plants.

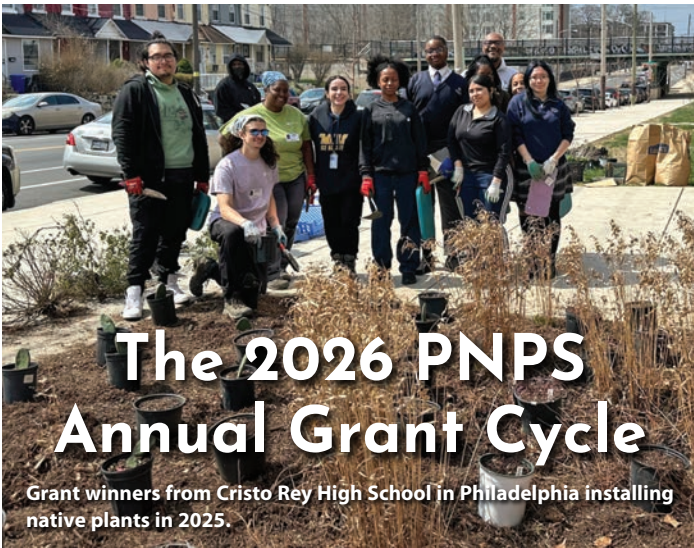
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The Pennsylvania Native Plant Society is pleased to announce the opening of the 2026 Annual Grant Program, supporting projects that promote the conservation, restoration, and appreciation of Pennsylvania’s native plants. The 2026 grant cycle includes three funding categories, including a new opportunity designed to engage communities through art.

The Native Plant Habitat Restoration & Creation category supports projects that restore, create, or enhance native plant habitats through the installation of community gardens or woodland restoration efforts. All project areas funded under this category must be located in publicly accessible spaces and demonstrate clear ecological benefits for native species.

The Student-Led Native Plant Projects category is open to students or student groups of all ages and supports both research-based and hands-on projects. Eligible proposals may focus on research related to native plants or native habitats that support native species, or on student-led efforts to install native plants and promote stewardship through direct action and learning.

New for 2026, Community Art for Native Plants invites artists and creatives to use artistic expression to highlight the importance of native plants and native habitats. Applicants may include individual artists, artist collectives, educators, or community organizations collaborating with artists. Funded projects may include public murals,



sculptures, art events, workshops, or other creative projects that engage community members and foster awareness and appreciation of native plants.

Applicants for Native Plant Habitat Restoration & Creation and Community Art for Native Plants must be active members of PNPS, while applicants for Student-Led Native Plant Projects are not required to be members. All applicants are required to submit a complete application package that includes a project budget, a signed and dated landowner permission letter, a clear project description, and a project timeline that falls within the grant year. All projects must use 100% Pennsylvania native plant species, with at least 70% of the species being straight species rather than cultivars. Complete applications must be received by the stated deadline, and incomplete or late submissions will not be considered. Previous recipients of the PNPS Annual Grant Program are required to wait two years before applying for funding again.

The annual grant application timeline opens on January 15, with applications due by February 15. Grant recipients will be announced on March 1, and selected applicants must accept their awards by March 15.

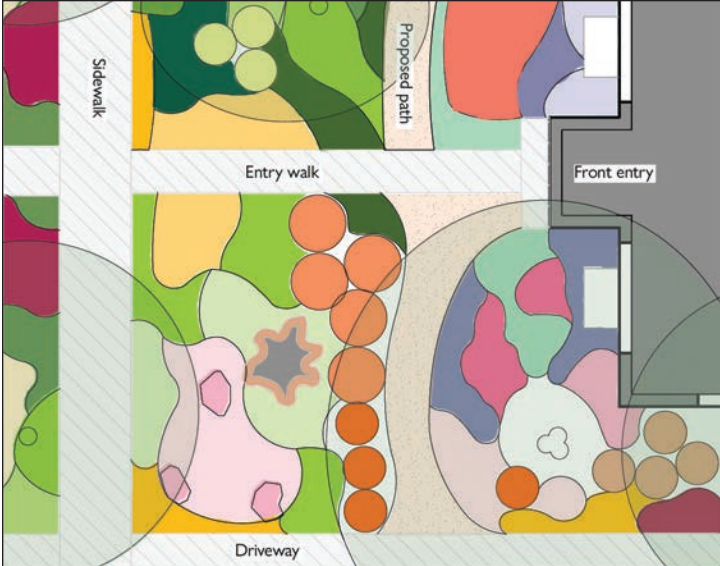
PNPS looks forward to supporting projects across Pennsylvania that advance native plant conservation, education, creativity, and community engagement.

