Wild Ones

NATIVE PLANTS, NATURAL LANDSCAPES

FALL 2023 • Journal • VOL. 36, NO. 3

Cover Photo: Laurie Martin

A voice for the natural landscaping movement.

Free Identification Apps and Community Science Projects

Barbara A. Schmitz

The days are getting shorter and that means my time spent on my backyard deck, sitting in a glider with my laptop as I work on the Wild Ones Journal, is coming to an end, at least for a bit. My backyard is my favorite place to work, and not just in my garden.

There's something about working outside and hearing birdsong, or about glancing up to see a tiger swallowtail or monarch flutter by. It doesn't make work seem like work. It's relaxing, almost comforting. You notice things that otherwise would go unnoticed.

That's the premise of Chris Helzer's "Hidden Prairie." Helzer, director of science for the Nature Conservancy in Nebraska, spent a year photographing life in a square meter plot. And by the end, he had taken pictures of 113 species of plants and animals. But he was most impressed by the beauty he found in that small area.

So impressed with Helzer's story (and subsequent book), the Wild Ones Loess Hills Chapter created their own Hidden Wild projects using old mailboxes, notebooks and more, open to chapter members or the public. People are asked to stop by one of their sites and contribute their observations. What an amazing way to encourage people to really look at a small area and appreciate the beauty that can be found there!

Those projects are part of community science, and Janet Allen, co-founder and current president of the Wild Ones Habitat Gardening in Central New York Chapter, writes that now it is more important than ever to contribute and help researchers document plant and animal lifecycle events and learn in the process. She also includes an extensive list of Free Identification Apps and Community Science Projects that can be found on the Wild Ones website.

This issue of Wild Ones Journal also contains great examples of what chapters and chapter leaders are doing to promote native landscaping, including developing partnerships with like-minded organizations. And it offers so much more: from stories to help you create your native garden to help it thrive, to stories on snakes, bees and cacti.

So, if it's a nice day, grab your laptop or iPad and head outdoors to your deck or porch to read this issue of the Journal. And take the time to enjoy and really observe all that nature has to offer.

Wild Ones
NATIVE PLANTS, NATURAL LANDSCAPES

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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.

FALL 2023 • VOL. 36, NO. 3

Wild Ones Journal
Online version: ISSN 2472-5900
Print version: ISSN 1551-9155

WINNER 2020 APEX® AWARDS FOR PUBLICATION EXCELLENCE

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Spreading the Word

Wetland Indicator Status: It's About More Than Wetlands

If this is not part of your plant selection toolkit, it should be.

by Shannon Currey

Read More

Can You Say That Again?

Are you baffled by botanical names? We can help.

by Amanda McClean

Read More

Black Gold: Nurturing Soil Wealth with Biochar

When planting anything in the ground, how much do you consider the soil you are planting into?

by Mark Highland

Read More

We're proud to help in **Wild Ones' mission**: for the past 3 years, we have enjoyed supporting this newsletter by sharing snippets of native plant wisdom with you.

If you've found these snackable bits of information valuable, check out the main courses provided by our blog, which includes guest posts by leaders in the field such as Nancy Lawson and Benjamin Vogt.

Getting Sedgy With Green Mulch

Why do we insist on going against nature and applying wood mulch every spring in our urban landscapes?

by Benjamin Vogt

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How Late is Too Late to Plant?

A few simple precautions will go a long way toward not only ensuring that your new plants survive the winter, but that they thrive the following year.

by Claudio Vazquez

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The Plants Are Coming Home

Partnering with natives to crowd out invasives.

by Nancy Lawson

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NEWS

ACROSS THE NATION

By Morgan Vogt

CALIFORNIA

According to data collected by the National Park Service from the Santa Monica Mountains National Recreation Area, there has been a steady increase in nonnative plant cover, from 4% in 2014 to 29% in 2018. Phys Org reported that this, along with the rapid regrowth of invasive grasses and herbaceous plants after the 2018 Woolsey fire that burned 80% of the region, has brought an increased risk of damaging wildfires.

While fire is usually beneficial for native plant communities, prolific invasive seedbanks in the soil can rapidly overtake native communities when the shrub cover is reduced. Invasive species accumulate layers of plant material that are highly flammable when compared to native species, highlighting the importance of finding locations where invasive weed management is essential.

According to a new study from the University of California San Diego, honeybee pollination could make plants less genetically fit to survive and reproduce.

Smithsonian Magazine reports a new study's finding that when measuring seeds' fitness from three common California plant species grown under different conditions, those that were pollinated by native bees were two to five times more fit than those pollinated by honeybees. The study reasoned that this may be due to the honeybees' foraging style, in which they tend to visit flowers of the same plant twice as often as native bees do, which leads to more inbreeding.

