Wild Ones

NATIVE PLANTS, NATURAL LANDSCAPES

WINTER 2022 • Journal • VOL. 35, NO. 4

Cover Photo: Laura Stellmacher

A voice for the natural landscaping movement.

Giving thanks for your hard work

Sally Wencel

By Sally Wencel

Greetings, Wild Ones, and best wishes for a fruitful and healthy holiday season. I am pleased to write my last president's letter, partly because it means I am passing the reins to our capable next Board President, Loris Damerow, and partly because I often find it hard to express my thanks to you for all your hard work and commitment to the Wild Ones' mission.

We are wrapping up another year of remarkable growth in membership, extending our reach to our friends, neighbors, policymakers and current and future leaders. I don't know about you, but it feels to me like people are hungry for solutions to worsening climate change, and our message of sustainable landscaping gives people real and achievable ways to do their part. We have commissioned 10 new geographically specific native garden designs that will be published soon on the Native Garden Designs website. The Native Garden Designs webinar series is expanding to include these new designers discussing the climate issues their designs address. More information will be shared soon about how you will be able to access these helpful videos. Make sure you spread the word!

We lost renowned ecologist and myrmecologist E. O. Wilson almost a year ago. He was a voice for preserving ecosystems and a thought leader. A quote attributed to him sums up how I see Wild Ones: "You teach me, I forget. You show me, I remember. You involve me, I understand."

When we work and volunteer within our communities, we make a more lasting impact. Through our chapters and as individuals (thank you, partners at large), Wild Ones members involve people at all levels, from preschoolers to retirement center residents, in projects that demonstrate the importance of native plant landscapes to improving the environment.

I've enjoyed hearing from you about your many community projects, especially when you tell me how you have changed your neighbors' and policymakers' minds about the importance of native plants. Sometimes the "hook" is when bird lovers see more frequent and diverse birds in their midst; sometimes it's the new butterflies and bumblebees. You've told me how when you've helped people remove exotic pest plants, they see new wildflowers emerge. I appreciate your stories and they give me hope. I thank you.

Finally, I humbly ask that you consider supporting Wild Ones in your annual giving. As Wild Ones grows, we face greater demands for resources and support. With your generosity, we are better able to provide you with the tools you need to get — and keep — your community involved.

Wild Ones
NATIVE PLANTS, NATURAL LANDSCAPES

Promoting environmentally sound landscaping practices to preserve biodiversity through the preservation, restoration and establishment of native plant communities

NATIONAL OFFICE WILD CENTER
2285 Butte des Morts Beach Road
Neenah, WI 54956
Phone: 920-730-3986
Email: info@wildones.org

NATIONAL STAFF CONTACT INFORMATION

Executive Director
Jennifer Ainsworth • 920-730-3986
execdirector@wildones.org

Brand & Communications Manager
Katie Huebner • 920-730-3986
khuebner@wildones.org

Membership Coordinator
Rachel Jaschob • 920-730-3986
rjaschob@wildones.org

Chapter Liaison
Lisa Olsen • 920-730-3986
lolsen@wildones.org

Administrative Assistant
Cara Nagy • 920-730-3986
cnagy@wildones.org

IT Manager
David Kryzaniak • 920-730-3986
david@wildones.org

BOARD OF DIRECTORS
President
Sally Wencel • 423-313-3620
Please leave a message after the tone
president@wildones.org

Vice President
Loris Damerow
vp@wildones.org

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secretary@wildones.org

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Established in 1977, Wild Ones is a national not-for-profit organization of members who teach the benefits of growing native plants and work together to grow and restore natural landscapes.

Wild Ones' definition of a native plant:
A native plant is a species that occurs naturally in a particular region, ecosystem and/or habitat and was present prior to European settlement.

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Wild Ones Journal
– Editor –
Barbara A. Schmitz
journal@wildones.org
(Please indicate topic in subject line.)

– Contributing Writers –
Roger and M. Rebecca Anderson • Cindy Crosby
Eric Fuselier • Katie Huebner • Holly Latteman
Deb Lebow Aal • Peter Lesica • Jillian Neece
Mackenzie Seymour • Lucy Valichtka

– Design/Layout –
Kevin Rau

– Copy Editor –
Alyssa Pritzl

– Proofreader –
Mariette Nowak

NEWS
ACROSS THE NATION

ARIZONA
Specially trained dogs are using their noses to locate endangered orchids in Arizona deserts, Axios Phoenix reports.

Trained scent dogs Circe and Muon helped researchers locate several orchids, known as Canelo Hills ladies'-tresses (*Spiranthes delitescens*).

The orchids are an important part of the desert ecosystem, but they grow in ciénegas, a type of desert wetland that is disappearing because of the western megadrought.

The plants have been endangered since 1997; researchers plan to collect some of their seeds so they can grow and reintroduce them.

NEVADA
Every store-bought milkweed sample tested in a recent study contained multiple toxic pesticides, placing monarchs reliant on these plants in harm's way at a time the species can ill afford any further loss to its population.

A study published in Biological Conservation found that many retailers are dousing their "wildlife-friendly" plants with pesticides that put this vulnerable species in further danger.


Photo: Barbara A. Schmitz

Monarchs nectar on swamp milkweed (*Asclepias incarnata*). A recent study showed that store-bought milkweed tested contained multiple toxic pesticides. Testing was conducted by purchasing milkweed plants at 33 different stores spanning 15 states.

"That was the most shocking part," said lead author Christopher Halsch, a doctoral student at University of Nevada, Reno. "The fact that plants labeled as potentially beneficial or at least friendly to wildlife are not better, and in some cases, might be worse than other plants available for purchase. This research sheds light on how pesticides may impact western monarchs, but many other butterflies are facing even steeper population declines, and pesticides are likely one driver."

Testing was conducted by purchasing milkweed plants at 33 different stores spanning 15 states. A sample of each plant was cut after purchase, and then sent to the lab for chemical analysis. Screening was conducted for 92 different pesticides, including insecticides, fungicides, herbicides and the synergist piperonyl butoxide.

Out of the 92 pesticides tested, 61 compounds were discovered in milkweed samples. Every sample contained at least two pesticides, and certain plants contained more than 25 chemicals.

PENNSYLVANIA
Pennsylvania has created three new state parks in the Chesapeake Bay watershed, largely possible due to revenue from natural gas fracking operations on state forestland, The Bay Journal reported.

Big Elk Creek State Park, containing 1,712 acres, was once owned by the du Pont family. It features 190 acres of floodplains, 600 acres of woodlands, 100 acres of native grass meadows, 800 acres of farmland and 3.5 miles of Big Elk Creek.

Susquehanna Riverlands State Park was purchased from a family that accrued the riverside woodlands and farm country over 100 years. It includes nearly 1 mile of shoreline along the Susquehanna River and 1.5 miles along the Codorus Creek. It connects with an adjacent 1,041-acre nature area owned by the Lancaster Conservancy.

Vosburg Neck State Park is mostly forested and includes a remnant of a canal system from the 1800s, a historic cemetery and a tunnel on an abandoned railroad. It is wrapped inside an oxbow bend of the Susquehanna River's North Branch.

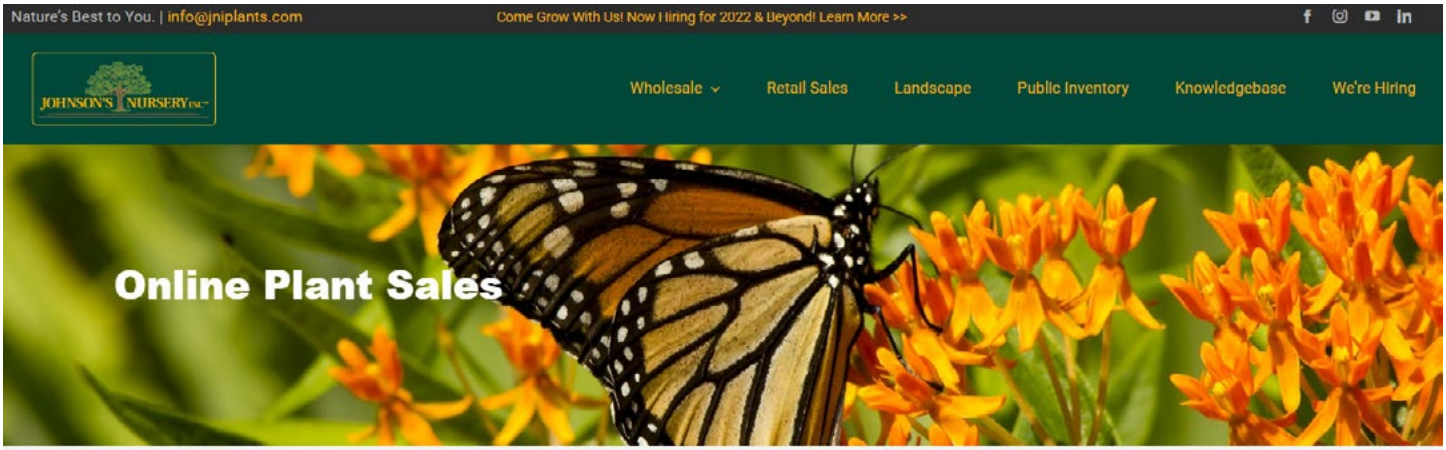
WISCONSIN
A dozen Wisconsin monarch butterflies that emerged from their chrysalises two months later than normal, got a big lift from FedEx.

The monarchs, neatly packaged in an insulated FedEx box, made a 1,600-mile overnight journey from Appleton International Airport to a home in Mission, Texas, to catch up with fellow monarchs already in South Texas on their migration to Mexico, according to The Post-Crescent.

The shipping cost $130 and was paid by Friends of Butterfly Gardens Inc.

Jack Voight, president of the nonprofit organization, said $130 is a small cost to save 12 monarchs, which otherwise would be in peril on their flight to Mexico at this time of year due to a lack of nectar along the way and the potential for freezing temperatures.

The monarchs were found as eggs by Alicia Griebenow on her and her husband's property in the town of Dale where she had planted seven varieties of milkweed to attract monarchs.



How Online Plant Sales Work

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Rob Dummert, VP Sales + Business Development
Cell: 262.225.2809
rdummert@jniplants.com

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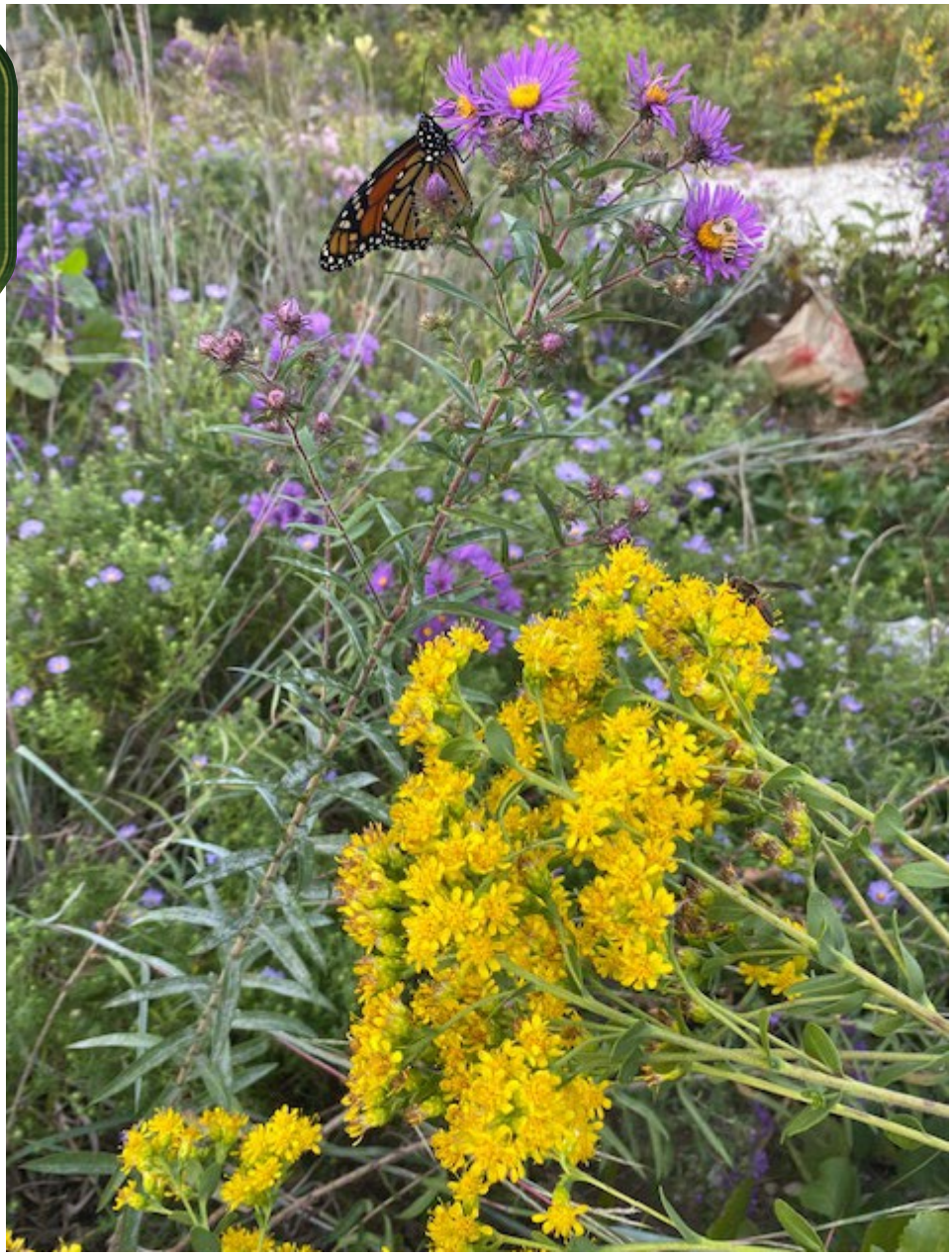
Member Garden

Susan and Kei Pang
St. Louis (Missouri) Chapter

All photos courtesy
Susan Pang



A monarch butterfly nectars on New England aster on the Pang property

By Barbara A. Schmitz

If there is one thing certain about Susan and Kei Pang, it is that they are serious about being ecologically friendly, from building a new home for themselves, to creating a native landscape that is home to many insects, birds and other animals.

In 2016 the Pangs hired the architect who designed the Mid-America Buddhist Association in Augusta, Missouri to custom design their Creve Coeur, Missouri home, Susan said. "At the outset, we knew that we would build a climate-adapted landscape to match the climate adaptations built into the house like solar and geo-thermal, 2x6 framing with higher R factor insulation, 5/8 drywall throughout and a metal roof to start the journey of the rain being escorted to rain gardens."

In 2017-18, they started working on their landscaping. "We rented machines for digging trenches and rain garden basins and berms," Susan said. "We hired someone to operate the equipment and help with the digging, but much of the work we did ourselves."

A Master Gardener since 2010, Susan said she really started to understand the importance of native plants and habitats after being assigned to the Litzsinger Road Ecology Center. That experience, along with the experience she gained by planting natives at their previous home, helped her to come up with ideas for their Creve Coeur property.

The biggest difference at their new home is that she didn't have to rip things out. "The bulldozer did that," she said.

Reading articles about native landscaping and becoming a Wild Ones member helped fill in her knowledge about things she didn't know.

But she knew one thing: "Every landscape is unique, and every person has different experiences," Susan said.

The Pangs also knew there were things they didn't want on their property, such as an irrigation system, which they had at their previous home. That, she said, was an "ordeal," dealing with maintenance.

Pang said she always had a plan in her head for their landscape. "I just knew how it was going to work, but I never wrote it down."

At first her husband Kei didn't understand her passion for natives and why they were doing what they were doing. But now he understands and has done "a lot of shoveling and digging" to convert their property into a paradise for pollinators, insects and other animals, Susan said.

Their own property is just a little shy of 1 acre, but they also care for

Member Garden

Susan and Kei Pang
St. Louis (Missouri) Chapter

Left, top: Another example of a healthy border of elderberry shrubs keeping invasives at bay. Left, bottom: Fences add accent borders and protect habitats from domestic pets. Above: The Pang prairie in the first year. While it looks bare, it was filled in with transplants and heavily seeded.

the property of a neighboring garden chapel, bringing their total bit of heaven to 3 acres.