2026 Categories

- Native Plant Habitat Restoration & Creation
- Student-Led Native Plant Projects
- Community Art for Native Plants



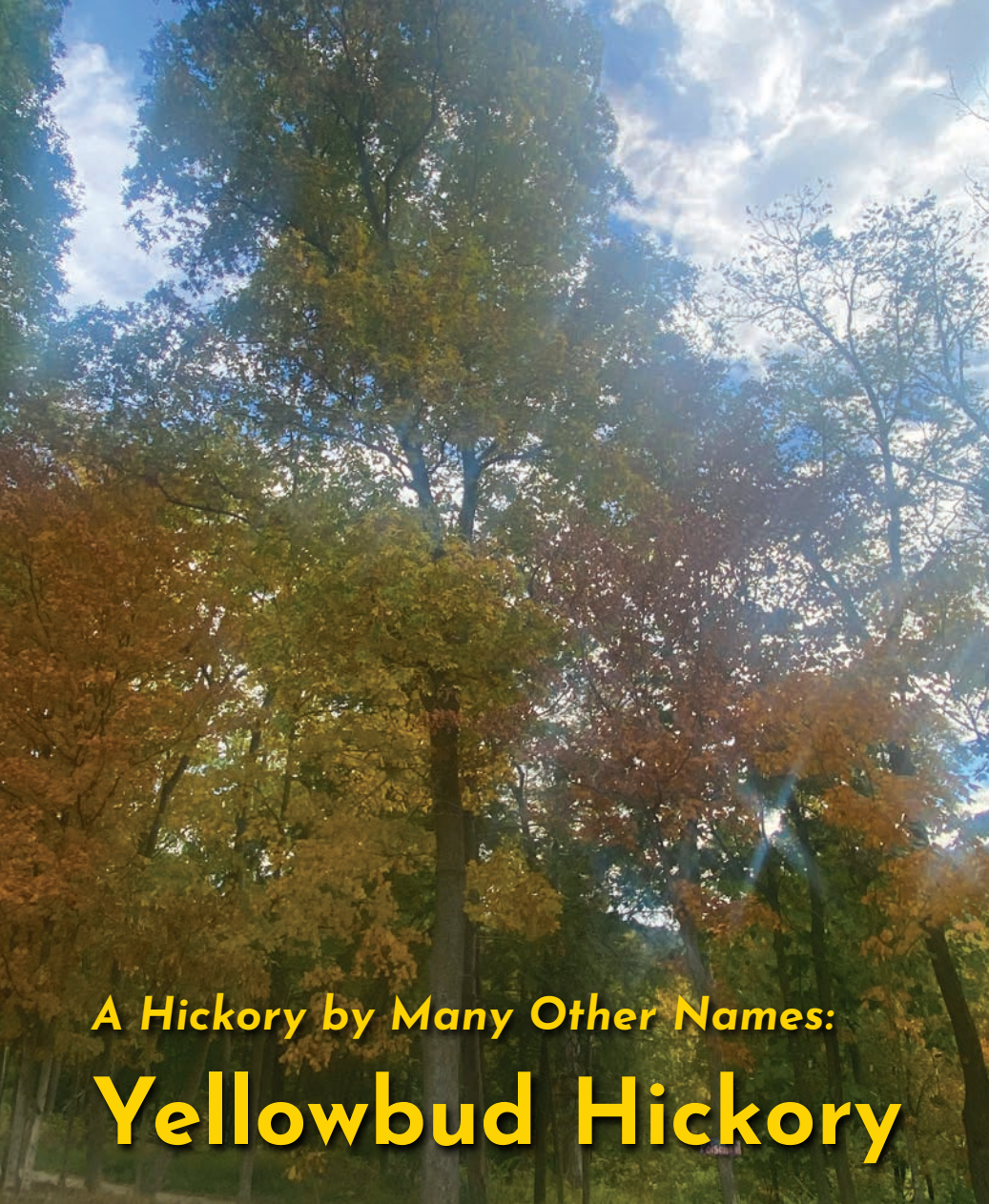
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Know your plants *but* need help putting it all together?