ILLINOIS

In 2001, a prairie restoration project was started by a Waubonsie Valley High School science teacher at Eola Hill adjacent to Waubonsie Lake Park. According to the Suburban Chronicle, after 20 years of student contributions, Eola Hill has become a high-end habitat for native plants, animals and insects. Every year students in the botany and AP environmental science classes harvest seeds, freeze and then germinate them in their greenhouse, and then replant them on the hill each spring.

This year's class planted more than 5,000 seedings, expanding the diversity of plant species available for the increased number of birds and insects in the area. The prairie restoration is done in partnership with Fox Valley Park District's horticulture department, which provides materials.

PENNSYLVANIA

The limpkin (Aramus guarauna), a tropical bird native to Florida and Georgia, made its first appearance in Pennsylvania at the Middle Creek Wildlife Management Area, according to the Philly Voice.

The limpkins' breeding range has been expanding from their native areas into South Carolina and other states surrounding Florida. This in turn has encouraged them to venture further north post-breeding.

Limpkins have been found in the mid-Atlantic, the Midwest and as far west as Oklahoma, Colorado and Texas. The expansion is partly due to the spread of invasive snails throughout U.S. waterways and the limited amount of competition for this food source.

SOUTH CAROLINA

Biologists with the South Carolina Department of Natural Resources began tagging monarchs across inland swamp and sea island habitats in 2018 and have found that they are following a different behavioral pattern than usually observed with monarchs, WCBD Charleston reported.

The butterflies are living year-round in South Carolina, spending spring, summer and fall in the swamps and then moving to the sea islands in the winter. This is unusual behavior for monarchs, as they typically migrate to Mexico in the fall.

Additionally, aquatic milkweed (*Asclepias perennis*) was identified as a host plant, along with swallow-wort (*Cynanchum* sp.), which is a relative of milkweed. However, Monarch Joint Venture warns that black swallow-wort (*Cynanchum louisea*, also known as *Vincetoxicum nigrum*) and pale swallow-wort (*Cynanchum rossicum*, also *Vincetoxicum rossicum*) have a negative impact on monarchs. Studies have shown that female monarchs will lay eggs on black swallow-wort, even when it is growing in the same field as common milkweed. Laboratory tests also show that monarch caterpillars cannot feed on black or pale swallow-wort plants. Thus, caterpillars from eggs laid on these invasive plants will not survive. In addition, swallow-worts can crowd out native milkweeds, which can eliminate appropriate food sources for monarch caterpillars.

Black and pale swallow-worts should not be confused with *Cynanchum laeve* (common names sandvine, honeyvine, bluevine milkweed and smooth swallow-wort), a similar plant that is native to eastern and central U.S. states and Ontario. *C. laeve* is an appropriate monarch host, and is found in many of the same states as the invasive species.

Wild Ones member Morgan Vogt moved to a community called Windings in 2020 that is devoted to protecting and restoring the local ecology, and since then, she has been an advocate for native planting. She is a digital marketer for a book publisher and spends her time reading, scrapbooking and learning as much as she can about native gardening.

Member Garden

Regina Santore
Smoky Mountains (Tennessee) Chapter

The area around Regina Santore's mailbox is now filled with color and life, thanks to a variety of native plants such as dwarf crested iris (*Iiris cristata*), heath aster (*Symphyotrichum ericoides*), guara (*Guara lindheimeri*), lance-leaved coreopsis (*Coreopsis lanceolata*), black-eyed Susans (*Rudbeckia hirta*) and others.

Regina Santore said her family purchased their home in Knoxville, Tennessee, in late 2020, mostly for the inground pool, as it provided a "staycation retreat" during the pandemic.

"Having moved from the inner city, my young son and I were immediately entranced by our neighborhood's birds," she recalled. "We quickly got some feeders and a birdbath. Several species made themselves at home, but not the one that caught my son's fancy - the ruby-crowned kinglet."

Santore said they had seen this bird several times on walks around their neighborhood, but never in their own yard.

"We wondered why," she said. One of their neighbors, an original resident of their 1960s neighborhood, commented to her that there were far fewer birds than there once were, and he also wondered where they went.

"This question stuck with me," Santore said. "What had happened to the birds?"

Her early research indicated that they needed to provide more ways for birds to find food.

"We built a large flower garden, bought big box store plants and grew giant sunflowers," Santore recalled. It did result in a few more bird species, but not too many. Then she stumbled upon the idea of installing a purple martin complex, through a local birding Facebook page.

"We learned that martins are endangered, and that people need to actively help them by providing more habitat," she said. "So, we ordered and installed the complex, as well as a bluebird house."

Although no martins found their yard, a house wren did take up residence in the bluebird box and had a family.

"These were not our target birds for sure," Santore said. "I questioned why we were not succeeding? What was missing?"

She then discovered the "Nurturing Nature" Facebook group, which focused on native plants for her region. Through that group, she also learned about Wild Ones.