"Our native plant area is the entire property plus several acres behind our home where we managed to eradicate a 50-year infestation of bush honeysuckle over the course of several years," Pang said. They hired someone to "root dock" the several acres because "it was the healthier way to protect the animals and desirable plants we wanted to keep," she said. "Even with the bush honeysuckle, there was still some neat plants worth preserving like sassafras and elderberry."

For others dealing with invasives, Pang recommends they have realistic expectations.

"Our philosophy is that when we get rid of something, we aggressively and abundantly plant and seed the area and keep it up," she said. "In our situation, the best natives to plant were things that grow like honeysuckle, such as elderberry or sumac. They sucker and shoot out rhizomes … and have a huge roots web under the ground."

That heavy abundance helps to keep the plant or plants you don't want at bay, she said. Still, she does a honeysuckle sweep one or two times a year to get rid of the few plants that somehow survive.

Pang said their landscaping follows the lay of the land.

"Our house sits higher than the downward sloping majority of the land, so this naturally lent itself to rain gardens," she said. "The rainwater is channeled off the metal roof, into the gutters, downspouts and under the pavement to three basins. The higher ground consists of a drought-loving prairie and there are woodlands on the periphery. Also, we put in a special area that I call a permaculture area where garden and food scraps are fed to composting worms, eliminating the need for excessive landfill waste."

About the garden

- Susan and Kei Pang's property is located in Creve Coeur, a suburb of St. Louis, Missouri. The city derives its name from Creve Coeur Lake, which is shaped like a broken heart.
- Their property is home to lots (hundreds or perhaps thousands) of native plants and has earned St. Louis Audubon Society's Home Silver, Gold and Platinum honors. It includes three rain gardens, a frog pond, a prairie, woodlands and a permaculture area.
- Susan's favorite wildflower is wild quinine (*Parthenium integrifolium*) because the white flowers bloom for quite a long time and the foliage is large and bold. But she also likes prairie dock (*Silphium terebinthinaceum*) and purple poppy mallow (*Callirhoe involucrata*). She says: "Basically, it is hard for me not to love most plants as I get to know them and see their wonders up close, after spending years watching them grow and seeing the butterflies, moths, birds and insects they attract. It is gratifying to see finches eating the seeds from coneflowers and even from sweetgum trees!"
- The Pang yard is often visited by monarchs, hawks, owls, fox, deer, wild turkey, squirrels, tree frogs, toads, many kinds of song birds and insects including bees and spiders.

Member Garden

Susan and Kei Pang
St. Louis (Missouri) Chapter

Above, left: The Pangs planted additional native perennials under shrub colonies to add even more protection from aggressive invasive plants. Above, right: Paths throughout the Pang yard help with maintenance and make for more pleasurable walks.

Pang said she learned about permaculture in 2018 while studying in Guatemala for five weeks. "Being immersed in it got me interested in it … and made me realize how important it is to reuse resources like coffee grounds and to make compost with table scraps."

She said you don't need to spend a lot of money to do it — you can use old trash cans – and you'll find it turns into beautiful black soil without doing much.

Pang said she also asks neighbors if she can have their leaves, which she uses for composting. "I always leave the leaves and have never raked, and just allow them to decompose."

She's also placed signs on her property to educate her neighbors and others that her property has native plant gardens. Again, it helps people to understand her landscape is intentional, she said.

People new to native landscaping should join like-minded organizations, Pang recommended. "We're fortunate that in the St. Louis area we have many organizations like the Sustainable Backyard Network, St. Louis Audubon Bring Conservation Home, Shaw Nature Reserve, Grow Native and the Missouri Prairie Foundation, Master Gardener and Master Naturalist programs … and of course Wild Ones is a national organization with many opportunities to continue learning."

These groups not only help with learning, but many also offer seed swaps or hold plant sales, allowing you to save money, she said, as you transform your property.

Lastly, Pang recommends people read books about natives, such as "*Garden Revolution* by Larry Weaner.

While the Pangs belong to the St. Louis Chapter of Wild Ones, they also spend time in other states that have chapters and are even starting a seedling chapter in South Dakota where they own land.

"The whole state doesn't have a Wild Ones chapter," Pang said. "We spend a significant amount of time there, so we are trying to build a community of people to start a chapter. I've done projects there for fun, such as putting bat boxes in the Whitney Preserve, but I know if I put my heart and soul into this, we could really get it going."

Susan said she feels nature rewards us, and she wants others to experience that same feeling.

"I feel like we're doing something for nature, and doing a lot for ourselves," she said. "Native landscaping is a spiritual experience for me."

For instance, Pang said she has many bees in their yard, but she's never been stung by one.

"If you become comfortable in your garden, then the garden becomes part of you," she said. "I'm part of that landscape and that landscape is part of me."

Editor's Note: We'd like to feature members' native gardens, large or small, in upcoming issues. If you're interested in sharing your native garden, send four to six high-resolution photos, as well as a brief description, to *journal@wildones.org*. Please include your contact information so we can follow up.

Photo: Rhododendrites, CC BY-SA 4.0, via Wikimedia Commons

North America lost more than a quarter of its breeding birds between 1970 and 2019, including losses among blue jays, which are important seed dispersers. This male Cyanocitta cristata, was seen in Prospect Park in Brooklyn, New York.

Bird losses hinder plants' adaptation to climate change

By Gustave Axelson

More than half of plant species on Earth rely on animals to disperse their seeds. New research published in the journal *Science* this year warns that the vital thread of many ecosystems is fraying, with the loss of birds and mammals inhibiting the ability of plants to shift their ranges and adapt to climate change.

The study showed the ability of animal-dispersed plants to keep pace with climate change has been reduced by 60% due to the loss of mammals and birds. The researchers mapped the contributions of seed-dispersing birds and mammals worldwide, and then compared maps of seed dispersal today with maps showing what dispersal would look like without human-caused extinctions or species range restrictions.

"Some plants live hundreds of years, and their only chance to move is during the short period when they're a seed moving across the landscape," says lead author and visiting Assistant Research Scientist at the University of Maryland Evan Fricke. Fricke says that plant communities are attempting to shift to higher latitudes or higher elevations to adapt to a warming climate, as well as shifting ranges in response to changing precipitation patterns. "If there are no animals available to eat their fruits or carry away their nuts, animal-dispersed plants aren't moving very far."

Fricke said this study is the first to quantify the scale of the seed-dispersal problem globally. The study showed seed-dispersal losses were especially severe in temperate regions across the globe, including North America — where other research led by the Cornell Lab of Ornithology has documented the loss of 3 billion birds since 1970. About one in four blue jays (*Cyanocitta sp.*) have been lost in North America, for example. Blue jays play a key role in dispersing the seeds of oak and pine trees.

"The [Fricke] study is a vivid illustration of the interconnectedness of living systems, and how the decline of one species can have impacts that ripple across an entire ecosystem in ways we would never have imagined," says Ian Owens, director of the Cornell Lab. "It's this effect that people are referring to when they talk about the risk of 'ecological collapse.' It's also another example of how our incredibly deep knowledge of birds can reveal an even broader pattern: birds as the canary in the global ecosystem coal mine."

Reprinted with permission from the Spring 2022 issue of Living Bird magazine, published by the Cornell Lab of Ornithology.

In the face of change, how you can make a difference for birds

Photos by Holly Latteman

Left: A cedar waxwing in a tree on a Wild Ones Columbus nature hike. Right: Indigo bunting.

By Holly Latteman

Feathered friends bring something special to our natural world, whether it be the cheery song of an American robin, the chipping of a sparrow, the numerous calls of the northern cardinal, the bright color of a migrating warbler or the sight of a raptor flying above. These are just some of the many birds you may encounter on your next hike.

When you are aware of nature, a new world opens for you. Now, imagine that world without the glorious noise or striking appearance of birds. How quiet would our outside world be? How dull would the bare tree branches be?

Climate change is affecting the world around us in more ways than we can even imagine. Species are becoming less numerous, rare or shifting ranges in response to climatic variables. Education and research are more important than ever in understanding the scope of the problem. As conservationists, our message is critical. We encourage others to take action and be part of the solution.

If you are familiar with the birds in your backyard, you may have noticed that some years bring large groups of the same species. The cause for this is food availability and it's driven by shifts in the climate. In certain years, trees will "mast" or produce large quantities of seed. Masting occurs generally by region, requiring specific climate conditions for trees to store enough energy to produce large quantities of seed. When trees produce lots of seed they provide food for large quantities of birds.

However, when the opposite occurs, birds will migrate to other locations in search of food. This sequence of events is referred to as an irruption. Perhaps the most common irruptive species are pine siskins, red-breasted nuthatches and snowy owls. While scientists are researching the patterns of irruption years and masting, you can play an important role in data collection. Community scientists can help researchers by contributing their sightings to datasets like Project FeederWatch or eBird. Sightings can then be used by various researchers to understand how climate is changing the patterns of birds.

Providing habitat and food are other ways that you can make a positive change for our feathered friends. Planting native plant species provides critical habitat and food that allows bird species to thrive. Native plant species support a vast amount of life. One oak tree can support hundreds of caterpillar and moth species, which many young nestlings depend on. While insects are critical to the successful fledging of many nestlings, they are not the only essential food source.

Native plants that produce seeds and fruits are also an important part of the equation. Climate change is impacting these delicate interactions at every level with great complexity. Shifts in the timing of insect emergence and bird migra-

Top to bottom: Baltimore oriole; Carolina wren; White-crowned sparrow

tions concerns many biologists studying phenology. Without food resources, pairing and mating to recover populations cannot occur.

Climate change is also affecting nesting patterns of migratory species. Unprecedented cold snaps and unpredictable weather can affect the success of a new nest or nestlings, causing yet another decline. However, there is hope and we can make a difference.

As climate change impacts the food groups birds depend on — insects, seeds and fruits and berries — it is important to maximize your impact. You can make a difference by planting prairie species that flower at different times to promote seed or berry availability throughout the fall/winter seasons, or planting only native species that promote a flourishing ecosystem.

Creating and preserving a habitat that supports a changing ecosystem is vital to the mission of The Dawes Arboretum in Newark, Ohio. The Arboretum seeks to fulfill the mission set forth by founders Beeman and Bertie Dawes, "enriching lives through the conservation of trees, nature and history." One of the focuses of that mission is to create a habitat that supports a changing climate. Each year, The Arboretum collects native seeds in order to restore large areas of prairie, wetlands or woodlands. Each restoration or reforestation area poses a different research question. Understanding how climate affects different plant and/or tree species is one of the overarching themes of this research.

The Dawes Arboretum sustainably collects seed from the southern areas of a plant species' range. This ensures that as climate predictions of warming temperatures occur, the plant already has an advantage in the extremes it can tolerate. Sustainable collecting of seed is another critical tenet of creating a habitat. The Dawes Arboretum follows a collection policy containing rules on how much seed to collect in any given area, and the storage/processing of the seed in order to promote the best possible germination. Sustainable collecting allows for you to collect a few seeds to create a new habitat, while also leaving seeds for the birds that depend on them in the fall and winter months.

While climate change looms, it is important to focus on the actions that we can take to improve the outcome. A few of these actions include educating ourselves on the climate research initiatives that are occurring, creating native habitat that supports the largest diversity of species, and contributing to community science by closely observing the natural world around us. We all have the power to make a difference for birds and the world they depend on.

Holly Latteman is the science and conservation manager at The Dawes Arboretum, a Wild Ones National Director and president of the Wild Ones Columbus (Ohio) Chapter.

Part 4 of a 4-part series

Broadening our focus: Optimizing how we use native plants

By Eric Fuselier

For many people, the term "heavy metal" brings to mind bands such as Black Sabbath, Iron Maiden or Metallica. But in the fields of chemistry and environmental toxicology, heavy metals take on a completely different meaning.

The heavy metals of concern to us today are those that are found naturally in the earth. These heavy metals are often mined and then concentrated as a result of human activities, where they can enter plant and animal tissues through different forms of exposure.

While small amounts of some heavy metals, such as iron or zinc, are essential for certain biological processes to be carried out, this isn't the case with all heavy metals. Some heavy metals such as lead are highly toxic in any amount, while others, such as copper, are toxic only if taken in excess or encountered in certain forms. Once in the body of a living organism, toxic heavy metals can bind to and interfere with vital biological processes.

One of the ways humans and wildlife are exposed to toxic heavy metals is through contaminated soil. Soil can become contaminated with heavy metals through a variety of means, from smelting operations, leaded gasoline and paint, wastewater irrigation, and by land application of fertilizers, pesticides, animal manures and sewage sludge.

Soil is a major sink for heavy metals and can pose risks and hazards to both humans and the ecosystem, through such means as physical contact or direct ingestion of contaminated soil, through the drinking of contaminated groundwater, or through the food chain (soil-plant-human and soil-plant-animal-human). Exposure to toxic levels of heavy metals can have adverse effects on human health, such as decreasing our immunological defenses, impairing our mental faculties, and increasing our risk of upper gastrointestinal cancer.

Photo: Tom Potterfield, Flickr

Switchgrass (*Panicum virgatum*) is a hyperaccumulator of both cadmium and lead. However, since it is an herbaceous species, its aboveground biomass will die back each year and redeposit any heavy metals it extracted back onto the soil surface.

Phytoremediation using the "Big Four" native warm season grasses offers one potential solution for remediating soil contaminated with some of these heavy metals.

How it works

Unlike organic contaminants, heavy metals cannot be broken down to make them less toxic. Because of this, methods different than those previously discussed in this series of articles will need to be used to remove these elements from contaminated soil.

The first step is to identify native species that can colonize metalliferous soils. Heavy metals generally produce toxic effects on most plant species, making it difficult or impossible for them to survive in these

soils. Adverse effects that heavy metals have on plants include low biomass accumulation, chlorosis of leaf tissue, inhibition of photosynthesis, altered water balance or altered nutrient assimilation, all of which can ultimately cause the plant to die. However, some plant species have evolved physiological mechanisms that enable them to tolerate metal toxicity, allowing them to grow in soil contaminated with heavy metals.

"Accumulator" species are those plant species that can absorb metals from the soil into their tissues. In order to do this, the metal must first be dissolved into a solution that the plant roots can absorb. Once this has happened, the plant roots can then absorb the solution, along with the heavy metal. Once absorbed, the plant must then surround the heavy metal and bond it chemically to an organic compound (a process known as chelation) to both protect itself and make the metal more mobile. Once the metal has been chelated, the plant can then transport the metal to a location where it can be stored safely. The transportation stage is the most critical since the heavy metal is most likely to damage the plant during this process, and the plant must adapt to any damage the heavy metal causes. Once the heavy metal has been transported, it is then stored in a location where it cannot damage the plant, typically within the vacuoles of the plant cells.

"Hyperaccumulator" species are similar to accumulator species, but can absorb extremely high levels of heavy metals into their tissues due to having overdeveloped metal transport systems. In hyperaccumulators, heavy metals are most often stored in the vacuoles of the cells within the leaves of the plant.

With these adaptations in mind, there are two phytotechnological mechanisms that we can make use of when trying to improve the quality of soil contaminated with heavy metals:

Big bluestem (*Andropogon gerardi*) is an accumulators of copper and can be used to lower copper levels in soils where concentrations are too high for food production.

• **Phytoextraction** refers to the absorption and uptake by plants of large amounts of inorganic contaminants such as heavy metals, and to the translocation of these contaminants into the aboveground parts of these plants. With this technique, consider using hyperaccumulator species, or accumulator species with a high growth rate that produces a high quantity of biomass. For these species to effectively remediate soils contaminated with heavy metals, the plants must be harvested after an adequate period of growth that allows them to accumulate the metal contaminants in sufficient quantities, and then be removed and disposed of in a manner that is in accordance with local, state, and/or federal environmental laws and regulations. For herbaceous species this means harvesting the plant at the most optimal time during the growing season to maximize the uptake of soil contaminants before the above-ground portion of these species begin to decompose and return the elements to the soil.