GARDEN DESIGN & NATIVE PLANTS





A Hickory by Many Other Names: Yellowbud Hickory

Andrea Ferich, Past President PNPS

Bitternut, mockernut, pignut, red hickory, shellbark, shagbark, black walnut, butternut, and just the edge of northern pecans; these are the members of the Juglandaceae plant family native to Pennsylvania, including the six hickory (*Carya*) species. Most people don't realize there are six native hickory species in the Commonwealth. The identification of hickories can be tricky. I know some people within the native plant community do not feel as confident with tree identification as perhaps herbaceous plants or even shrubs. Hickories have a prominent terminal leaflet, with pinnately compound alternative leaves. Immature hickories, without any buds or nuts present, are notoriously difficult to identify to a species level. When I worked for the National Park Service with Stephanie Perles and a talented

team of traveling botanists, we were taught that without the buds present, species identification of immature hickories was difficult, if not uncertain. However, even with the buds present, the distinction between shellbark and shagbark can still be difficult, and the number of leaflets must be counted. Of course, there's also some confusion over the common names, specifically, "pignut" was used for three different species of hickories. Pignut is the common name for *Carya glabra* and *Carya ovalis*, but the additional confusion began, likely after *Carya cordiformis* was assigned the wrong common name "pignut" in a botanical publication in the late 1700s. *Carya cordiformis* is also commonly called bitternut or yellowbud hickory. It is the most widespread of the hickories across North America. It is quite deserving of a unique descriptive common name, as well as recognition of its historical and present influence. I refer to it as yellowbud hickory and will do so

Left: Yellowbud hickory trees with their autumn foliage. Photo: Andrea Ferich

throughout this article. I like this common name due to the descriptive nature in identification.

In Dendrology 101 we learn that one of the most important resources in identifying tree species is to locate and examine their large terminal buds. Yellowbud hickory, as the name implies, has a sulphur-yellow bud, making identification of this species much easier.

Yellowbud is the most widespread of the 12 native hickories in North America, with tremendous wildlife and sociocultural influences and on-going potential. As a forester, I often walk with private landowners on their property. Many landowners do not realize the abundance of yellowbud hickory (*Carya cordiformis*), and the wonders that it offers. Not only is it the most widespread hickory in North America, but it also has the largest distribution of any Juglandaceae species on the continent, more than black walnut. Although easily identifiable with buds or nuts present, it is not well known. Its native distribution stretches from Minnesota to Northern Florida. The nuts are high in protein, healthy fats, and feed the ecosystems, including birds and deer.

Hickory nuts are a long-standing staple in human civilizations. Anthropologists have noted that hickory nut shells are one of the most common plant materials in archeological sites within the hickory range. There are historical accounts of indigenous communities in the U.S. making hickory nut milk, in fact it is commonly believed that the word "hickory" is Algonquin, originating from the name of a type of nut milk made from pounding hickory nut meat and boiling it. Have you tried making a nut milk from one of



The sulphur-yellow terminal bud of the Yellowbud Hickory *Carya cordiformis* during winter.

Photo: Andrea Ferich



Yellowbud hickory nuts begin dropping during September in PA. Here they are pictured in their husks. Photo: KTCC's Yellowbud Hickory Harvester's Guide

our native hickories? A stainless steel Vitamix is recommended on a household scale to crack these nuts for boiling into nut milk. Shagbark and shellbark hickories are the most commonly consumed as nut milk. They are also cracked, shelled, and eaten whole, similar to pecans. Did you know hickories can also be made into hickory nut oil? Enter the star of this article, *Carya cordiformis*. Yellowbud hickory is the most highly recommended species in hickory nut oil production due to high oil content, the nutritional profile of the oil, the ease of pressing with a very thin shell, and the abundance of distribution from river bottoms to ridgelines, growing best in deep rich soils high in calcium. In recent years there have been groups of people who have begun pressing *Carya cordiformis*, yellowbud hickory nut oil into a high-heat cooking oil, again.

As the other common name for yellowbud hickory implies, the bitternuts are bitter, but it makes an incredible cooking oil. Although the yellowbud nuts are considered too bitter for consumption, the bitter tannins are not oil soluble, and not present in the oil. It's not a nut you will crack open and eat or make into a nut milk. Yellowbud hickory has a long-standing history in indigenous communities being processed into nut oil. A few years ago a friend of mine traveled to the Midwest to study yellowbud hickory nut oil with Sam Thayer, author of *The Forager's Harvest* and *Nature's Garden*. Much of my knowledge about the uses of hickory nuts comes from Sam Thayer, and the people he has taught. Yellowbud hickory nut oil is a delicious high heat cooking oil, offering a taste similar to buttery pecan. Yellowbud is most closely related to pecans and will hybridize. The oil is high in oleic acid with a smoke point up to

400F, also delicious as a dressing. Can you imagine what opportunities we've been missing with the production of our own native olive oil alternative?