"My eyes were opened," Santore said. "Habitat was not just pretty flowers from other places; in fact, it wasn't 'habitat' at all, nor was the

Member Garden

Regina Santore
Smoky Mountains (Tennessee) Chapter

Regina Santore's house before, with a "green Sahara" for a front yard since 1968. Few birds called it home during that time. Santore decided to change that.

lawn we were endlessly mowing. It was all the 'green Sahara.' I looked at my neighbor's yard, the one who wondered where all the birds had gone. He had nothing but silver maples and grass. Of course, the birds were gone! We were not helping them in the slightest. They needed the right plants, that is, native plants, so they would have the right food."

In mid-October 2021, Santore purchased a few native plants from the Native Plant Rescue Squad in Knoxville, thinking she'd do a native planting bed.

"However, they were the most enthusiastic salesmen, and I was an enthusiastic purchaser, so I ended up with many plants that I did not recognize, including several trees," she said.

Santore started researching where her new plants would thrive. She first reviewed her property, knowing that many of the plants she had purchased were woodland plants, and she only had two trees, both in her front yard.

"I decided that I would create a forest in my front yard," she said.

"That led me to realize I'd have more late-afternoon shade in the center of my front yard if I did, and more things that like morning sun and afternoon shade would thrive there. Then I realized I had many full sun plants that could just as easily thrive in many portions of the front yard as they would in the back yard, and voila! My plan to convert my front yard into multiple habitats with all-native plantings was born."

Santore drew up her plan on graph paper: a forest island around the existing trees, transitional areas with shrubs and young trees east and west of the island, a blueberry bed, large areas of mostly full sun for pollinator plants and caterpillar host plants, and grasses, dotted with keystone shrubs and small trees.

That December she gathered massive amounts of cardboard and ordered her first load of arborist chips. And, as it was late fall, she picked up loads of leaves (and insects) from neighbors and created an island of duff around the existing trees, with a brush pile in between to provide shelter for the little creatures. On Christmas Eve, she laid the cardboard in her desired shapes and started laying the chips!

In January 2022, Santore ordered soil tests to see what her soil conditions were.

"This is an important step, as many native plants have very specific soil pH needs," she said. To save money, "I started many native plants from seed using the winter sowing method of placing seeds on soil in milk jugs, then leaving them outside until they germinated."

The front yard transformation: In October 2022 after starting a rain garden trench from the street.

Santore recorded them in a master spreadsheet, with details about each plant's preferred growing conditions. On warmer days, she prepared the soil in the blueberry bed, removing the Bermuda grass (*Cynodon dactylon*) roots by hand, adding pine needles and oak leaves, and amending the soil with sulfur to lower the pH.

In early spring 2022, after the worst of the cold, she ripped out the first of many nonnative shrubs along the front of the house and started planting native trees and shrubs. She also collected oak stump grindings from a neighbor's yard to use as mulch for the blueberry bed.

"But later that spring it became obvious that I did not have nearly enough wood chips, and the Bermuda [grass] began creeping through with great vigor," Santore said. "I ordered more chip drops, placed more cardboard, and began spreading a much deeper layer of chips."

If she were to do it over, Santore said she would use black plastic to kill the Bermuda grass.

She worked in her front yard first, worried that her neighbors would complain about her mountains of chips, milk jugs overflowing with plants and the general unsightliness of her entire property.

"I removed the Bermuda [grass] by hand from around the mailbox, then planted dwarf crested iris (*Iiris cristata*), heath aster (*Symphyotrichum ericoides*), guara (*Gaura lindheimeri*), blanket flower (*Gaillardia*), black-eyed Susans (*Rudbeckia hirta*), false indigo (*Baptisia*) and lanceleaf coreopsis (*Coreopsis lanceolata*) nearest it, in hopes that this would give the neighbors some idea of what the yard would become," she said. "Then I went back to struggling against the Bermuda and spreading yet more chips."

Santore said she had resigned to placing the buttonbush she'd purchased in the backyard because conditions in the front yard were not wet enough to support it.

"I'd wanted it in the front to show the neighbors the fantastic amount of life it would support!" she said. "In late May, however, during the heavy rains, while I was removing Bermuda grass from the cracks in the curb and pavement along the road, I noticed that there was a large gap between my driveway edge and the curb and a great deal of stormwater was passing by my yard on its way downhill, some of which could be easily diverted into the gap by digging a trench into the yard. At that moment, a rain garden was born, allowing me to grow the buttonbush in the front yard after all, and helping to reduce the stormwater runoff burden on my local creek."

This summer, Santore worked to fill in the rain garden strip and spread the rest of the chips, as well as removed the rest of the Bermuda grass. Her front yard is now certified by the National Wildlife Federation and Tennessee Smart Yards and is also "on the map" as a Homegrown National Park. In addition, she's nearly finished earning her "Certificate in Native Plants" from Wild Ones Tennessee Valley Chapter and she's using the knowledge she's gained there to educate the public in Knoxville as secretary of the Smoky Mountains Chapter.