• **Phyto metabolism** refers to the uptake of heavy metals by plants followed by the incorporation of these heavy metals into their tissue as nutrients. At low levels, some heavy metals such as copper, nickel and zinc are nutrients that are essential for plants to carry out their physiological processes. Depending on the heavy metal(s) contaminating a soil, phyto metabolism may be an effective technique for soil remediation.

However, not all metals are equal in their ability to be extracted from soil. Some metals such as nickel can be extracted quite easily, while phytoextraction of other heavy metals such as cadmium and lead can take decades or even centuries.

Switchgrass (*Panicum virgatum*) is a hyperaccumulator of both cadmium and lead. However, it's worth noting that since switchgrass is an herbaceous species, its aboveground biomass will die back each year and redeposit any heavy metals it extracted back onto the soil surface. If switchgrass is used to extract cadmium or lead from the soil, the aboveground biomass will need to be harvested at the end of the growing season and disposed of in such a way that is safe and meets applicable environmental regulatory standards.

We should be mindful of this characteristic of switchgrass when planting it in locations where lead or cadmium contamination in the soil is likely to occur. Sources for cadmium in the environment can include fertilizers, sewage sludge, nickel-cadmium batteries, smelting operations, pigment production and metal plating.

Sources for lead in the environment include batteries, ammunition and industrial facilities. Soils near old gas stations and in ditches along roadways that have been carrying heavy traffic well before the ban on leaded gasoline in 1996 often have elevated levels of lead in the soil. And many older homes built before 1986 still have lead pipes and plumbing fixtures installed, and lead-based paint on the walls. The soils around these old homes are often contaminated with lead.

Copper is a plant micronutrient; however, it can be toxic when concentrations are high. Soil can become contaminated by copper from pesticide residues and smelting operations. But since copper is a plant micronutrient, phytol metabolism using accumulator or hyperaccumulator species can be feasible in situations where the concentration of copper in the soil is not so high that it inhibits the ability of the plants to grow. As it turns out, big bluestem (*Andropogon gerardi*) and little bluestem (*Schizachyrium scoparium*) are both accumulators of copper and can be used to lower copper levels in soils where concentrations are too high for food production.

Phytomining

Phytomining is a technique that uses high-biomass plants that accumulate metals to be reclaimed for reuse. Once the accumulator or hyperaccumulator species have had sufficient time to extract heavy metals from the soil, the plants are then harvested and burned into ash. This ash is then smelted to produce a metal. This exciting new field of research offers a potential alternative to existing, environmentally destructive, opencast mining practices, and holds potential for the extraction of ore bodies that are currently uneconomical to mine by conventional methods. With existing technology, research indicates that phytomining nickel shows great promise as an economical technique for reclaiming this metal because of the ease with which nickel can be extracted from soil. Perhaps with more research, other metals will become more economical to phytomine as well.

Conclusion

Improving soil quality, especially topsoil with heavy metal contamination, is yet another application of phytoremediation in which native plants can help improve environmental quality. By employing phytoextraction techniques, many types of heavy metals can be removed from the soil to reduce ecological harm and prevent adverse health effects to humans and wildlife.

The emerging science of phytomining provides hope that perhaps we'll soon see a day when remediating soil contaminated with heavy metals has evolved into an economically viable industry. Perhaps soon we'll see a day when certain Superfund sites are seen as a lucrative opportunity to restore the environment.

Wild Ones National Board member Eric Fuselier is an environmental scientist at Olsson, where he conducts environmental impact studies and works with civil engineers and landscape architects to minimize the environmental impact from the infrastructure projects they design. Fuselier chartered the Wild Ones Ozark Chapter in 2020, and currently serves as chapter president.

The sculpture "Phases", by Melanie Serkes, is mimicked by this monarch joined by a native bee enjoying the field thistle in the meadow.

The Bower: A native garden and sculpture park

Bill and Jane Allis have always been nature lovers. That's why they originally chose their 36-acre property in rural, bucolic Perry County, Pennsylvania back in 1976. With a 6-acre meadow surrounded by mature hardwood forest, the property was the perfect place for them to build a house and raise a family.

"Back then," Jane says, "we mostly focused on growing vegetables and tending chickens, geese, goats and sheep. Everything was done organically, as it still is today."

In 2002, they ventured into city living for a brief spell when the children were grown, but the land called them back home at retirement.

For most people, retirement means time for well-earned relaxation. But Bill and Jane instead threw themselves into a novel adventure creating The Bower, a native garden and sculpture park in Shermans Dale, Pennsylvania.

"It started with wanting a few sculptures for our meadow," Bill says, "and quickly morphed into wanting to share our love of nature and art with school kids, and then why not open to the public?"

Bill knew the value of consultants, having spent a career consulting as an environmental engineer, and so they enlisted the help of the landscape architect firm of Oehme Van Sweden to create a master plan for their property. This process helped them address the issue of having a public space at a private residence, with pathways designed to lead visitors across the property while protecting their privacy. It also helped them focus on what they wanted to emphasize, including highlighting the Ridge and Valley Region of the Appalachians where the property is situated.

"We learned so much through this process," says Bill. "Visiting other sites to get ideas, and learning about the geology and history of the region all enriched our plans for The Bower. We were excited to share what we learned."

This bronze sculpture, "Heron," by Hungarian artist Bertalan Andrasfalvy, is situated among the rainwater pools and wetland plantings.

As they finalized the plan, the Allises became more intent on celebrating native plants and creating a habitat for insects, birds and other native creatures.

"We went to a conference put on by New Directions in American Landscape (NDAL) with Larry Weaner Landscape Associates (LWLA)," says Jane. "We knew right away that they were the perfect group to translate the ideas of the master plan into a truly native landscape throughout the property." (Coincidentally, Weaner is a Wild Ones honorary director.)

In late fall 2020, just after the 10 carefully selected sculptures commissioned by the Allises were situated, 8,000 native trees, shrubs, forbs and grasses went into the ground.

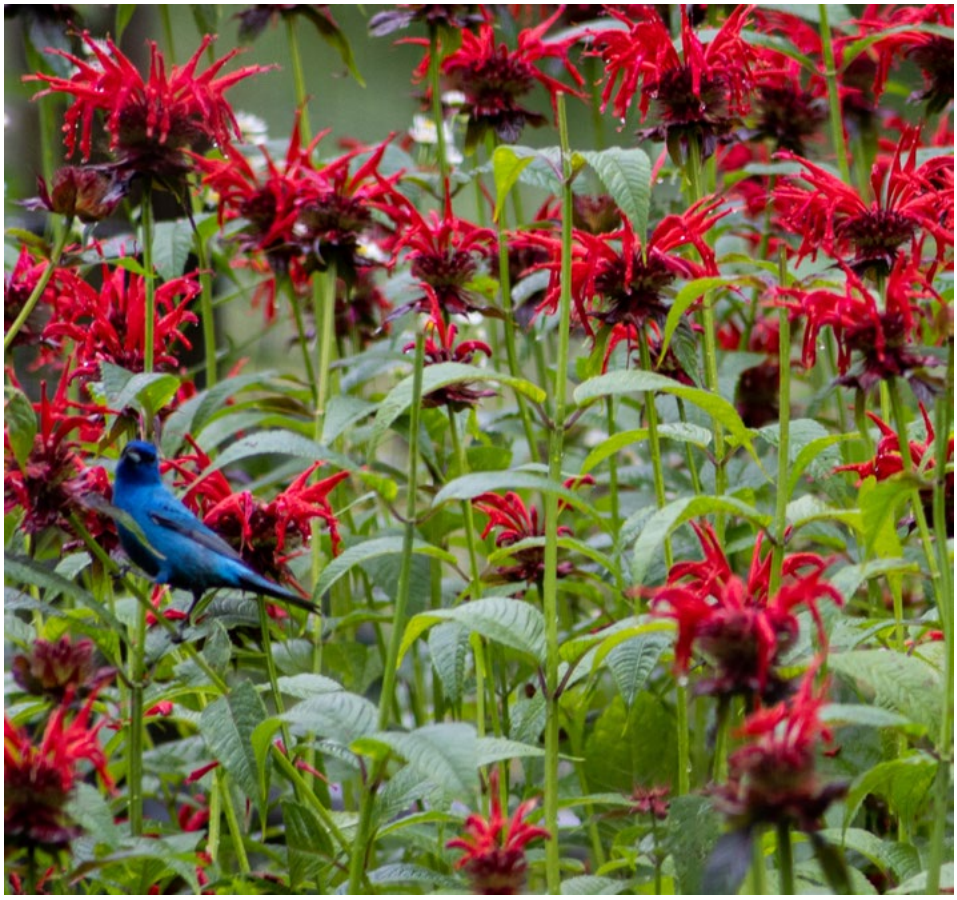
A sinuous dry stacked-stone wall by artist Thea Alvin forms the anchor for the public space and is embraced on both sides by native plant gardens for both sun and shade. The gardens continue along the side of a small lawn area for events and lead one to the pathway through the meadow. The gardens feature a variety of "communities" of native plants that are compatible and suit the site. Golden groundsel (*Packera aurea*), pussytoes (*Antennaria plantiginifolia*), blue false indigo (*Baptisia australis*), slender mountain mint (*Pycnanthemum tenuifolium*), wild bergamot (*Monarda fistulosa*), hairy alumroot (*Heurchera villosa*), purple coneflower (*Echinacea purpurea*), Rudbeckias (*Rudbeckia maxima* and *R. fulgida*), Culver's root (*Veronicastrum virginicum*), asters (*Aster oblongifolius* and *A. macrophyllus*) and grasses, such as little bluestem (S*chizachyrium scoparium*), big bluestem (*Andropogon gerardii*) and prairie dropseed (*Sporobolus heterolepis*), are just some of the mainstays in various seasons.

The Allises had maintained the meadow in a way that allowed native grasses like little bluestem and purpletop (*Tridens flavus*), as well as forbs such as a wealth of butterfly weed (*Asclepias tuberosa*), native field thistle (*Cirsium discolor*) and various goldenrods (*Solidago* spp.) to flourish. A sunny and dry meadow golden groundsel variety was even discovered to be growing, sparking the excitement of Ethan Dropkin, plant specialist at LWLA, as it seems to be an unusual hybrid.

They decided to simply embellish the existing meadow with drifts of added forbs and grasses, such as blue false indigo, sundrops (*Oenothera fruticosa*), blazing stars (*Liatris aspera* and *L. pycnostachya*), mountain mints (*Pycnanthemum* spp.), big bluestem and rattlesnake master (*Eryngium yuccifolium*). Where ground was bare or disturbed, LWLA specified a seed mix that was planted in the fall.

"In one area of the meadow, we added a matrix of plants last fall

A dry stack sinuous stone wall titled "The Kiss," by Artist Thea Alvin, amidst the native gardens welcomes visitors to The Bower. Sculptures by Dina Wind are nestled into the wall curves and a kinetic sculpture by Jeff Kahn is in the background.



Creating habitat through plantings of trees, shrubs, forbs and grasses has brought in many new non-human visitors to The Bower, including this indigo bunting.

to hasten the process along toward more native species," Bill says. "We were delighted to see foxglove beardtongue (*Penstemon digitalis*) and Ohio spiderwort (*Tradescantia ohiensis*) dotting this area early this summer."

Jane says: "In many of the places we've visited, either the landscape or the sculpture is the focus. We wanted to have them enhance each other and have equal sway."

Each sculpture is carefully sited into the landscape. Some of the artists have created pieces, such as "Pollen" and "Mariposa," which highlight the focus on nature. One monumental piece, "Ridge & Valley" by Rebecca Rutstein, is a 9-foot by 67-foot Corten wall, with cutouts representing the ecoregions of Pennsylvania.

With no natural water on the property, Bill created a series of wetland pools that collect rainwater during storms and host frogs, toads and dragonflies, as well as attract and provide water for bats and other wildlife. The pools are planted with wetland plants and a special wetland seed mix. Forbs such as queen of the prairie (*Filipendula rubra*), swamp milkweed (*Asclepias incarnata*), cardinal flower (*Lobelia cardinalis*), Joe Pye weed (*Eupatorium fistulosum*), and a variety of sedges, rushes and ferns adorn the banks. An abstract sculpture called "Heron" finds a natural home here.

Like most plant lovers, the Allises didn't rest on their original plantings and have added a huge mixed shrub drift to help combat invasive stiltgrass and provide shrub habitat for birds. They planted additional woodland plantings last spring. The Allises have also created their own land art pieces, including a stumpery along the woodland trail, which shelters 10 types of native ferns and a few native azaleas. Creative use of cleared branches and vines create walkway guides and sculptural mounds.

The Allises opened The Bower in May of 2021.

"We got great local press, and we were booked until closing in October within weeks that first season," says Bill. Located close to the state capital Harrisburg and surrounding communities, and only a few hours from Philadelphia, Baltimore and Washington, The Bower has drawn visitors from a wide area.

"Visitors make an appointment on the website and have the place to themselves during their appointed time," says Jane. "Visits are free and family friendly. We have educational materials available for visitors on na-

The huge steel panel by Artist Rebecca Rutstein, "Ridge and Valley," celebrates the region of the Appalachians where The Bower is located and creates a backdrop for a meadow filled with butterfly weed and rudbeckias.

Mid-summer is peak time for the native flower gardens at The Bower. The backdrop of mature trees and shrubs frames the gardens here.

tive plants and the artists, including Wild Ones brochures."

Jane and Bill say they try to greet all visitors and have delighted in meeting so many like-minded native plant enthusiasts.

Over the winter of 2021-22, the Allises enjoyed many webinars to learn more about native plants, bees, wasps and butterflies. One webinar focused on Wild Ones' mission. Jane notes that "a light bulb went off that it seemed like the perfect extension of our own goal of encouraging others to plant natives to start a Wild Ones chapter."

They launched the South Central Pennsylvania chapter last spring, serving 11 counties in their area, and now have more than 60 members.

"We've met some amazing people, from beginners, to long-time native plant enthusiasts," says Jane. "We all share our knowledge, our successes, mistakes, tips, our plants and seeds. We've connected with Master Gardeners, bird lovers, hikers and others who want to learn more. It's been a great experience so far."

Their second year of being open to the public brought additional adventures at The Bower. Several bus tours arrived early in the summer. Larry Weaner's NDAL held an all-day landscapers' workshop in July, with Bill and Jane helping to host and discuss how their landscape has evolved. A children's sculpture workshop and a foraging workshop were also in the mix, and a micro wedding was held in September. Planning for next summer's workshops is already underway.

While Bill and Jane are tired at the end of each day, whether they've been busy hosting visitors, weeding, spraying deer repellent, dealing with invasives or tending to pathways and trails, they know they are incredibly lucky.

"We are living a dream and meeting so many committed people who share our interest in supporting the natural world," Jane says. "And at the end of the day, we get to sit back and enjoy this enchanted landscape and the beauty of all these amazing native plants and pollinators hard at work. If you are ever in the area, please schedule a visit!"

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Each year, we seem to shatter the previous year's records, and 2022 was no exception. Temperature extremes increased, as did flood events and prolonged droughts. How do we protect our gardens and plan for an uncertain future? Follow best practices:

Understand your land. Start with what you have, not what you wish you had. Is your soil rich, or poor, acidic or alkaline, well drained or water retentive? Are you planting in full or part-sun, shade or part-shade? Learn about what grows in your ecoregion.

Eryngium yuccifolium (rattlesnake master)

Maximize the use of available water. Create berms and swales to keep water from running off and to minimize erosion. Redirect downspouts into rain barrels or into rain gardens designed with plants that are adapted to both periods of drought and inundation.

Right plant, right place. This cannot be stressed enough. Choose plants that are adapted to your growing conditions, instead of amending those conditions to suit the plants.

Diversity and repetition. By diversifying the number of species in your garden, and growing those species in larger numbers, you increase their chances of survival in the face of adversity.

Plant densely and in layers. Nature abhors a vacuum. Reduce space between plants and create a ground layer of living "green mulch" to lessen weed pressure and water evaporation.