I am a producer member of Keystone Tree Crops Cooperative (KTCC), a nut cooperative that has been pressing yellowbud hickory nut oil for the last two years. We have been busy mapping prominent yellowbud hickories around the Common-

wealth accessible for gathering as we grow the supply and demand of the nut economy. Nurseries such as Future Forest Plants in Airville, PA and Yellowbud Farm in MA have begun selecting native genetics of yellowbud for oil production. In September and October of this last year I gathered nearly 50 gallons of yellowbud hickory nuts from a local farm here in eastern Centre County and sold the nuts to the cooperative. KTCC anticipates pressing 50 total gallons of hickory nut oil from 2,800 pounds of yellowbud nuts collected. The ratio of nuts in-husk to oil is approximately 16:1. Hickory nuts have outside husks and inner shells. KTCC removes the husks from the nuts

using mechanical means such as a potato peeler or pistachio peeler. After the husk is removed, the nuts are cracked in their shell. The shell is so thin on the yellowbud, shelling isn't required for pressing. The 50 gallons of yellowbud hickory nuts on the ground that I picked up produced over three gallons of cooking oil. Here's more information. The nut cooperative produced a technical guide, KTCC's Yellowbud Hickory Harvester's Guidebook. It is a free resource for identifying and harvesting yellowbuds available on the KTCC website <https://keystonetreecrops.com/resources>


Although the wildlife value and beauty of these lovely hickory trees is enough in our eyes, hickories are often a prize timber harvest, known for their hard versatile wood. It is my hope that continuing to educate ourselves about the opportunities in agroforestry systems such as forest farming, we can grow the supply and demand of the native plant economies. We can increase and diversify the ways we work together toward the protection and conservation of native plant communities.



To learn more about Hickory Wilt visit <https://extension.psu.edu/hickory-diseases>


Yellowbud Hickory

A Remarkable Native Nut Oil Crop



We're building a supply chain around Yellowbud Hickory and other nut crops. Want to forage or grow for us?

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What is Yellowbud Hickory?

Carya cordiformis also known as Yellowbud or Butternut Hickory, is native to North American and has the widest distribution of any tree in the walnut family on the continent. It's an abundant, resilient species already common in many landscapes across Pennsylvania and beyond.



Carpenter bee on common milkweed (*Asclepias syriaca*) flowers. Photo: Jack Meyer



Butterfly milkweed (*Asclepias tuberosa*). Photo: Jack Meyer



A tiger swallowtail landing on swamp milkweed, (*Asclepias incarnata*). Photo: Jack Meyer

Milkweed: Not Just Another Pretty Flower

Sophia Mucciolo, PhD student | Ecology
Pennsylvania State University

You are likely most familiar with milkweed as the host plant for monarchs — but milkweeds are fascinating plants on their own, too. Milkweeds (species in the *Asclepias* genus) are named for the milky-white, sticky sap called latex that they produce when damaged. Along with producing latex, all milkweeds produce flowers with 5 petals and seed pods that split open when they mature.

Besides these shared traits, milkweeds are a diverse group of species that vary in almost every other way. In fact, there are over 70 milkweeds native to North America. They boast adaptations that allow them to live in extremely different environments. While many can be found in prairies, some can be found deep in wetlands (aquatic milkweed, *A. perennis*) or the Sonoran Desert (desert milkweed, *A. subulata*). Many species, especially those that thrive in specialized habitats, are threatened or even endangered.

Milkweeds also vary aesthetically. Flowers can be white, green, pink, or even bright orange. Some species have striking flower or seed pod shapes. Plant height can vary from close to the ground to over five feet tall. Some are clonal and can easily spread through a landscape, while others only spread through seed and tend to stay in one spot. This diversity means that there is typically a native milkweed species that will grow happily in your habitat and fit into the aesthetic of your garden!

Why plant milkweed?

Milkweed is most well-known as the host plant for monarch butterflies, but growing milkweed is a great way to support many other native insects. Because milkweeds have

evolved many defenses against being eaten (such as latex and toxic chemicals in their leaves), most insects that feed on milkweed are considered specialists. These insects are adapted to only eat milkweed and do not live on any other plants. Some milkweed insects, like monarchs, feed on many different milkweed species. Other insects prefer certain species of milkweed. For example, the swamp milkweed leaf beetle prefers swamp milkweed, as its name suggests. The common milkweed aphid is a native aphid that lives exclusively on common milkweed. Along with these specialist herbivores, milkweed produces nectar that is loved by many pollinators. Native bees, butterflies, and moths can all be found drinking nectar from flowering milkweed.