"I hope [my efforts] will encourage my neighbors" to follow suit "and spend time with the wild creatures that call our neighborhood home," she said.

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.

Member Garden

Regina Santore
Smoky Mountains (Tennessee) Chapter

The fence at the end of their driveway in July when sunchokes (*Helianthus tuberosus*) are in bloom.

Uniting local business owners and conservationists to build a stronger community

Bird tours offered at the renovated Harroun Park quickly filled up. Ornithologist Pete Blank led the tours along the River Trail and some attendees who had never been to the park before said they were delighted to learn that they have an exceptional birding location in their own hometown.

By Candy Sarikonda

I am chair of the Sylvania, Ohio city's tree commission. I am also a Monarch Watch conservation specialist, a cardiac nurse and an amateur wildlife photographer.

In 2019, I began pushing my city to restore the floodplain ecosystem at our city's riverside park, Harroun Park. This 26-acre park, in the heart of the city, had become overrun with invasive trees and plants such as common buckthorn (*Rhamnus cathartica*), Tree of Heaven (*Ailanthus altissima*), Callery pear (*Pyrus calleryana*), reed canary grass (*Phalaris arundinacea*) and garlic mustard (*Alliaria petiolata*). These invasives had choked out the native vegetation. As we lost our native trees and wildflowers, we lost the insects that feed on them, and thus many of our native birds and mammals that feed on those insects.

Harroun Park had become so overgrown with invasives that it felt like a jungle. The view of the river was completely obstructed along the park's so-called River Trail. Visitors were easily lost in the park, unable to see the layout of the land and find their way. Fewer and fewer people were visiting the park as they felt unsafe. The park was becoming lifeless.

Having a park alongside a river is a major asset to a community, providing a place for citizens to gather and enjoy the outdoors. The floodplain of our park helps absorb excess water during periods of heavy rainfall, protecting area homes and businesses from flooding. Harroun Park clearly needed to be restored, not only for the mental health of our residents, but also to ensure that it could continue to sequester floodwaters and support wildlife in a changing climate.

Fellow tree commissioner and Wild Ones member Rick Barricklow and I approached the city council and explained the need to restore Harroun Park and a lesser-known community park called McNeely Park. We did a site visit to both parks with the mayor and council members, then held a formal meeting in council chambers. I had just completed a successful restoration of my archery club's property with The Nature Conservancy (TNC), and I knew we could do the same restoration work at Harroun Park. I invited TNC to join us at the park visits, and the city council subsequently agreed to allow TNC to provide an estimate for restoration of Harroun Park.

Our city received a $270,000 grant from the Ohio Environmental Protection Agency (EPA) to restore our floodplain ecosystem to 70% native. But we were falling short of that goal, and in danger of having to repay the grant. The EPA agreed that if we hired TNC to do the restoration work, we would satisfy the grant requirements and be absolved from having to pay back grant monies.

This is the entrance to the River Trail. Many walkers and birders gather at sunrise to enjoy this riverside trail.

The council was concerned that restoring both McNeely and Harroun parks could be costly, so I offered to have the tree commission volunteers do much of the restoration work at McNeely Park, if the council would agree to hire TNC to restore Harroun Park at a cost of $26,000 over two years. This proved agreeable, and the city council approved hiring TNC.

We began the restoration work in early 2020, just as the pandemic was hitting. The Nature Conservancy's Interagency Restoration Team began by removing the vast stands of buckthorn using a forestry mower and chainsaws. After the buckthorn was eliminated, our tree commission and city forestry crew worked to select and plant new trees, shrubs and native wildflowers appropriate for a floodplain ecosystem. We planted sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), river birch (*Betula nigra*), swamp white oak (*Quercus bicolor*), buttonbush (*Cephalanthus occidentalis*) and arrowwood viburnum (*Viburnum dentatum*) and protected them from deer browsing using tree cages.

We planted wild bergamot (*Monarda fistulosa*), woodland sunflower (*Helianthus divaricatus),* ironweed (*Vernonia*), Joe-Pye weed (*Eutrochium*), New England asters (*Symphyotrichum novae-angliae*), jewelweed (*Impatiens capensis*) and other Ohio native wildflowers as well. Now in their third year of restoration, both parks have been substantially improved, and the birds and butterflies are returning.

And so it was time for the next step. We needed to involve area businesses in promoting the park and educating the public about the birds and butterflies that can be found there. It was time to promote Harroun Park and its River Trail.