Making smart choices with best practices will help your garden become more resilient in the face of the uncertainty ahead.

Izel Native Plants
Every Plant Counts, Grow Natives.

Research shows climate change negatively impacts prairies

By Mackenzie Seymour

Native prairies are herbaceous-dominated ecosystems that are essential to carbon storage and biodiversity conservation, creating important habitats for local wildlife and rich soil that serves as a natural water filtration system. Prairies are also important for cultural purposes as many species are used as food and clothing sources for indigenous peoples. Unfortunately, the historical extent of prairies in North America has been greatly decreased due to agriculture and urban expansion, and the remaining prairies are under constant threat.

At the same time, winter temperatures are becoming more unpredictable and variable throughout the U.S., resulting in fluctuating warm and cold extreme events. In general, winter is a stressful time for native prairie plants, as water inside the plants can freeze and damage cells and tissues. Therefore, these plants have adapted by developing methods of cold tolerance.

Additionally, under typical winter weather conditions, a layer of snow acts as an insulator for the plants beneath; but warmer winters result in less snowfall. Therefore, native prairie plants' tissues and seeds could undergo damage from experiencing colder temperatures than they typically are used to. Overall, warmer winter temperatures may not provide a sufficient insulating layer of snow for some overwintering plant species, so knowing the cold tolerance of different plant species can help us understand which species may be more likely to disappear with an increase in winter temperature swings.

For the 2021-2022 school year at the University of Wisconsin Oshkosh, I assisted on a research project in the lab of Assistant Biology Professor Laura Ladwig that investigated the ecological impact of winter climate change on seed germination in native prairie plant species in Wisconsin. The goal was to measure cold tolerance of different prairie species to discover whether or not seed dormancy strategies at this critical stage in plant life could help predict which native species may benefit or be damaged from cold temperatures.


Photo: Barbara A. Schmitz

Climate change is a stressful time for native prairie plants. A recent UW Oshkosh research project indicates that many native prairie plants can survive moderate temperatures, but not the extreme temperatures climate change may bring.

Our research focused on using 12 common native prairie species, including great blue lobelia (*Lobelia siphilitica*), Illinois tick trefoil (*Desmodium illinoense*), grass-leaved goldenrod (*Euthamia graminifolia*), prairie sundrops (*Oenothera pilosella*), Virginia mountain mint (*Pycnanthemum virginianum*), heart-leaf golden Alexanders (*Zizia aptera*), prairie alumroot (*Heuchera richard-*

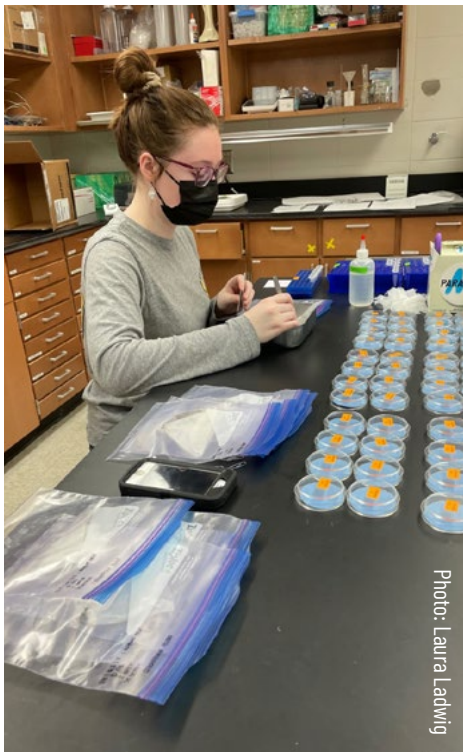


Photo: Laura Ladwig

Mackenzie Seymour works in a biology lab on her research of native prairie plants.

Above, left: Great blue lobelia, *Lobelia siphilitica*; Right: False sunflower, *Heliopsis helianthoides*.

sonii), common milkweed (*Asclepias syriaca*), harebell (*Campanula rotundifolia*), pale corydalis (*Corydalis sempervirens*), false sunflower (*Heliopsis helianthoides*), and heartleaf four o'clock (*Mirabilis nyctaginea*).

Our main research questions included investigating whether cold tolerance varies among the species and if cold tolerance is associated with germination requirements. Another interesting question posed is whether cold stratification, or the required time of cold temperature exposure needed to stimulate germination, affects the level of cold tolerance of each species.

We exposed sets of each species' seeds to four temperatures ranging from 26 to -26 degrees Celsius, and monitored germination success in the lab for two weeks. In order to gain reliable data, we set up six trials for each species.

Overall, cold tolerance varied among the different species. The coldest temperature was most detrimental for seed germination, and several species failed to germinate at all under this condition. This is important to note as the effects of climate change progress and temperatures become more variable in the winter time. The data suggests that many native prairie plants can survive moderate cold temperatures, but not the extreme temperatures climate change may bring. It is also important to note that some species had difficulty germinating under normal conditions, and careful consideration is needed to determine which prairie species to use in future research.

There was no clear link between cold stratification requirements and cold tolerance, as species with various cold stratification requirements experienced the same pattern of germination levels. Therefore, cold stratification cannot be used as a prediction factor for understanding the cold tolerance of these types of plants. Additional research is needed to find a more easily measurable indicator that predicts cold tolerance levels.

Future research projects could include measuring the cold tolerance of later stages of life, such as older plants and overwintering tissues, to get a better understanding of the cold tolerance level in mature plants. Some important long-run applications could include future research on strategic methods on how to maintain biodiversity of prairies within Wisconsin.

Overall, this research project highlights the importance of studying the cold tolerance level of native prairie species as climate change progresses. These are the beginning steps in knowing and understanding the impact that winter climate change can have on native prairies so that scientists and researchers can be better prepared to come up with solutions to preserving these essential habitats within our ecosystem.

Mackenzie Seymour graduated in May 2022 from UW Oshkosh with a bachelor's degree in biomedical science. She currently is the experiential learning and marketing coordinator at Burpee Museum of Natural History in Rockford, Illinois.

Wild Ones announces newly elected Board of Directors

By Katie Huebner

Wild Ones is proud to announce the results of our recent board of director's election: all seven of the candidates received over 51% of votes cast by members and will be seated on the board for 4-year terms starting on Jan. 1, 2023. Current board member, Pam Todd, was re-elected and the remaining six candidates will be new additions to our board.

Read more about our newly elected board members below. All these individuals bring a passion for our mission, a wealth of valuable experiences and a variety of knowledge that will help move the critical work of our organization forward.

Thank you for taking part in our recent election and for your continued support of Wild Ones.

Carl Bahneman

Carl recently retired from 30+ years in the financial services industry and received his master's certificate in nonprofit administration. Carl learned everything he knows about plants, flowers and trees from his wife, Sue, who is a Master Gardener. This year was the first time they had beehives in the prairie, and they are looking forward to some good honey.

What inspired you to become involved with Wild Ones?

When my wife and I bought our current home, we intended to downsize, but we were immediately excited about the half-acre prairie. The sellers had nurtured the prairie and had been involved in their local Wild Ones chapter. We felt obligated to carry on the legacy that they had started. We still send the previous owners pictures every season and ask questions about things we find on the prairie. The previous owners even wrote a poem about the joy the prairie had provided them and had a copy framed for my wife and I to be a constant reminder about how the prairie brought us all together and provided years of joy.

What is your vision for Wild Ones' future?

I am excited to help Wild Ones continue to grow and spread knowledge and raise awareness of the beauty, joy and benefits that native plants can bring to our world.

Favorite native plant

My wife and I both love our three Kentucky coffeetrees (*Gymnocladus dioicus*) in the prairie. They are beautiful and from talking to the previous owners, they are not easy to grow even though they are native to the Midwest.

Ken Foster

Ken is a professor at Concordia College in northwestern Minnesota, where he teaches courses in environmental studies and political science. He also serves as director of community engagement and chairs the President's Sustainability Council. For 12 years, Ken has led sustainability work at Concordia, including the development of the college's first-ever Climate Action Plan.

He has also successfully secured two major sustainability-focused external grants, the most recent of which supports the Resilient Moorhead initiative. Resilient Moorhead, which he co-founded in 2019, brings together stakeholders to promote collaborative efforts to increase community resilience in the city of Moorhead. One focus of this group has been to promote the planting of native pollinator gardens across the city.

"This is a special passion of mine – I've turned parts of my yard into native plant gardens, planted a demonstration garden on city property, and led numerous teams of my students in advocating for eco-friendly landscaping," Ken said. "I'm originally from Rhode Island and have lived in four states and four countries, including years living in Taiwan and China, which sparked a deep interest in facilitating cross-cultural understanding and working for equity. I love exploring the diversity of nature and human communities, and I really love birds!"

What inspired you to become involved in Wild Ones?

I love seeing, experiencing and creating gardens that provide the things that insects and birds need to thrive. And these gardens make life better for humans, too.

What is your vision for Wild Ones' future?

Wild Ones is the premier organization promoting native landscaping and I'm looking forward to continuing to spread the joy of native landscaping throughout communities, while also attracting more members of the younger generations and people from diverse backgrounds.

Favorite native plant

Showy goldenrod (*Solidago speciosa*)

Lisa McNeil
With an undergraduate degree in accounting and graduate degree in organizational development, Lisa has been a business consultant for more than 30 years. She helps small businesses and nonprofits identify areas restricting growth and shift into their goals for the future.

Lisa is also a wife, mom and grandmother who uses her love of the outdoors to recharge, inspire and educate. As a child, Lisa's own grandmother had her wandering the outdoors, instilling in her the need for preservation, conservation and stewardship. She was recognized in Arizona as a Master Gardener before moving to Wisconsin in 2002, where she fell in love with the beauty of the Midwest. Lisa and her husband Tom have been working the last 5 years to convert their property back to area natives. They have now taken on the role of inspiring their grandchildren to preserve, conserve and love cultivation.

What inspired you to become involved with Wild Ones ?
When Tom and I decided to transform our property back to only natives and non-invasive plants, we needed help, we needed education, we needed a community of like-minded individuals…we found Wild Ones. My love of the organization's mission and the heart of the leadership drew me to contribute my education and talents to further the mission.

What is your vision for Wild Ones future?
I would like to see Wild Ones create mutually beneficial collaborations to bring awareness and change on a municipal level.

Favorite native plant
Anise hyssop (*Agastache foeniculum*). Not only is it beautiful, but it is also fragrant. Crushing the leaves, the flowers, separating/moving plants, the accidental underfoot … you immediately know you encountered the beautiful anise hyssop.

Carolyn Miller
Carolyn received her bachelor's degree in botany and plant pathology from Michigan State University. She is currently working on her master's degree in biology at Miami University (Ohio), where her focus is developing innovative ways to inspire urban residents to landscape with native plants to help support native pollinators.

She also currently serves as the plant recorder for Michigan State University, spending much of her time mapping and recording data for all the trees and shrubs across more than 5,000 acres of campus. Prior to this position, she was curator of plant collections at the Naples Botanical Garden (Naples, Florida), where she was involved in procuring plant material for a major garden expansion.

After returning to her hometown of Grand Rapids, Michigan, she became involved with the Wild Ones River City – Grand Rapids Chapter. During this time, her quest to learn more about and promote native plants took flight. Upon relocating to Lansing, Michigan, she became the program coordinator for the Wild Ones Red Cedar Chapter and currently coordinates the chapter's native plant sales.

In addition, she is president of the Wildflower Association of Michigan and the recording secretary for the Michigan Botanical Society. When she's not botanizing or transforming unproductive lawns into productive pollinator habitat, she can be found spearheading efforts to remove invasive plants from local habitats.

What inspired you to become involved with Wild Ones?
After living in Florida for eight years, I returned to my home state of Michigan and wanted to connect with organizations focused on ecology and the environment. I enrolled in the Michigan Master Naturalist program and learned about Wild Ones. I immediately signed up, started attending meetings and never looked back. I was thrilled to be involved with an organization that informed and encouraged people to use native plants and protect the unique habitats we have.

What is your vision for Wild Ones' future?
To continually promote the appreciation, diversity and importance of native plants. It is through education that we can all create and preserve native landscapes.

Dave Neu
Dave has a bachelor's degree in wildlife management, biology and resource management from the University of Wisconsin-Stevens Point, as well as additional credits in education from the University of Wisconsin-Green Bay. He received a certificate in landscape design from the College of Lake County and is a Master Gardener.

Dave has worked in natural resources throughout the Midwest for more than 35 years in government, nonprofits and businesses. He currently owns NatureSpace, a native landscape consulting business, and has an Illinois real estate broker license specializing in rural properties. Since 2015, Dave has been a member of the Sustain Libertyville Commission for Libertyville, Illinois. In addition, he is the sustainability coordinator for the Village of Grayslake, Illinois.

Growing up, Dave spent summers at the family's property in northern Wisconsin. "My grandfa-

ther, parents and other family members instilled in me an interest and respect for nature," he said. "This led to my long and varied career in natural resource management. Everywhere I've lived, I've utilized native plants in the home landscape. On a larger scale, I've planned, restored and managed tens of thousands of acres of native habitats on public and private lands."

He also has expertise in partnerships and program management.

What inspired you to become involved with Wild Ones?
I wanted to be able to have a wider influence and impact through spreading the message of the value of native plants in the landscape. Wild Ones is the "go-to" organization dedicated to native landscapes, and it seemed like a natural fit for me.

What is your vision for Wild Ones' future?
It's inspiring to see the membership grow every day and new chapters forming. We need to build upon this strong base of individuals and expand to corporate campuses and other larger properties. I'd like to work on increasing corporate-level sponsorships and project funding.

Favorite native plant
In the spring, I am always excited by the appearance of Virginia bluebells (*Mertensia virginica*), followed by wild geranium (*Geranium maculatum*). One that always makes me smile is purple poppy mallow (*Callirhoe involucrata*). I could go on and on!

Leah Pollack
Leah is a partner in McKinsey & Company's Public and Social Sector practice in the Washington, D.C. office. Since joining McKinsey, she has worked with a diverse set of clients on a range of topics from strategic planning to change management. She received a joint MBA/MPP degree from Wharton and the Harvard Kennedy School and her bachelor's degree from Stanford. One of her career highlights was having the opportunity to be a Fulbright Fellow in Thailand.

What inspired you to become involved with Wild Ones?
I am a passionate "plant mom" and novice gardener. After recently taking my first landscape design course, I discovered the native plant movement and have since read Doug Tallamy's book "Nature's Best Hope," participated in webinars on local native plants, and consulted with friends and neighbors on native plant selection. I'm inspired by Wild Ones' mission and love the member-based model that is connecting people across the U.S. in their local communities and on local native plants. And I just love the name "Wild Ones."

What is your vision for Wild Ones' future?
I envision a future where Wild Ones has chapters in all 50 states (plus the District of Columbia and U.S. territories), grown and diversified its membership base, established partnerships with key organizations, clarified the relationship between national and chapters, identified new sources of revenue, and increased digital and social media engagement. In this future, Wild Ones will be more effective at delivering on its mission: to promote environmentally sound landscaping practices to preserve biodiversity.

Favorite native plant
Oakleaf hydrangea (*Hydrangea quercifolia*)

Pamela Todd
Pamela Todd is the co-founder of the Wild Ones West Cook (Illinois) Chapter. She is the author of "The Blind Faith Hotel" (Simon and Schuster, 2008), a novel about a young girl who is sentenced to community service at a prairie preserve. Her book was a co-winner of the 2009 National Green Earth Book Award for Young Adult Fiction, an ALAN pick for December 2008, and was awarded an Illinois Arts Council grant. She works as an educational strategist for Global Genes, an umbrella nonprofit for rare disease advocacy groups.

Pam and her husband, Donn, live in Michigan where they are restoring the 80-acre farm that has been in their family for 140 years. They have a son, three daughters and three grandchildren.

What inspired you to become involved with Wild Ones?
The hope of saving all that we love.

What is your vision for Wild Ones' future?
Wild Ones will continue experiencing strong growth geographically and at the membership level as they spread the message that we can all impact biodiversity and sustainability in our own landscapes.