Which milkweed should you choose?

Because there are so many species to choose from, selecting a milkweed to grow can be difficult. In Pennsylvania, there are three native species that are commonly planted: butterfly milkweed, swamp milkweed, and common milkweed. All three of these species can often be found as seedlings at plant nurseries in the state.

■ **Butterfly milkweed**, *Asclepias tuberosa*, is a short, bushy plant that produces bright orange flowers. This is the only known milkweed species that does not produce any latex. Plants rarely grow more than two feet tall and do not spread clonally, making this a good species for manicured gardens. Monarchs do not use this species as much as other species, but this is a great choice to attract pollinators.

■ **Swamp milkweed**, *Asclepias incarnata*, is a taller species of milkweed that produces pink flowers. Similar to *A. tuberosa*, swamp milkweed tends to produce clusters of multiple

stems from the same root, which can give it a bushier appearance. Despite its name, this milkweed does not require a swamp to grow, though it does prefer moist soils. Research shows that monarch butterflies prefer to lay eggs on this species over other species, so planting swamp milkweed could attract more monarchs to your garden.

■ **Common milkweed**, *Asclepias syriaca*, is one of the most numerous milkweeds in North America and can often be seen growing along roads. It is prolific because it can reproduce clonally, so one plant can quickly spread across a landscape. Additionally, it can thrive in a variety of environments, though it typically prefers partial to full sun. Because of its ability to spread, this is a great choice for planting in non-manicured spaces. The plants grow tall and produce spherical clusters of pink flowers. Monarchs are also likely to lay eggs on this species, and it is common to find caterpillars on these plants.

If you have space in your garden, I encourage you to plant native milkweed species! Other than the three highlighted here, there are a few rarer natives that you may be able to find, like poke (*A. exaltata*) or whorled (*A. verticillata*) milkweed. Planting milkweed adds a beautiful plant to your landscape, but it also supports native plant populations and the native insects that rely on them!

REFERENCES

- Borders, B. & Lee-Mäder, E. (2014). Milkweeds: A Conservation Practitioner's Guide. 143 pp. Portland, OR. The Xerces Society for Invertebrate Conservation.
- Lady Bird Johnson Wildflower Center. (n.d.). Plant Database. www.wildflower.org/plants

Normalize Nature...

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Elimination of pesticides on your property is always best but if necessary, or you live next to a pesticide prominent neighbor, non-flowering buffers may be useful in preventing pesticides from leaching into areas where bees may be nesting. Logs and brush piles are another effective way to provide habitat for a diverse group of beneficial insects and other wildlife. These piles can add visual interest or easily be tucked away in a fence corner, woodland edge, behind a hedge or under a tree. Rocks also provide important habitat when piled and stacked and is another way to integrate visual appeal with organic material. You'll want to include a diversity of rock types and sizes and assemble with a messy configuration to help ensure there are air spaces and some access to the ground. Incorporating native bunch grasses around rock piles offers another layer that will help support nesting bumble bees and overwintering ground beetles.

The historical European American approach to gardening has been highly



Rocks are an inherent feature of the ridge and valley section of Centre Pennsylvania. Integrating rocks into your landscape can provide shelter, as well as visual interest. *Photo: Kristy Gallo*

controlled with monocultures of sterile lawns as a dominant feature. Change is hard and traditions and definitions can seem rigid. However, as more of us take steps to normalize nature and reframe what beauty is in the landscape at home and within our community, the more familiar, routine and accepted it will become. Do what you can, in your space, with your time and ability...it doesn't have to be all or nothing. Maybe that's just candid conversations with friends and family, or a native garden in a small corner of your yard. Maybe you leave the fall

leaves around trees at the back of your property and tuck the ones in the front yard into your garden beds. Perhaps it could be through a school project focused on stewardship or transforming a median or hellstrip to native habitat. Incorporating yard signs is a great tool to explain what you are doing and inspire others to make their own landscapes more sustainable.

Fostering habitat at home may seem trivial in the face of widespread pollinator decline, climate change, and habitat loss — but it's not. Large or small, these connected spaces are knitting a patchwork of habitats that support wildlife across the landscape, enhancing biodiversity and strengthening ecosystems, making a meaningful difference for all life...including ours.

Save the Date!

2026 Central Pennsylvania Native Plant Festival

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