If you are a birder, you may be familiar with the Biggest Week in American Birding. It takes place at Magee Marsh in northwest Ohio and draws more than 90,000 visitors to the surrounding community for a weeklong birding event in early May, during peak spring migration. Warblers are the major draw for birders at that time, and I wanted to capitalize on this and attract birders to our River Trail, which was also now hosting many warblers and was far less crowded with people. I wanted to promote the River Trail as our own mini "Magee Marsh" and

reached out to local business leaders to create our own bird and butterfly event.

Red Bird Sylvania is a group of business owners, artists and community leaders dedicated to promoting the city's downtown area as a place for residents to connect and support area businesses. The group hosts a monthly event, called First Fridays. Each event has a different theme, and on the first Friday of every month from 5-8 p.m., area businesses, artists and art galleries, restaurants and breweries all work together to promote the theme during the Friday event. I reached out to Red Bird's Executive Director Katie Cappellini, a former councilwoman and art gallery owner, and we brainstormed an idea to create a First Friday event around birds and the River Trail. Cappellini ran with the idea, quickly organizing area business leaders and environmental stewards to create a bird-themed event, sponsored by Red Bird Sylvania and our local Wild Birds Unlimited store.

Dani Fuller of Fuller Art House created a promotional event flyer. Red Bird Sylvania promoted the event through social media and our local newspaper. I gave a 10-minute speech at the Sylvania Area Chamber of Commerce's April luncheon and Arbor Day event, during which I presented a PowerPoint presentation informing over 140 local business leaders and politicians about our tree commission's restoration efforts at Harroun Park and encouraged them to participate in the For The Birds event in May. I highlighted the business end of the event and the potential tourism dollars brought in by visiting birders.

For the event, our local art galleries held bird-themed art exhibitions. We invited all downtown business owners to offer bird-themed merchandise during the event. We also invited conservation organizations to gather in our small, downtown corner park with display tables

This yellow-rumped warbler (*Dendroica coronata*) is one of many warbler species that can be found in Harroun Park during the spring migration. The park has also become a favorite nesting site of Baltimore orioles (*Icterus galbula*), indigo buntings (*Passerina cyanea*) and yellow warblers (*Setophaga petechia*).

presenting information about each of their organizations. The Sylvania Tree Commission, Red Bird Sylvania, Wild Ones, Oak Openings Green Ribbon Initiative, The Nature Conservancy and Oak Openings Region Conservancy handed out educational materials and answered questions from the public about gardening for birds and butterflies, selecting and caring for trees and connecting with fellow native plant advocates. Our local Wild Ones chapter passed out more than 150 packets of free native wildflower seed. Nature's Nursery, a local wildlife rehabilitation center, brought an albino cardinal for visitors to see, and taught the public about wildlife rehabilitation. Wild Birds Unlimited sponsored the event and had a table selling bird houses, feeders and other bird supplies.

Red Bird Sylvania had a display table featuring photos I had taken of warblers in Harroun Park, to encourage visitors to sign up for a bird tour we planned to conduct there. The sign-up sheet quickly filled to capacity, as visitors marveled at the birds they might see. We held the bird tours the next morning and again four days later. Ornithologist Pete Blank of The Nature Conservancy's restoration team led the bird tours, during which he educated the public about birds while I taught them about the plants they were seeing and our restoration work in the park.

The Friday night event and subsequent bird tours were hugely successful. So much so that we intend to make this an annual event, and we are considering a butterfly-themed event for the fall, to highlight the fall monarch butterfly migration through our area.

For me, one of my highlights was hearing an attendee tell us how much she loved the way the event had brought our community together. "No politics, and so much love. It's just great to find fellow birders in my hometown." Cappellini, Blank and I smiled. That's what it's truly all about — bringing people together.

If you are thinking of planning such a venture, don't hesitate. You don't have to know everything, but you do need to know your resources. Get involved with your city leaders. Join your local tree commission, Rotary or Chamber of Commerce. Sit in on city council meetings. Don't allow imposter syndrome to stop you; you are qualified to organize and plan such things. Reach out to existing organizations, gather community leaders and brainstorm. Together, you can do something beautiful for your community for years to come.

Candy Sarikonda, a member of the Wild Ones Oak Openings Region (Ohio) Chapter, is a conservation specialist for Monarch Watch and chair of the City of Sylvania, Ohio Tree Commission. She also served as a contributing editor for the Wild Ones Journal.

Republished with permission from the July issue of the Southern Lepidopterists Society Journal.

All photos by Besa Schweitzer

Photo: Carolle Huber

Part 3 of a 4-part series

My Garden Revolution

It's time to invite insects into our gardens

By Carolle Huber

Twenty-five years ago, I removed all the lawn in my small front yard. That was the beginning of the "lawn is not as good as you think" movement, and as a landscape architect, I wanted to be part of it.