Favorite native plant
Pawpaw (*Asimina triloba*)

Illinois's Prairie State designation has long history

Weston Cemetery Nature Preserve in McLean County is a remnant of unplowed original prairie. More than 70 species of forbs and nine grasses have been recorded and bloom sequentially from March to November on this 4-acre site.

By Roger and M. Rebecca Anderson

Why is Illinois called the Prairie State?

If you heard this question, what would you think it means? You would probably wonder which way the question was meant. First, why did people call the area "prairie" and later the "Prairie State"? Secondly, how did the landscape become prairie?

To answer the first question, historians tell us that the first Europeans to visit and later colonize the Midwest were French explorers, traders and missionaries. "Prairie" is a French word meaning "meadow" or "field." Non-indigenous people who traveled to the land between what we now call Lake Michigan and the Mississippi River were French traders seeking to buy animal pelts from the people they encountered. They would have recognized grasslands and meadows, but never would have seen such great treeless expanses.

Explorer Louis Joilet wrote, "No better soil can be found, either for corn, for vines or for any fruit, whatever." It appeared to be easily settled, because one would not have to spend years removing trees and stumps in order to plant crops (Howard 1972).

The second question is of greater interest to ecologists and nature enthusiasts. North American prairies are the result of glacial history, landscape, climate, fire, and animal and human activities.

In 1950, Carl O. Sauer, a geography professor at the University of California, Berkeley, published "Grassland Climax, Fire and Man" in which he laid out the basic understanding of grassland ecosystem formation. Grasslands, including the prairies of North America, occur on level to gently rolling landscapes, often residuals of glacial activity. These landscapes allow fires to burn extensively if they become dry. Vegetation of grasslands is mostly annually produced finely dissected leaves and stems of grasses, other grass-like plants such as sedges and reeds, and annually produced stems of flowering plants known as forbs, like mints, goldenrods, asters and sunflowers. This above-ground vegetation dies annually during the dry season, autumn and winter, and once ignited, burns quickly and easily.

Dry seasons are the result of climate patterns. In North America, three major air masses control climate of the grasslands: Polar, Pacific and Gulf air masses. Polar air masses bring cold, dry winds from the north, an "Alberta Clipper." The Pacific air mass brings moist air from the Pacific Ocean to the west coast of North

Letcher Basin is a reconstructed prairie along the Mackinaw River owned by ParkLands Foundation. About 45 plant species have been established from seed on 125 acres. Reconstructions are less diverse than original prairie remnants.

America, passes over three mountain ranges (Coastal, Sierra and the Rocky Mountains), dropping moisture over each, to become dry by the time it passes the Front Range of the Rockies. Pacific air masses blow from west to east, dropping little moisture on the land east of the mountains on North America's short-grass prairies. By the time weather fronts reach the Midwest and Illinois, additional moisture has been added to the mix since winds also blow from south to north from the Gulf of Mexico. Illinoisans know to expect rain after the tropical storm fronts travel up the Mississippi River Valley. The Gulf air mass adds moisture to the remnants of the Pacific air-mass. The farther east from the Front Range of the Rockies, the greater the annual rainfall.

Where more rain falls, the prairie plants, especially the grasses, grow taller and more robust. As a result of the climate variation from west to east, the grasslands of North America were labeled by ecologists as short grass prairie, mid-grass prairie and tall grass prairie. Illinois was largely dominated by tall grass prairie, with grasses reaching 6-8 feet tall, that over 7,000 – 10,000 years formed the famous deep black topsoil that doomed its existence, and was eventually replaced by corn and soybean agriculture.

A large area of central and northern Illinois, the Grand Prairie region, is very flat, scraped by the most recent glacier, the Wisconsin glacial period, that ended about 10,000 years ago. Where did the prairie species come from? Researchers are pursuing this question.

Areas near the front of the glacier may have harbored species that migrated to newly exposed land. Regions of the continent that were unglaciated probably contributed species to the mix. The glaciated landscape was extremely fertile with a mix of pulverized limestone and windblown loess, or fine soil particles blown from the retreating glacier. After the receding glaciers left, a succession of landscapes followed as the climate alternated between warm and cool, wet and dry. The prairie resulted from the trend to a warmer, drier climate. Within the prairie region, higher moraines were left by the glaciers' annual move forward and retreat. Moraines and river and stream channels provide protection and variation of the landscape today, and have supported forests and savannahs, because of the protection from fire.

So far we have attributed the prairie with flat to gently rolling land, a dry season, and finely dissected vegetation that dries annually. What

A controlled burn on a restored prairie leaves a black surface and some unburned residue. Most of the smoke particles come down with the next rain.

else is needed to make a prairie? The answer is fire and grazing animals.

Fires were historically started by lightning, but the presence of humans was likely the predominant source of fire ignition. In the eastern part of the tallgrass prairie, lightning storms also produce rain that extinguish fires. The climate east of the Mississippi River produces enough annual rainfall to support forest vegetation. Only the nearly annual fires prevented trees from taking over the prairie. In trees, actively growing cells — cambium — are under the bark and in the root crown, above ground, exposed to the killing effects of fire. The annual growth of grasses and forbs on the prairie die after summer, leaving protected growing tips and buds below the soil surface. Even a few centimeters of soil is enough insulation to protect buds from the heat of fast moving prairie fires.

After a fire, the dark, ash-covered soil surface absorbs more heat from the sun than unburned dried vegetation. Warmer soil makes plants regrow faster. Minerals that were tied up in dried vegetation are released to be recycled in new growth. Trees have been top-killed and the prairie is healthier after fires. Freshly greened vegetation attracts grazing animals, including the premier mammal of historic prairies, bison.

Indigenous residents of the prairie set fires to improve preferred grazing areas and attract animals they hoped to hunt. They set fires to kill trees, control insects like flies and mosquitoes, drive game animals, encourage new growth on the prairie, ease travel and protect living areas and crops. But they likely also set fires because prairie fires are beautiful. Without fires, the grasslands are encroached by shrubs and trees that are not suitable habitat for grazing animals. Prairies encroached by woody vegetation have become the most difficult management issue for current stewards of restored remnant and reconstructed prairies.

Grazing animals and grasses probably evolved together. Grasses with silicon in tissues appeared in the fossil record about the same time as mammals appeared with high-crowned teeth suitable to chew the tough grasses. The growing tips of grasses that are protected from fire are also protected from grazers that eat the above-ground leaves and stems. Many species of plants respond to being grazed by growing more quickly and robustly, replacing the lost tissues with more vegetation.

Fight continues to save Bell Bowl Prairie

By Jillian Neece

The fight to save Bell Bowl Prairie is still on, more than one year after the Chicago Rockford International Airport halted construction of its $50 million cargo expansion. The planned construction included a 100,000-square-foot air freight facility, storm water detention basins, ramp expansion as well as a service road, which would run through the Bell Bowl and threaten the prairie and its ecosystem.

The ancient prairie is home to indigenous plants and endangered wildlife, like the rusty-patched bumblebee. According to the Rock River Current, the airport now says it won't go forward until a federal review is complete. However, it's unclear when that process will wrap up.

During the Save Bell Bowl Prairie meeting on Sept. 8, employees with Geosyntec Consultants presented a solution to preserving Bell Bowl Prairie while continuing with the Rockford airport's ongoing expansion plan. Based on the airport's design proposals, Geosyntec engineers are proposing small changes to the airport's design that would meet the needs of the expanding airport, while minimizing impacts to Bell Bowl Prairie.

Their plan would involve combining several of the airport's proposed design alternatives. The report noted that it is possible to shift the proposed cargo building to the west, where there is ample land area to accommodate the 1 million square-foot building. The proposed plan would also route the road around the prairie and reduce the speed limit on this road to meet safety guidelines.

Jillian Neece is the community organizer of the Bell Bowl Prairie and with the Friends of Illinois Nature Preserves.

Research has demonstrated that bison, the keystone species of prairies, prefer to eat grasses and leave most forbs standing uneaten. Prairie restoration is recently focusing on restoring animals such as bison to large prairies. In Illinois, bison can be seen by the public at The Nature Conservancy's Nachusa Grassland, Franklin Grove, and Midewin National Tallgrass Prairie, near Wilmington.

Restoration of prairies helps the myriad invertebrates and vertebrate animals of the prairie as well as the beautiful plants. Application of controlled burns in urban environments is often difficult, but it is frequently used to improve and maintain small prairies. Usually done in the spring, the fires kill woody vegetation and also discourage exotic invasive species that grow earlier than natives. Introduction of herbivores is more difficult, because most remnants are too small.

Historic Illinois was 60% tallgrass prairie, while timbered land, including forests, woodlands and savannas, comprised most of the remaining vegetation. The prairies of pre-settlement Illinois were drastically altered by the influx of Europeans who converted most of the prairie to agricultural and settlers' use. The earliest colonists from eastern Kentucky, Tennessee and western Virginia entered the unglaciated southern portion of the state. This familiar landscape suited mostly hunters and trappers from forested areas. They migrated northward along finger-like traces of forest along the major waterways, initially avoiding larger tracts of prairie. They needed water for livestock, personal use, water wheels, and as a source of power. Timber was needed for fuel and building materials. The large tracts of prairie exposed the settlers to the undesirable force of winter storms.

Ironically, many of the earliest settlers believed that prairie soils were infertile. Familiar with life in the forest, some thought that soils that appeared incapable of supporting trees surely would not be productive for crops. However, rather than being infertile, a characteristic of these grasslands is that about two-thirds of the plant biomass is located beneath the surface of the soil in the form of roots and other underground organs. As belowground and aboveground portions die and decay, they greatly enrich the soil with organic matter. But turning over the thick prairie sod was an almost insurmountable obstacle to early prairie farmers, until 1837 when John Deere, in Grand Detour, Illinois, invented the self-scouring moldboard steel plow.

As counties were settled, one of the first industries to develop was clay tile manufacture for draining the seasonally wet prairies common throughout much of the Grand Prairie region. The combination of drainage tiles and the moldboard steel plow began the conversion of prairie to cropland. However, even though settlers learned of the fertility of the prairie soil and could raise large crops, many of the larger prairies remained unsettled because of the lack of transportation to move crops to distant markets. With the coming of the railroads in the 1850-60s, there was a rapid conversion of the prairies to cropland. During this period, about 3.3% of the prairie was plowed each year and by the late 1800s, most of the prairie was

gone. Documented objections to this dramatic conversion apparently were few.

As the prairies were converted to an agricultural landscape, fires that had swept nearly annually across the prairies in pre-settlement times were actively stopped by the settlers who viewed them as a threat to their economic security. According to Gerhard (1857), "The first efforts to convert prairies into forest land were usually made on the part of the prairie adjoining timber ... three furrows were plowed all around the settlement to stop the burning of the prairies...,whereupon the timber quickly grows up...." An increasing number of plowed fields and roads acted as firebreaks. Cessation of these nearly annual conflagrations served to further the demise of the prairies. Many of them were converted to savanna or forest by invading tree species that were no longer restricted by the periodic fires.

Railroads were established before the landscape was extensively disturbed and the rights-of-way, which usually extended for 100 feet on either side of the track, were fenced to keep out livestock. In addition, the railroad rights-of-way formerly were managed with periodic fire, as well as many accidental fires, limiting the invasion of woody species. In the last 30 or more years, many of the remnant prairies along the railroads have disappeared or become degraded as a result of fire absence, extensive herbicide use, and other disturbances, such as installation of fiber optic cables or vehicle trespass. Furthermore, many of the railroad lines have been abandoned. Frequently, these abandoned rights-of-way, often the only local remnants of native prairie, have been purchased by the adjacent landowner, plowed and converted to cropland. Nevertheless, some prairie persists along railroad rights-of-way, although much of it has been degraded.

Another important refuge for prairie, particularly in the Grand Prairie Natural Division, is in pioneer cemeteries, a fitting resting place for some of the finest examples of prairies remaining in much of the heavily agricultural parts of Illinois. Whether these small remnants of our tallgrass prairie natural heritage can persist in isolation is a subject of ongoing research. Small prairies actually appear to be practically smaller than they physically appear. Marginal areas in pioneer cemetery prairies have higher exotic species numbers, lower native plant diversity, and among the native species, a more ruderal composition.

Big bluestem, or turkey-foot, is one of the dominant grasses on prairies.

Roger and M. Rebecca Anderson are members of the Illinois Prairie Chapter of Wild Ones. Roger is also an emeritus distinguished university professor of ecology.

Read more

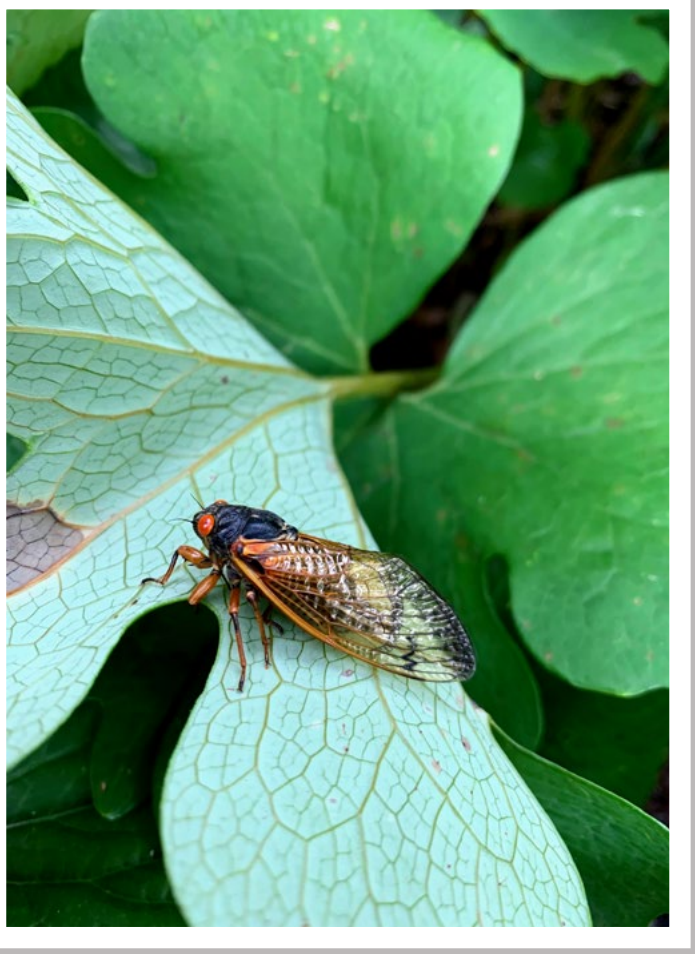
- Prairies in the Prairie State
- Evolution and Origin of the Central Grassland of North America: Climate, Fire and Mammalian Grazers
- Vegetation Ecology and Change in Terrestrial Ecosystems"

Wild Ones Photo Contest Winners 2022

David Silsbee's "Misty Morning" was the Best in Show winner in the 2022 photo contest. Silsbee, of the Mountain Laurel (Connecticut) Chapter, took it as he canoed on a North Wayne, Maine pond early in the morning as the fall colors glowed through the mist. The photo also took first-place honors in the Scenery category.

Wild Ones Photo Contest Winners 2022

Courtney Denning, of the Dayton Area (Ohio) Chapter, took third place in the Fauna with Flora category with "Bloodshot on Bloodroot." She writes: "I spotted this little 17-year cicada on a bloodroot leaf during the emergence in the summer of 2021. I was surprised that our neighborhood did not have the large numbers of near-deafening cicadas that nearby cities had. So I was happy to spot this cicada and two of its friends in our small shade garden."



David Silsbee, of the Mountain Laurel (Connecticut) Chapter, took first place in the Fauna with Flora category with "They're All Mine." He writes: "The cedar tree outside my window provides endless hours of entertainment as the waxwings, bluebirds, sapsuckers and other birds gorge themselves on the berries and squabble over the best branches."

Judith Bechtum, of the Prairie Edge (Minnesota) Chapter, took honorable mention in the "It's Alive" category with "Peekabo." This tree frog was found in a paintbrush cactus in Webster, Minnesota.