I didn't plant Japanese barberry (*Berberis thunbergii*) or purple loosestrife (*Lythrum salicaria*); we already knew they were invasive, but it took 10 more years before some states started banning their sale. But I did plant butterfly bush (*Buddleja* [or *Buddleia*] *davidii*) to support monarchs and other butterflies. That may have been one of the first plants I removed when I discovered it was invasive. At that time, I had no idea of the devastating impact invasive plants would have on my local woods over the next 25 years.

That first garden was beautiful, all purple and white, with color from early spring through late fall, with plants like white Asian bleeding hearts (*Lamprocapnos spectabilis*) and white Japanese anemones (*Anemone* x 'Honorine Jobert'). I had torn out some pages from a nursery catalog that listed what months plants bloomed. It was a great tool for a beginning designer. I could turn to the catalog and find out more about each plant, with symbols for sun, part shade and so on. But there

A spicebush swallowtail (Papilio troilus) on cardinal flower (Lobelia cardinalis), left, and an Eastern tiger swallow (Papilio glaucus) on beebalm (Red monarda), below.

was no symbol for native. I never considered it either, and I have a degree in environmental science.

That garden had very few native plants, and my mantra was "Miracle Grow on Mondays." As a young mother and professional, luckily I only found time to use it a few times a season. The problem with my mantra was that the blue crystals found in most soluble synthetic fertilizers will push your plants to grow faster and have more flowers, but they do nothing for your soil. They are actually damaging it, sending you into a cycle where you have to use more and more fertilizers as your soil quietly dies.

The nitrogen these fertilizers provide your garden comes from synthetic ammonium and nitrates that produce off-chemicals that are harmful to all the life in your soil: worms, nematodes and microbes. Not to mention the run-off into streams and rivers, a topic for another day.

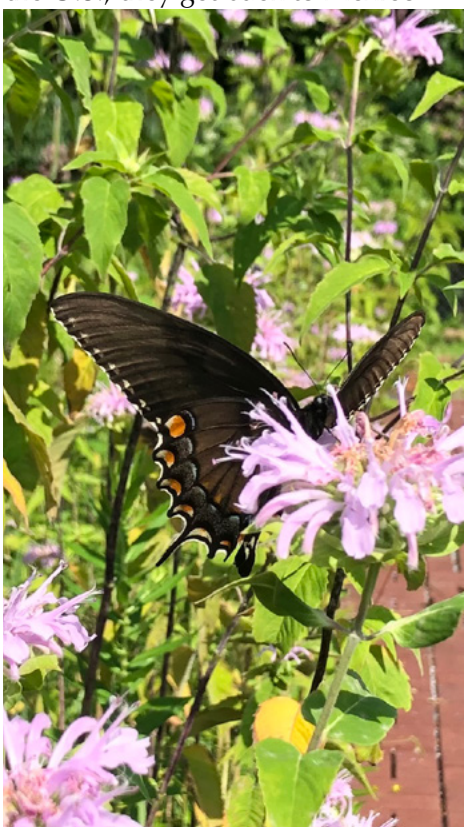
Over time, I learned that I needed to be feeding my soil and not my plants. I quit the synthetic fertilizers and started mulching heavily in the fall, with shredded hardwood bark mulch or leaf mold, slowly decaying leaf compost. I slowly started replacing nonnative plants with natives. My boxwood foundation plants became oakleaf hydrangeas (*Hydrangea quercifolia*) and native rhododendron (*Rhododendron maximum*). I got rid of the invasive silvergrass (*Miscanthus sinensis*) and added switch grass (*Panicum virgatum*) and little bluestem (*Schizacarium Schizachyrium scoparium*). It is still not 100% native and I have some native cultivars, but fewer every year.

Like many of you, I'm rebelling against nonnative plants because of the loss of biodiversity and the health of all the small things that share my garden. There are 45% fewer insects globally than there were in 1979. Since the mid-1990s, there has also been a dramatic decline in the monarch population, with worst-case estimates projecting that the current population is a mere 20% of what it was just a few decades ago. Bird populations have followed these declines, down 25% since 1979. Despite a rise since the banning of some of the most toxic pesticides, we still have a long way to go.

Insects pretty much are the unsung heroes in pest control, organic matter decomposition and pollination, which keeps our world beautifully vegetated. We need to not only accept insects, but actually invite them into our gardens.

The poster child for insect loss is the monarch butter y (*Danaus plexippus*) whose numbers plunged 84% to their lowest levels ever in 2014. That year they were found on less than 2 acres in their overwintering colonies in central Mexico, compared to 45 acres in 1996, because of the loss of their host plant. In 2020, they were listed as an endangered species on the International Union for Conservation of Nature Red List of Threatened Species.

Monarchs are specialists who need milkweed (*Asclepias* sp.) to survive as it is their only food source. As we develop land, or plow it under for corn and soybean rotations, valu-able habitat is lost. Even when they can survive here in the U.S., they get back to Mexico



Consider repurposing a birdbath in your yard for bees, butterflies and other pollinators. Just place a rock in the basin to give them a place to sit, or stick corks, sticks or other floating material in the water,

and find less shelter because of illegal logging of the Oyamel fir tree (*Abies religiosa*), their winter shelter.