Wild Ones Photo Contest Winners 2022

Betty Jenewin, of South Shore (Massachusetts) Chapter, took second place in Flora with "Coneflower." The photo was taken in Worcester, Massachusetts.

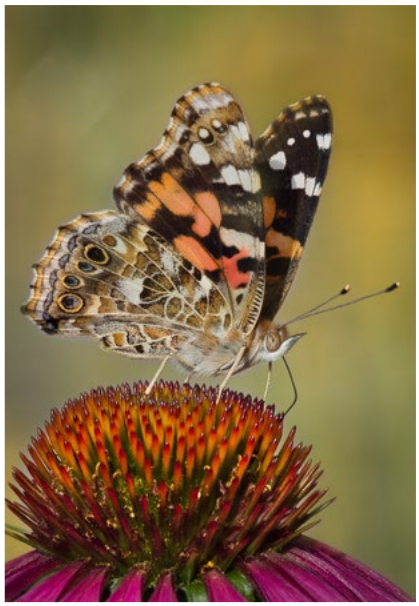
Morgan Meador, of the Ozark (Arkansas) Chapter, took first place in the Flora category with "Ozark Trillium in Full Bloom."

Laura Stellmacher, of the Menomonee River Area (Wisconsin) chapter, took third place in the Flora category with "Frozen in Time." This photo of a willow tree was taken in Hartland, Wisconsin and is also featured on our cover.

Wild Ones Photo Contest Winners 2022

Courtney Denning, of the Dayton Area (Ohio) Chapter, took second place in the Public Landscaping category with "Blue Skies at Lurie Garden." She writes: "I am inspired by Piet Oudolf's naturalistic planting style and his combination of native and nonnative (but non-invasive) plants in his designs. After visiting this garden, I read more about naturalist garden design and focused on planting groups of a single native plant species en masse in my gardens."

Barbara DeGraves' "Redbud blossoms and Tree Swallows" took second place in the Home Landscaping category. DeGraves belongs to the SoKY chapter; the photo was taken in her backyard in Bowling Green, Kentucky.



Diana Kuklinski, of the Arrowhead (Minnesota) Chapter, took second place in the Pollinators category with "Saucy, the Painted Lady." The photo was taken in her backyard in Bemidji, Minnesota; the painted lady is on a purple coneflower (*Echinacea purpurea*).

Wild Ones Photo Contest Winners 2022

Neal Bringe's "Colorado Aspens at the Peak of Fall Colors" earned second place in the Scenery category. Bringe, of the Front Range (Colorado) Chapter, wrote: "I hiked up a rocky mountainside to get this high view just a little while before it started to rain. Everyone that I shared this picture with was amazed at the rich array of colors that the aspens provided throughout the vast landscape. What a gift."

Bette Kauffman, of the Western Gulf Plain Chapter, took first place in the It's Alive category. She writes: "I was riding in a flat-bottom boat with about a dozen other sightseers on a swamp tour. We were weaving between cypress and tupelo trees when the boat turned toward a more open area. Suddenly we were so dazzled by the sun streaming through the Spanish moss that we almost didn't see the 'gator on the log. I shot one frame before it slid into the water."

NEW to NATIVES

Simple tips to plant a pocket prairie

By Cindy Crosby

I've been a Master Gardener for many years. But my gardening experience more than two decades ago was limited to the usual suspects. Tomatoes. Antique roses. Daffodils. I didn't know much about prairies or native plants. After hiking the local preserves in my new home in the Chicago region in the late 1990s, I realized there was a whole suite of plants I wasn't acquainted with. They were part of the "original garden" of my new home state of Illinois — tallgrass prairie grasses and wildflowers. I wanted to know more.

Looking for help, I joined Wild Ones of Greater DuPage, and was introduced to the fascinating world of Illinois native prairie plants. Although our suburban yard was small — less than a quarter of an acre — the idea of planting a small collection of prairie plants, sometimes called a "pocket prairie," was still daunting. How should I prepare the soil? Would I have to burn? What plants should I choose? And in my manicured subdivision, how could I plant a pocket prairie without upsetting my neighbors?

What I discovered is this: It's not difficult to plant one, once you know a few useful tips. Over the past two dozen years, my prairie plantings have given me endless joy. You can plant a pocket prairie, too. It doesn't have to be overwhelming. Take it one plant at a time. Here's how to get started.

All photos courtesy Cindy Crosby

Buying plant plugs instead of planting from seed makes it easier to distinguish between native prairie plants and emerging weeds in your pocket prairie the first season.

Observe

Before you plant, observe. Which parts of your yard receive at least five hours of sunshine? Which portions are in the shade or partial shade? What areas stay wet and where is it bone dry?

Look for unexpected spaces

Where might you site your pocket prairie so it can be enjoyed? Think about some unusual places to plant. What about your entryway? Perhaps there is an unused strip of lawn by your driveway that might become an oblong prairie planting. A fence at the rear of your yard might be the perfect backdrop to a pocket prairie. Or could you place short, well-behaved natives around your patio?

Think about the "hell strip," that piece of lawn between the sidewalk and road that some subdivisions have. Does your township allow gardens there, and if so, is there a maximum plant height? Also consider if you would be able to reach your planting with a hose from your water source? If not, you can do as I did. Buy more hose!

The possibilities for planting pocket prairies are endless. One of

Consider more than just blooms; many prairie natives are beautiful in seed as is this blazing star (*Liatris aspera*). Crosby's pocket prairie in Glen Ellyn, Illinois.

the most striking native plantings in my village is in a cul-de-sac, where a central planting area of dirt in the asphalt hosts a mix of natives and a few nonnatives that provide color and joy to pollinators. Another neighbor who lives on a busy street corner uses the "triangle" space to make a beautiful pollinator planting mix of natives and nonnatives. Both are good uses of often-overlooked spaces.

Plant selection

The most difficult part of planting a pocket prairie may be choosing the plants you want, especially the first year. So many possibilities!

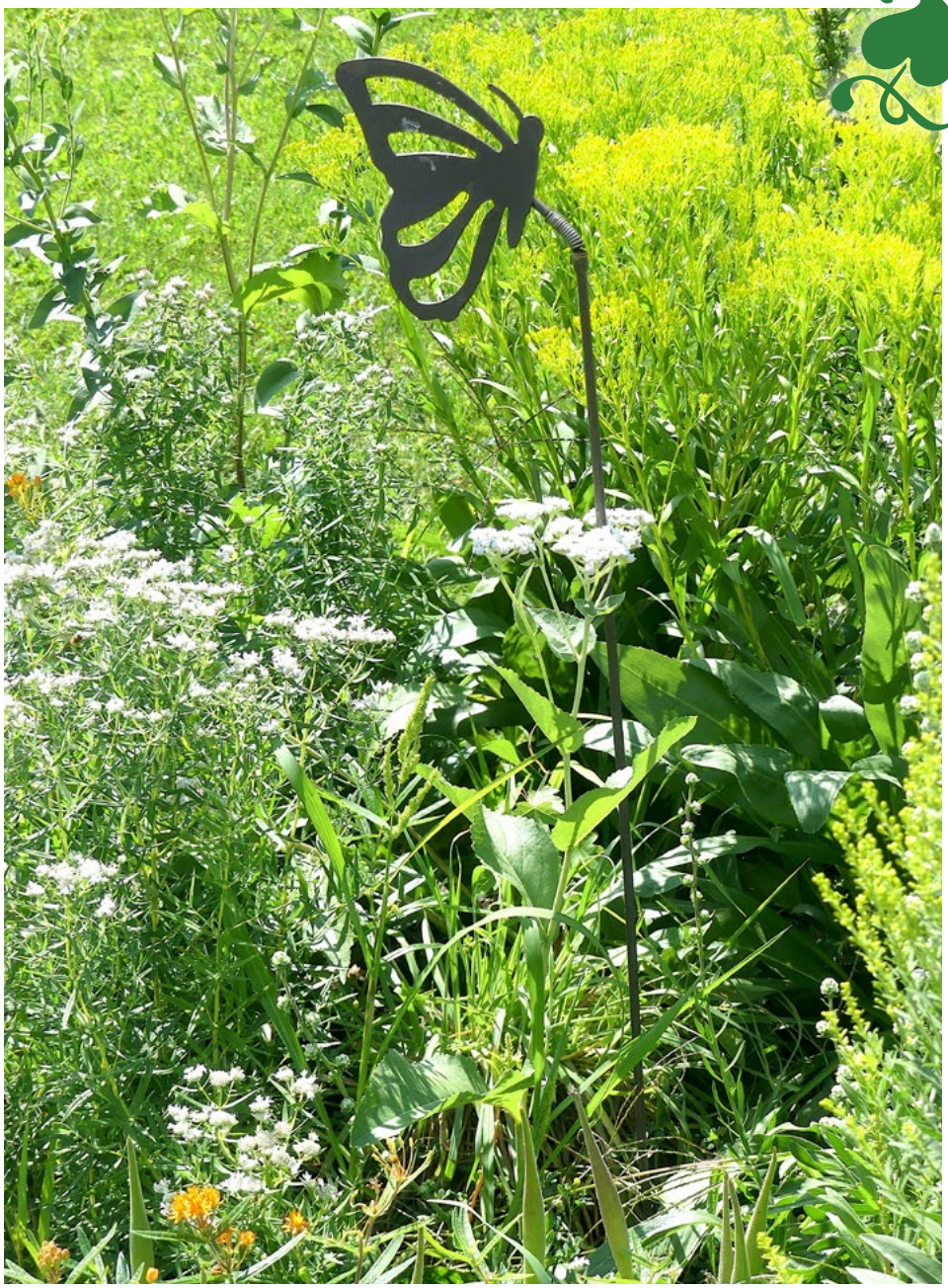
One way to begin is to think about the four seasons. Summer prairie natives are what come to most people's mind when they select plants — butterfly milkweed (*Asclepias tuberosa*), pale purple coneflowers (*Echinacea pallida*), or even larger plants like white wild indigo (*Baptisia alba*). All beautiful choices. But also think about spring prairie wildflowers such as prairie smoke (*Geum triflorum*), golden alexanders (*Zizia aurea*), shooting star (*Dodecatheon meadia*), wood betony (*Pedicularis canadensis*) and the native violets (*Viola* sp.). They offer spring color and something for the early emerging pollinators. Autumn is ripe with possibilities. Plant an array of asters, a few of the well-behaved goldenrods (*Solidago speciosa* is a favorite), and the later blooming blazing stars (*Liatris* sp.), to name a few.

If you think about winter when you plant — and if you don't cut down your natives in the autumn — you'll enjoy the standing seed heads of wild bergamot (*Monarda fistulosa*). The gray-headed coneflower (*Ratibida pinnata*) seeds will scent your hands with lemon as you rub them between your fingers. Wild quinine's (*Parthenium integrifolium*) pewter seeds, almost like small roses, add endless winter interest. Switchgrass (*Panicum virgatum*) holds its seed into winter and captures snow and ice in beautiful patterns. Its leaves look like curled butterscotch ribbons held above the snow. Little bluestem (*Schizachyrium scoparium*) keeps its gorgeous reddish hues long into the colder months. Plan your pocket prairie for four-season interest and color, no matter how small your planting is.

Unlike some traditional garden plants, prairie natives may only bloom for a short time. Consider foliage color, texture, shape and plant structure to be as important as the blooms. Some foliage is colorful in late autumn, and the variety of seeds from different natives will add more interest. A diversity of both bloom and foliage will be pleasing throughout the year.

Preparing the site

How big should your pocket prairie be? It's tempting to put in too large a prairie when you first get started. But even a 3-by-5-foot bed can be a source of endless pleasure, or a few plants along the patio or front entry sidewalk. Consider starting small, then adding and expanding to your plantings each year. A prairie of any size is going to require watering, weeding and nurturing, especially in the early years. You want your planting maintenance to be a pleasure, not a dreaded chore.



A simple sign or even a metal butterfly will help your neighbors appreciate your pocket prairie and understand your intentions.

Unlike vegetable gardening, where you need to do a lot of soil amending it's fairly easy to prepare the ground for a small pocket prairie. I like to use a hose to outline the spot I want to plant in order to see how it will look. The hose will also help you think in curves, which are usually more pleasing to the eye. Then, strip the turf with a sharp-edged shovel. Or, lay down cardboard, weighted with bricks or stone, for about six weeks or over the winter, to kill the grass and make turf removal easier. Most suburban soils are fine for the majority of prairie species. I sometimes buy a bag or two of topsoil to lighten my yard's heavy suburban clay, but it's usually not necessary.

Most importantly, check resources to determine if the plants you are interested in need well-drained, wet or dry soil in sun or partial shade before you buy them. This will help you put the right plants in the best places.

Seeds? Or plants?

It's a tough choice between plants and seeds, and there are advantages and disadvantages to both. If you're a beginner and planting a small pocket prairie, I'd recommend buying plant plugs. It's instant gratification, and much easier to weed and maintain when you can see what you planted, compared to trying to distinguish first-year seedlings grown from seed from emerging weeds. The downside is that plant plugs are more expensive, and first-year plant plugs must be faithfully watered throughout the first growing season in order to survive. And, of course, you have to put them in the ground, which can require considerable labor. Some species are only available as seed, so you may want to start these plant plugs yourself.

Consider buying plugs in threes or fives of a species so you have some "drifts" of color, especially for plants that look best massed, like prairie smoke. Plant your plugs closer than you might think, so the plants can support each other as they do in the wild.

Burning love

Pocket prairies will do just fine without a prescribed burn. Consider mowing or hand cutting dead foliage in the early spring, after the overwintering insects have emerged. If you expand your pocket prairie to a larger prairie planting at some point, check with your local Wild Ones chapter about how to obtain a prescribed burn permit. Use a trained professional or undergo training so you know how to safely do it yourself.

Making friends

Neighbors who don't understand what a prairie is may believe your pocket prairie is a sign of neglect instead of progressive thinking. In my book, "The Tallgrass Prairie: An Introduction," I wrote a chapter "How to Plant a Prairie in Your Yard (Without Upsetting the Neighbors)." It's mostly about making good plant choices and inviting your neighbors to love your planting. The key is engaging people with the prairie by appealing to something they enjoy or recognize as "good" and keeping your pocket prairie well-maintained. So:

This neighbor's cul-de-sac planting blends a diversity of native prairie plants for a beautiful autumn display in Glen Ellyn, Illinois.

• **Start small.** When you put a small prairie planting in your front, side or backyard, the neighbors may hardly notice and you'll be able to keep up with maintenance. Expand it a bit each year and they'll gradually get used to the idea of a pocket prairie, and you'll see how much maintenance you enjoy doing. I began with a pocket prairie in the backyard many years ago, and only recently planted prairie in the front. You can even mix prairie plants with traditional garden plants. Stealthy!

• **Use signage and wildlife symbols.** This might be as simple as a Wild Ones Native Plants sign or a Monarch Waystation sign (assuming you include some milkweed) close to your planting. Most people enjoy birds and butterflies. A metal butterfly garden ornament will help neighbors understand you have a pollinator garden, which is a much easier sell than a prairie. A bird feeder, bird bath or functional or decorative bird house incorporated into your planting will help others understand you are gardening for wildlife.

• **Plant "ambassador" species.** Black-eyed Susans (*Rudbeckia hirta*), pale purple coneflowers, downy phlox (*Phlox pilosa*), prairie coreopsis (*Coreopsis palmata*) and butterfly milkweed are plants people recognize as "beautiful" and are somewhat familiar to them because of their traditional garden cousins. Little bluestem and prairie dropseed (*Sporobolus heterolepis*) are fairly well-behaved, lower profile plants that pave the way for interested neighbors to see a prairie as something that adds to the value of the property rather than a "weedy mess" as some of the larger plants situated in a front yard may be perceived. Taller bloomers with rampant growth that lean or look weedy to untrained eyes (I'm looking at you, cup plant (*Silphium perfoliatum*)) may get you in trouble, although they can be rewarding show-stoppers if integrated well. Good first impressions are likely to be made by plants with colorful flowers or ornamental aspects.

• **Beauty with a border.** When a pocket prairie has a clearly delineated edge (rocks, bricks, garden edging, mowed lawn) your neighbors will see it as a garden that is cared for. They won't worry so much about your yard and think, "There goes the neighborhood!"

• **Bouquets.** Take bouquets of prairie wildflowers and grasses as gifts to your neighbors. I fill recycled jars wrapped in colorful tissue paper, tied with twine or ribbon, to good effect. Many prairie wildflowers and grasses look excellent in bouquets (think of rattlesnake master (*Eryngium yuccifolium*), asters and prairie dropseed seed sprays. These arrangements are a welcome change from the tired bouquets of roses, chrysanthemums and daisies most folks are used to receiving, and a chance to introduce them to some native plants.

Ready to begin?

Adding prairie to my yard has been a process that has grown — no pun intended — over time. After putting those first native plants into the ground when we purchased our home in the Chicago region, I'm still planting prairie flowers, 24 years later. Planting prairie plants is a boon to pollinators and wildlife, and when done well, a bonus to your neighborhood and community. Start small, and be a part of making a difference. Why not get started planning your pocket prairie today?

*Cindy Crosby is an author, compiler or contributor to more than 20 books, including "*The Tallgrass Prairie: An Introduction" *(Northwestern University Press); "*Tallgrass Conversations: In Search of the Prairie Spirit" *(with Thomas Dean, Ice Cube Press), and most recently, "*Chasing Dragonflies: A Natural, Cultural and Personal History" *(Northwestern University Press). Cindy has been a prairie steward for the Schulenberg Prairie at The Morton Arboretum for more than a decade, and coordinates the dragonfly monitors at Nachusa Grasslands, a TNC site in Franklin Grove, Illinois. She is a member of Wild Ones Greater DuPage Chapter. Her blog, Tuesdays in the Tallgrass, describes her adventures in gardening and the natural world each week. She mixes natives and traditional garden plants in her small suburban yard in Glen Ellyn, Illinois.*

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monica@redstemlandscapes.com
https://www.redstemlandscapes.com

Spirited Gardener Inc.
spiritedgardener@gmail.com
https://www.spiritedgardener.com

The Growing Place
grow@thegrowingplace.com
https://www.thegrowingplace.com

Twig Landscape Design
mk@twiglandscapes.com
https://twiglandscapes.com

INDIANA
New Image Gardening LLC
Kkelling@gmail.com
https://www.facebook.com/New-Image-Gardening-LLC-80637767998/

KENTUCKY
Fields to Forest
annwhitney_garner@yahoo.com

MARYLAND
Native By Design
laurenhubbard100@gmail.com
https://www.facebook.com/Native-By-Design-LLC-2113417288925283/

Wildflower Native Plant Nursery
mariana@wildflowernativeplants.com
https://www.wildflowernativeplants.com/

MASSACHUSETTS
Plant Magic Gardens LLC
cheryl@plantmagic.shop
https://www.plantmagic.shop/

Tish Landscape Design
tish@tishlandscape.com
https://tishlandscape.com/

MICHIGAN
CleanAir LawnCare
cleanairlawncare.kazoo@gmail.com

East Michigan Native Plants
angela@eastmichnatives.com
https://eastmichnatives.com

Four Season Nursery
FSN7557@aol.com
https://www.fourseasonnurserytc.com

Inner/Outer Services
innerouterservices@gmail.com

Native Connections
jared@nativeconnections.net
www.nativeconnections.net

WILDTYPE Native Plant Nursery Ltd.
wildtypeplants@gmail.com
https://www.wildtypeplants.com

PLEASE SUPPORT OUR BUSINESS MEMBERS WHO SUPPORT OUR ORGANIZATION

MINNESOTA
Enabling Healthy Habitats, LLC
enablinghealthyhabitats@gmail.com

Heidi's Lifestyle Gardens
heidi@bloomonmn.com
https://www.growhausmn.com

Minnesota Native Landscapes
Amy.schaffer@MNLcorp.com
https://mnlcorp.com/

Morning Sky Greenery
info@morningskygreenery.com
https://www.morningskygreenery.com

Prairie Moon Nursery
carmen@prairiemoon.com
https://www.prairiemoon.com

Shoreview Natives
Shoreviewnatives@gmail.com
https://www.shoreviewnatives.com

MISSOURI
Brunette Gardens
brunettegardens@gmail.com
https://brunettegardens.com

Mariposa Gardening
maureenmariposa@yahoo.com

Missouri Wildflowers Nursery LLC
mowldflrs@socket.net
https://mowildflowers-net.3dcart-stores.com/

St. Louis Native Plants LLC
Svdr1@sbcglobal.net
http://stlouisnativeplants.com

NEW JERSEY
Aster Plans
carolle@asterplans.com
https://www.asterplans.com

NEW MEXICO
Waterwise Gardening LLC
david.salman@highcountrygardens.com
https://www.waterwisegardening.com/

NEW YORK
Amanda's Garden
ellen@amandasnativeplants.com
https://www.amandasnativeplants.com

Butterfly Effect
butterflyeffectplants@gmail.com
https://www.butterflyeffectplants.com

First Circle
cimbriab@gmail.com
https://firstcirclesystems.wordpress.com

KMS Native Plants LLC
kmsnativeplants@gmail.com
http://www.kmsnativeplants.com

OHIO
Freshwater Farms of Ohio Inc.
drdave@fwfarms.com
www.fwfarms.com

Ohio Native Growers
leavesforwildlife@yahoo.com
https://ohionativegrowers.org

OPN Seed
emily@opnseed.com
https://www.opnseed.com

Primary Nature Horticulture LLC
peach@columbus.rr.com
https://www.primarynaturehorticulture.com

Scioto Gardens Nursery
folks@sciotogardens.com
https://sciotogardens.com

PENNSYLVANIA
Allegheny Financial Group
Trina Brown, CFP®, CSRIC®
TBrown@alleghenyfinancial.com
https://www.alleghenyfinancial.com

Arcadia Native
arcadianatives@gmail.com
https://www.arcadianatives.com

Ernst Conservation Seeds
sales@ernstseed.com
https://www.ernstseed.com

Redbud Native Plant Nursery
info@redbudnative.com
https://redbudnative.com

Spruce Hollow LLC
sprucehollow19119@gmail.com
https://sprucehollownaturaldesigns.com

The Weed Lady PGH
Rachel@theweedladypgh.com
https://www.theweedlady.com

This Green City
thisgreencitypgh@gmail.com
https://thisgreencitypgh.com

TENNESSEE
Bleeding Heart Landscaping
bleedinghearthome@gmail.com
https://bleedinghearthome.com

GroWild Inc.
growild@gmail.com
https://www.growildinc.com

Oasis Ecological Services
darweedy@gmail.com

Thomas Nursery Inc.
thomasnsy@icloud.com
www.thomasnurserytrees.com

Urban Horticulture Supply
info@urbanhorticulturesupply.com
https://www.urbanhorticulturesupply.com

Walter G. George Soil Consultants
kategeorge2021@icloud.com

Wild Violet Permaculture
nathaniel@wildvioletpermaculture.com
https://wildvioletpermaculture.com

VERMONT
Full Circle Gardens
info@fullcirclegardens.com
https://fullcirclegardens.com

WASHINGTON
Woodbrook Native Plant Nursery
woodbrk@harbornet.com
https://woodbrooknativeplantnursery.com

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WISCONSIN

Alive & Well Naturally
breasthealth4U@gmail.com
https://aliveandwellnaturally.com

Cason & Associates LLC
info@casonassociates.com
https://casonassociates.com

DEL - Diverse Environmental Landscapes
paul@landscapewithDEL.com
www.landscapewithDEL.com

Formecology LLC
John.g@formecology.com
https://formecology.com

Good Oak Ecological Services
frank.hassler@gmail.com
https://www.goodoak.com/

Hickory Road Gardens
brayherb@mtc.net

Kerry Taste and Nutrition
Abigail.Bukowski@kerry.com
https://www.kerry.com

NES Ecological Services
jhavel@releeinc.com
http://neswi.com

Northern Native Plantscapes
florabee@hotmail.com

Prairie Nursery
marye@prairienursery.com.
https://www.prairienursery.com/

Quercus Land Stewardship
aewenthe@gmail.com
https://quercuslandstewardship.com

Rochester Deli, Inc.
greatfood@rochesterdeli.com
https://rochesterdeli.com

Wild Birds Unlimited
wbugreenbay@gmail.com
https://www.wbu.com

Wild Ones expands Native Garden Designs program

By Katie Huebner

Wild Ones launched its Native Garden Designs program in 2020 by introducing nine native garden designs for the ecoregions of Boston, Chattanooga, Chicago, Denver/Front Range, Milwaukee, Minneapolis, St. Louis, Tallahassee and Toledo. The designs are free for the public to use and were created by designers local to each region.

Another facet of the program was the development of a new digital/print publication on the how-to of native gardening, entitled "Creating Your Own Native Garden Designs." All these resources, supported by a grant from the Stanley Smith Horticulture Trust (SSHT) in 2020, sought to demonstrate that gardening with native plants can be attainable for gardeners of all skill levels, promote wildlife and yield beautiful results.

Wild Ones is proud to share that we are expanding this impactful program in 2022-23 with additional support from SSHT. In October of this year, Wild Ones provided chapters with a new print publication, "Climate Resilient Landscapes," a guide which focuses on the critical positive impact native landscaping can have in the face of climate change. Chapters were also replenished with additional copies of the "Native Garden Designs" guide in the hope that both publications would become integral tools in chapter member recruitment efforts.

In early 2023, Wild Ones will be debuting 10 new native garden designs for the ecoregions of the Columbia River Basin, Great Lakes, Lafayette (Louisiana), Greensboro, Las Cruces, Philadelphia, Portland, Princeton, Tucson and Washington, D.C. Once released, these designs (in addition to the original nine) will be downloadable from Wild Ones' nativegardendesigns.wildones.org website.

All the designs in the program were created using a standard residential template (170' wide by 70' deep) including front, back and side yards, and adhere to the following criteria:

- include 15+ straight species native to the design's ecoregion.
- encourage the use of multiples of plants rather than "specimen" plantings, to be consistent with building attractive pollinator gardens.
- incorporate native plants that provide habitat and food for wildlife.
- feature staggered bloom times throughout the growing season.
- include considerations for soil, moisture and sunlight.
- contain plants that are generally available for purchase in the specific ecoregion.
- are accompanied by a plant list that provides a quick preview of the diversity and beauty of the native plants incorporated in the design.
- include instructions for following a phased installation approach.

Once the designs are available, we hope you will share them with anyone you know that resides in these regions and could use help getting started on their native garden journey.

Wild Ones had the pleasure of collaborating with the following talented designers from around the country to produce these outstanding designs:

- Ann Autrey, of Tapteal Native Plants, (Columbia River Basin Design)
- Scott Calhoun, of Zona Gardens, (Tucson Design)
- David Cristiani, of Quercus LLC, (Las Cruces Design)
- Donna Giguere, of Donna Giguere Landscape Design, (Portland Design)
- Amy Heilman, of The Living Garden, (Grand Rapids Design)
- Rebecca Marquardt, of Revery Landscape Architecture, (Grand Rapids Design)
- Lisa McDonald Hanes and Julie Snell, both of Tend Landscape, (Princeton Design)
- Preston Montague, of Preston Montague Studio, (Greensboro Design)
- Donald Pell, of Donald Pell Gardens Landscape Design, (Philadelphia Design)
- Larry Weaner, of Larry Weaner Landscape Associates, (Washington, D.C. Design)
- Dona Weifenbach, of Louisiana Coastal Protection and Restoration Authority (retired), former owner of Sunset Landscaping, (Lafayette Design)

Stay tuned! We will be sharing information soon regarding our forthcoming Native Garden Designs Video Series which will feature Q&As with the designers of each of the new plans.

Thank you for partnering with us to help save the Earth, one yard at a time.

How to make bark butter

Recipe and directions courtesy of Wild Ones member Arthur Clifford, Front Range (Colorado) Chapter

Bark butter is a great winter treat for birds and squirrels. It is high in calories and fat, helping birds endure frigid temperatures. It is also easy to make and a fun project to do with children over the holiday season.

In a 3-quart (or larger) saucepan over low heat, combine 1½ cups each of the following ingredients. Allow the lard and peanut butter to liquify completely before blending in the remaining ingredients:

- Lard
- Crunchy peanut butter
- Unmedicated chick feed starter (check online or a local feed store)
- "No Mess" bird seed (use a food processor to yield a smoother mixture as desired)
- Whole oats (not instant)
- Corn meal

Recipe makes approximately 6½ cups. Store in a cool place or in a refrigerator in a reusable covered container. This is NOT for human consumption. Label appropriately.

APPLICATION

Smear bark butter with a spatula on fence tops or into the cracks and bark of tree trunks.

I have a dead tree in my yard that I have trimmed and allowed to stand just for the birds. Into this I drilled 1" deep holes randomly across the surface to serve as "butter" holders. The woodpeckers will happily enlarge these for you from season to season. You can also purchase a two-by-four and drill ½-inch holes 1" deep into it and fasten it onto suitable objects.

Remember this mixture will leave oily stains. And if you live in a rural area, all bird feeders will attract wildlife, including bears! It is best to put out suet or bark butter once you are sure bears are hibernating.

Apply with gloved hands or with a spatula. Keep the container with your mixture in contact with the surface and below your application site to catch excess that falls during this process. A paper towel is also handy.

An old baking tin tacked to the top of a fence post or wedged securely between branches can also serve as a feeder.

TIPS

- To thicken or thin the mixture, add cornmeal or peanut butter as needed.
- You may also incorporate surplus native seeds from previous collection years. Adding older seeds to bark butter is a great way to channel those seeds back into the food web.

Photo: Lisa Olsen

Bark butter on quaking aspen snag bark (*Populus tremuloides*). The dead and dying trees are left standing in a habitat garden to boost wildlife value.

Photo by Pxhere

Why do leaves have different shapes?

All maples have lobed leaves.

By Peter Lesica

It was about 30 years ago that I went to Costa Rica to get my first experience in a tropical rain forest. I took some books and thought I would be able to at least identify the trees. Fat chance!

Although there were dozens of different tree species in mature forests, their leaves all looked the same — broadly lanceolate with entire margins and elongated tips (drip tips). Although our temperate deciduous forests have far fewer broad-leaved (dicot) trees, these often have distinctive shapes and are easy to tell apart. So what's going on?

As it turns out, botanists have been trying to figure out the functional differences between the various aspects of leaf shapes for a long time, and there are a number of different, but not mutually exclusive, ideas. The most obvious trait of many temperate forest trees compared to tropical rain forest trees is lobing or the complete division into leaflets. Many botanists have found a strong correlation between entire-margin leaves and wetter habitats.

The main hypothesis to explain this correlation is that lobed leaves have a greater margin to surface area ratio; i.e., they've got more edge for each square inch of surface. Leaves thin down at their edges, so if a leaf has more of a "boundary layer" relative to the interior, it can stay cooler on hot days and will lose less water to evaporation. Of course this doesn't matter if you have access to lots of water, but it can be useful in drier habitats. Think of it this way; wearing gloves (lobed) will not keep your hands as warm as wearing mittens (entire margin), even if they are made of the same material. Lobed leaves also have fewer small veins because they have less area than if they had entire margins. As a result, water moves more easily in lobed leaves; it's another advantage in drier environments.

Plants with narrow leaves also have more of a boundary layer when compared to those with broader leaves, and they have the same advantage in xeric habitats.

Interestingly, plants living under water, the wettest possible environment, tend to also have narrow leaves. But in this case, the increased boundary layer helps the plants capture more CO^2, an essential molecule for photosynthesis. Think of water buttercup (*Ranunculus aquatilis*) or numerous species of pondweed (*Potamogeton*).

Another obvious leaf-shape trait is the presence of toothed margins, which have been shown to be more common in temperate forests compared to tropical forests. Veins go all the way to the tip of the teeth in toothed leaves, but rarely go to the very edge of an entire-margined leaf. Thinner leaves are more likely to have toothed margins. This is

possibly an adaptation to keep them from folding or rolling up. Like lobed leaves, thinner leaves can stay cooler on hot days.