This scenario is played out over and over with different species. The causes are many, some we still don't know, but loss of plant diversity and fragmentation are part of the problem, and something we can do something about. By planting native species in our residential yards, we can start to create pollinator pathways, connecting large natural areas to form a more continuous habitat for monarchs and other pollinators.

In 1998, I had a very different aesthetic. I planted an entire slope with the nonnative fountain grass. It was very clean and neat; modern. I was not thinking of providing food or habitat for insects or birds. Today I would specify one of our taller carexes, maybe prairie sedge (*Carex bicknellii*). I'd mix in some rattlesnake master (*Eryngium yuccifolium*), purple coneflower (*Echinacea purpurea*) and purple stemmed aster (*Aster puniceus*). Carex is a good larval host plant for the many grass skippers, so it would be full of their caterpillars, feeding many baby birds in spring. The perennials will provide nectar, and echinacea is a favorite of monarchs.

I call what I do now "Suburban Ecology." Landscape design in the suburbs, creating beautiful gar-dens that do no harm, and actually reverse some of the damage from development.

I recently had a client show me a picture of a very formal garden she wanted, but with all native plants. I was in! I created a somewhat formal garden close to the house, and a wilder garden beyond the oval lawn. That garden is at least 85% native plants, almost all straight species.

More and more clients are asking me to get rid of their front lawn. I still think the front yard should be less wild than the back, so I usually suggest removing 60 - 90% of the lawn so it has a "clue to care" look. (You don't want neighbors to think there is no maintenance going on there.) If you are managing well with that, in a few years you can replace the lawn with a good native ground cover, like Grey's sedge (*Carex grayi*), planted from flats of 2-inch plugs, something that was not readily available 25 years ago.

Truth be told, there is a lot of maintenance necessary for this type of landscape, at least for the first few years as the plants fill in. Until the garden is really dense, where you hardly see any soil or mulch, you will be weeding, weeding and weeding. But after the beds become pretty full, you can decide how much or little you want to manage it.

If you are OK with the most aggressive plants taking over [think obedient plant (*Physostegia virginiana*], sit back and enjoy. If, like me, you need a sense of design, you will need to continue to weed and edit for the life of the garden.

The woods where I've walked my dogs every morning for the past 25 years now have an understory of invasives like Japanese knotweed, burning bush and barberry. There were three large native azaleas years ago, this year there is only one. I worry that the woodlot is too far gone at this point.

My own garden went from a fairly formal garden to something a lot messier. It has a ton of color and a ton of life. Not everyone appreciates it but last fall, after being asked why I have not yet done my fall clean up, I put up a sign declaring it to be "native habitat for pollinators and birds, unmowed and pesticide free." I immediately started to receive compliments!

Today I'm proud to be part of a movement that is not just gardening for myself, but also for insects, birds and other pollinators. My garden documents my journey from trying to control nature, to letting nature take control. That's activism.

Carolle Huber is a landscape architect in Morristown, N.J. She gravitates toward residential design and sustainable projects with the goal of inspiring awe, while also doing right by the environment. She is also a member of the Wild Ones New Jersey Gateway Chapter.

The extraordinary adaptions of cacti

Tree cholia has attractive violet flowers followed by knobbly orange fruits that stay attached to the plant for many months.

By Carol T. English

Move, adapt or die is a concept I taught my young students years ago when I was teaching outdoor education. Many birds, some mammals, and a few insects have adapted to migrate to warmer climates as temperatures drop in the fall and food sources disappear. Plants cannot walk, swim or fly, and therefore they must adapt to their surroundings.

On Nov. 12, 1859, Charles Darwin published "On the Origin of Species by Means of Natural Selection." This book and the concepts Darwin proposed profoundly changed biology.

Darwin described two major points: first, that organisms on Earth are descendants of ancestral species that are different from species we see today. Second, he proposed the mechanism of this evolutionary process is called natural selection. The result of natural selection is evolutionary adaptation, or simply an accumulation of inherited characteristics that enhance an organism's ability to survive and reproduce in specific environments.

Cacti possess striking examples of evolutionary adaptations, allowing them to survive periods of extreme drought and extreme heat while still maintaining hydrated tissues. One of the oldest ancestral species of modern-day cactus are leafy plant species in the genus *Pereskia* that have leaves and spines, yet also possess adaptations for water storage.

It is believed cacti worked their way from South America to North America only in the last 5 million years, which is relatively recent on the geological time scale. Today there are at least 2,000 species of cacti in the world and 200 species in the United States.