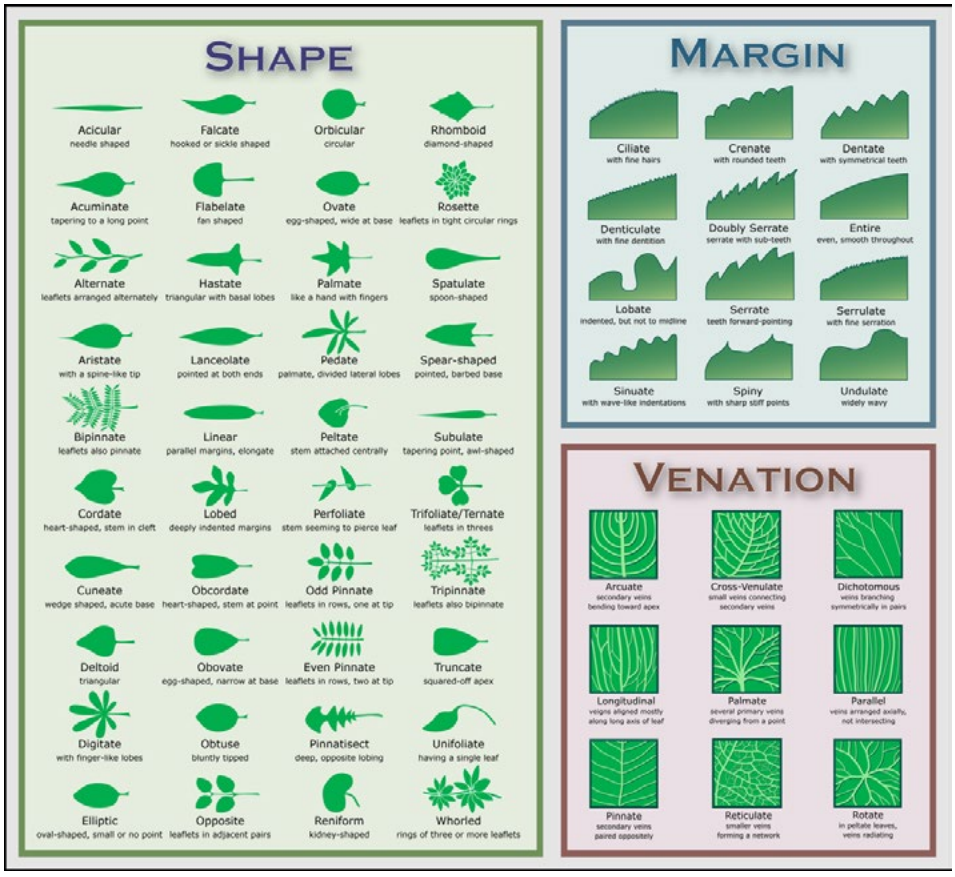
In addition, toothed margins of woody dicots increase in colder climates. This is thought to be the case because the teeth have been shown to be photosynthetically active earlier than the rest of the leaf, so toothed leaves can begin making carbohydrates earlier in the spring, which is advantageous in a cold climate with a short growing season. Finally, there is conjecture that spiny-toothed leaves may deter herbivory.

For instance, Montana has only 14 native deciduous tree species. So how do those 14 native trees match the above hypotheses? Bur oak (*Quercus macrocarpa*) has lobed leaves, and boxelder (*Acer negundo*) and green ash (*Fraxinus pensylvanica*) have compound leaves with leaflets.

All of the remaining 11 species: red alder (*Alnus rubra*), water and paper birches (*Betula occidentalis, B. papyrifera*), narrow-leaved, black and plains cottonwoods (*Populus angustifolia, P. balsamifera, P. deltoides*), quaking aspen (*P. tremuloides*), bitter and pin cherry (*Prunus emarginata, P. pensylvanica*), narrow-leaved willow (*Salix amygdaloides*) and American elm (*Ulmus americana*) — have toothed leaves.

The fact that none of those trees have entire-margin leaves suggests that Montana does not have a warm and moist climate. But you know that if you live there. All three of the trees with lobed or compound leaves occur east of the Divide, mainly in the eastern half of the state. Many, but not all of the trees with toothed leaves, such as quaking aspen and paper birch, are found at higher elevations or in cool, moist sites.

However, there are a number of species that don't match the predictions. American elm occurs only in extreme eastern Montana and has toothed rather than lobed leaves like ash or oak. River birch is equally common across the state



Keys to leaf morphology; Source: Pinterest

in both cool-wet as well as drier environments.

The problem is that climate is only one, albeit an important one, driver of leaf shape. A lot simply depends on genetic heritage. All maples have lobed leaves and all elms have toothed leaves, regardless of whether they occur in warm-and-wet South Carolina or cool-dry Utah.

There are also other adaptations at play. While the red and white oaks many are most familiar with have lobed leaves, some occur in moist forests, while several live oaks occur in very dry habitats and have entire-margin leaves. Many of these live oaks have thick, waxy leaves that persist for more than one year. So the climate-related trends are simply generalizations suggesting that leaf shape is, to some extent, adaptive. It's something to notice when you're out botanizing.

This article was written by Peter Lesica and first published in Kelseya, *the newsletter of the Montana Native Plant Society in 2020.*

Additional reading

• Ferris, K. G. 2019. Endless forms most functional: Uncovering the role of natural selection in the evolution of leaf shape. American Journal of Botany 106: 1532-1535.

• Givnish, T. J. 1987. Comparative studies of leaf form: assessing the relative roles of selective pressures and phylogenetic constraints. New Phytologist 106 (Suppl.)

• Zohner, C. M., E. Ramm and S. Renner. 2019. Examining the support–supply and bud-packing hypotheses for the increase in toothed leaf margins in northern deciduous floras. American Journal of Botany 106: 1404-1411.

Fox Valley Area Chapter donates native plants to Habitat for Humanity homeowners

CHAPTER NEWS

By Lucy Valitchtka

Habitat for Humanity helps people to build or remodel a home they can call their own. And for the last four years, the Fox Valley Area (Wisconsin) Chapter of Wild Ones is making sure those new homeowners know about native plants by donating a variety of natives to two families each year.

I have been interested in native plants since I was president of the Wisconsin Garden Club Federation in 2007-2009. My goal as president was to raise enough money from donations to seed a new prairie at the Appleton Memorial Park Gardens. I did meet my goal, and to learn more about native plants, I joined the Wild Ones Fox Valley Area Chapter.

One of the next steps in my native plant quest was to encourage the Paper Valley Garden Club to donate native plants as a civic project for the then-new Greater Fox Cities Area Habitat for Humanity homeowners. They agreed, but the club only devotes three years to a particular project and then chooses a new one. Since I didn't want to discontinue this project, I approached the Wild Ones Fox Valley Area Chapter to take over the effort and donate plants to the new homeowners from its annual plant sale.

With guidance from Habitat for Humanity, we donate plants to two families each year. I choose three plants each, for spring, summer and fall blooms, and usually forbs. Grasses could be an option, as well.

This year I focused on pollinator plants.

When I take the plants to Habitat for Humanity, I also include Prairie Nursery catalogs with the plants they receive marked with a tab and highlighted so they know how to care for the plants. In addition, copies of our Wild Ones Fox Valley Area program booklets are included for any recipients interested in attending our programs or becoming members.

Habitat for Humanity has responded with photos of the smiling recipients holding their plants.

The chapter's cost for the 18 plants has ranged from $64.80 to $117. The chapter calculates the total donation based on each plant's wholesale price.

A 2019 thank you from the Habitat for Humanity president and chief executive officer shows our efforts are appreciated and worthwhile. The letter read: "Thank you for your donation of plants for Habitat families! Every item helps us assist families in our program. Whether it is materials , services rendered, or another form of donation, all of us are working toward the same goal. We all want a world where everyone has a decent place to live. Thank you for helping us move one step closer to our objective."

With climate change affecting our lives today, it is even more important to realize what really benefits our Earth. Native plants are part of the answer. If the Habitat for Humanity families who receive our plants have success with their plants, it benefits all.

Lucy Valitchtka is a member of the Fox Valley Area (Wisconsin) Chapter of Wild Ones.

All photos courtesy Greater Fox Cities Area Habitat for Humanity

At right, from top: Kimberly Lambert in Kaukauna shows where she will place the native plants donated to her by the Fox Valley Area (Wisconsin) Chapter of Wild Ones; Ethan was excited with the Fox Valley Area (Wisconsin) Chapter's donation of native plants, and anxious to see all the butterflies that might stop in his yard to nectar; Sondra was a 2022 recipient of native plants, thanks to the Fox Valley Area (Wisconsin) Chapter of Wild Ones.

Front Range demonstration gardens educates public in Metro Denver

CHAPTER NEWS

By Deb Lebow Aal and Mary Hinton

Wild Ones Front Range (WOFR) Chapter members in Metro Denver have promoted demonstration gardens as a way to educate the public. The Ekar Farm Demo Garden is one example.

Ekar Farm is a nonprofit farm in central Denver that donates all its produce to people in need. It had only vegetable crops and a fruit-producing orchard until the farm's leaders reached out to WOFR's officers in early 2021. It was a natural partnership – to build soil, feed the human community and feed our natural ecosystems. With more than 6,000 volunteers and visitors a year, Ekar provided WOFR a great opportunity to reach the public with their native plant message.

One volunteer recalls: "So in we went, with just a few WOFR volunteers. We started with 900 square feet of unirrigated clay soil, alfalfa and weeds. We began with plants we already had from a failed attempt at a pollinator garden, such as *Helianthus maximiliani* (Maximillian sunflower), *Mirabilis multiflora* (Colorado four o'clock) and *Gaillardia aristata* (blanket flower). Weed removal was not fun, requiring brute force and pickaxes. We put down a layer of cardboard, then mulched with pea gravel for meadow areas and with shredded leaves for prairie areas featuring native grasses."

The volunteers laid out a central path, the only area covered wiith landscape fabric. Hoping one day to apply for an Audubon Rockies Habitat Hero designation, they added a water feature with a locally sourced Colorado boulder. Dozens of additional native plants were added in 2022.

All photos by Deb Lebow Aal

Top left: We started with all weeds; put down cardboard and then two types of mulch - pea gravel and wood mulch, for different sections. Top right and above: The gardens at mid-season.

The group is incredibly proud of the results.

"We learned that partnership with an established organization with a like-minded mission is very helpful, help from consistent and knowledgeable volunteers is essential, a manageable garden size is important and that magic happens," the volunteer said. "The soil after one season was improved, weeds grow — no matter how often you weed — and WOFR was able to educate many, many visitors on native plant basics."

Mark Your Calendar

DECEMBER
Native American Heritage Month

Dec. 5
World Soil Day

Dec. 12, 5 p.m. CT
National Board of Directors Meeting
All Wild Ones members are invited to attend virtual national board meetings.
Click for the Zoom meeting link at https://members.wildones.org/board-meeting-link/

JANUARY
Jan. 5
National Bird Day
How about planning to add more bird-friendly plants this growing season?

Jan. 10
Save the Eagles Day

Jan. 28
National Seed Swap Day
Visit www.wildones.org/connect/chapters/ for a link to your chapter's website to see if there is a seed swap near you.

FEBRUARY
National Bird Feeding Month
Don't forget to incorporate plants with edible seed-pods or berries in your landscaping.

Feb. 2
World Wetlands Day

Feb. 27, 5 p.m. CT
National Board of Directors Meeting
All Wild Ones members are invited to attend virtual national board meetings.
Click for the Zoom meeting link at https://members.wildones.org/board-meeting-link/

Feb. 27 – March 3
National Invasive Species Awareness Week

CHAPTER ANNIVERSARIES

Includes anniversaries between August-October

Chapter	Years
Madison, Wisconsin	27
Menomonee River Area, Wisconsin	25
St. Cloud, Minnesota	24
St. Louis, Missouri	24
Arrowhead, Minnesota	22
Central Wisconsin, Wisconsin	22
Central Upper Peninsula, Michigan	21
Greater Cincinnati, Ohio	21
Lexington, Kentucky	20
River City-Grand Rapids Area, Michigan	15
West Cook, Illinois	9
Front Range, Colorado	9
Smoky Mountains, Tennessee	7
Southeast Missouri, Missouri	4
South Shore MA, Massachusetts	4
Louisville, Kentucky	4
Middle Tennessee, Tennessee	4
Chesapeake, Maryland	3
Keweenaw, Michigan	3
Western Pennsylvania Area, Pennsylvania	1
Mohawk Valley, New York	1
Northeast Ohio, Ohio	1
Mid-South, Tennessee	1
Capital Region NY, New York	1
South Bend, Indiana	1

NEW AFFILIATE MEMBERS

Includes affiliate members who joined between August-October

Coffeyville Neighborhood Initiative: Fresh Start Youth Garden
https://www.coffeyvillesreawakening.com/
Peggy Steele
Partner At Large

Jannett Lueiro
Charlotte Piedmont

Sweetfern
https://www.sweetfernnativegardens.com/
Deborah Ballem
South Shore MA

Riverwood Nature Center
https://www.riverwoodnaturecenter.org/
Kimberly Anderson
Partner At Large

Pollinator Patches, LLC
https://www.allthepollinators.com/
Richard Farrell
St. Louis

River Valley District Library
https://www.rivervalleylibrary.org/
Teri Schwenneker
Quad Cities

Falon's Sprinkle Kindness Inc.
Shannon Morris
Pennsylvania Ridge & Valley (Seedling)

Real People Media
https://www.realpeoplemedia.org/
Rebecca Glotfelty
Keweenaw

Pelican Park, Recreation District #1
http://www.pelicanpark.com
Louisette Scott
Pontchartrain Basin (Seedling)

University of Illinois
Jack Zinnen
Central Illinois (Seedling)

Midwest Native Plant Society, Inc.
https://www.midwestnativeplants.org/
Kathy McDonald
Greater Cincinnati

Simply Bee Conservation
https://simplybeeorganics.com/
Tyler Stellern
Front Range

Rubus Landscape Architecture
http://rubuslandscape.com/
Crystal Gaudio
Mountain Laurel

RENEWING AFFILIATE MEMBERS

Includes affiliate members who renewed between August-October

Lloyd Library & Museum
www.lloydlibrary.org
Greater Cincinnati

Lost River Cave
rho@lostrivercave.org
Rho Lansden
SoKY

Melville Kennedy
North Oakland

Donna Baker-Breningstall
Front Range

Maureen Ruben
Mohawk Valley

Danielle Bell
Menomonee River Area

Margot Monson
Big River Big Woods

Connecticut College Arboretum
https://www.conncoll.edu/the-arboretum/
Maggie Redfern
Mountain Laurel

Oak Brook Park District
bgibellina@obparks.org
Bonnie Gibellina
Greater DuPage

Shaw Nature Reserve
jsieradzki@mobot.org
Jen Sieradzki
St. Louis

LIFETIME MEMBERS

(August-October)
Tamara Hayter, NoVA Seedling

IN MEMORIAM

Bruce and Diana Baldi, Upper Ohio Valley Seedling Chapter, auto accident

Abe Kelley, Appalachian Highlands

Martha Lunz, Milwaukee-North

Carol Phelps, River City – Grand Rapids Area

Joy Buslaff, Milwaukee-Southwest-Wehr (See obituary in Fall 2022 issue)

LuAnne Thompson, Milwaukee-Southwest-Wehr

Carol Phelps, 85, the founder and first president of the River City Chapter of Wild Ones, died on July 10, 2022.

After a career as a manager for AT&T, Carol turned her focus to volunteering. She had a passion for natural resources and devoted her time and energies to The Grand Rapids Audubon Club, the Land Conservancy of West Michigan, the Western Michigan Environmental Action Committee and Kitchell Lindquist Dunes.

Phelps was a member of the Kalamazoo Chapter of Wild Ones for several years before deciding in 2007 that Grand Rapids needed its own chapter. She enthusiastically gathered a small group and served as chapter president for two years before stepping down and volunteering in an advisory capacity.

The River City-Grand Rapids Area Chapter recently celebrated 15 years.