Cacti survive and thrive in extremely dry, hot environments. Just how would you adapt and morph if you had to grow in very hot dry climates without being able to move? You would need to somehow create shade and store water. Spines on cacti are modified leaves. Most cacti gave up on leaves long ago since the large surface area of leaves transpires water continuously.

Now instead of the leaves being the main factory for photosynthesis, the stems take on the role of manufacturing sugars. Spines certainly do protect cacti from munching predators, yet more importantly, they provide shade for the cactus and reflect the sun's rays. This insulates the plant in both hot and cold tempera-

Clockwise from top left: Mountain cactus (*Pediocactus simpsonii*) is an extremely hardy and very variable ball cactus with the spines almost completely obscure the stems; Prickly pear cactus — or also known as nopal, opuntia and other names — is promoted for treating diabetes, high cholesterol, obesity and hangovers, according to Mayo Clinic. It's also touted for its antiviral and anti-inflammatory properties; Pincushion cactus is a member of a family called *Mammillaria*, which includes 250 species of cactus; *Opuntia* species are erect or spreading cacti, ranging from small low-growing shrubs to treelike specimens reaching 16 feet or more in height.

tures, and some cacti have antifreeze chemicals in their cells that prevent them from freezing during the winter months.

To store water and reduce water loss, cacti have evolved very thick waxy skin. Just like humans, all plants have to breathe and exchange gas in and out of their bodies. Plants breathe in carbon dioxide (CO_2) through pores on their skin called stomata. Stomata typically occur on the surface of leaves and open during the day so that CO_2 enters plants' systems and photosynthesis can immediately occur. In cacti, the stomata do not open when the sun is up; they wait and open at night thus preventing excessive water loss through the pores. This is called CAM, or crassulacean acid metabolism. The CO_2 is stored via a very complex chemical process and released during the day so photosynthesis can occur with closed stomata.

Most cacti stems have evolved into a swollen roundish shape, and this shape allows for water storage. Cacti roots typically grow laterally, and during rain events the roots grow and produce ephemeral rain-roots that quickly take up water and store it in the main swollen plant body. The water is stored in cells that contain a gooey substance called mucilage that clings to water molecules and prevents them from evaporating.

Next time you see a cactus, you can marvel at the astounding evolutionary adaptations that have occurred through time via the process of natural selection that Charles Darwin so eloquently described in 1859.

Carol English is a member of the Colorado Native Plant Society, San Luis Valley Chapter, and a former member of the Wild Ones Front Range (Colorado) Chapter.

Above: Color abounds on author Ann Autrey's native garden. Inset: Ann Autrey

Making your native garden thrive boils down to right plant, right place, right time

By Ann Autrey

For most people, their first venture into native plant gardening comes with a lot of questions. So it's important to find a nursery whose owners and staff view their role as educators.

Common questions usually center around what people can do to help the plants thrive in their gardens. The answers as to where is the best location to plant, or what you can do to improve soil, are usually based on a few basic factors: the plant species, the location of the planting and the time of year of the planting.

Native plants are truly amazing in how they have survived without any help from humans. Depending on where they are growing, these plants have evolved to thrive in the conditions that nature provides. These conditions can vary tremendously throughout the nation and can be quite harsh.

A bee nectars on woods rose (*Rosa woodsii*).

In Eastern Washington, for example, the amount of yearly rainfall and the soil composition are not ideal. The area receives less than 7 inches of annual precipitation and the soil is mostly sandy and rocky with very little organic matter. The hot, drought-filled summer keeps humidity levels low and evaporation rates high, leaving the soil very dry most of the growing season.

Thus, each native plant raised and sold has unique characteristics that need to be understood and respected for success in home landscaping. If you're not sure, ask or read field guides or plant profiles from websites or, and this is my favorite method, go for a hike to see where the native plant grows naturally.

You always gain so much knowledge from seeing native plants in their "neighborhood" — who are they living next door to, which direction they


Photo: Ann Autry

A bee nectars on globemallow. The genus *Sphaeralcea* contains about 50 plants primarily found in North America, and most have flowers in the orange to red range. The most drought tolerant member is the desert globemallow (*Sphaeralcea ambigua*).

are facing, how much sun they are getting and what kind of rocks and soil surround them. This helps gardeners gain a more complete picture of "who" the plant is and where it will live best in their yards.

To try and grow drought-adapted, sun-loving natives in a shady or riparian area goes against their genetics. So you really need to purchase the right plant for the right place in your yard.

But it's more than buying the right plant and planting it in the right place. You also need to plant at the right time. In the spring, most people look forward with excitement for the chance to start their gardens and watch them grow over the summer and fall.

But in some areas like Eastern Washington, it is best to plant in the fall, generally from late October through December. It can be hard to explain to a new native gardener that their hyperlocal, drought-tolerant plants probably will not survive the summer if planted in the spring. The reasons for this are the roots and winter precipitation. Native plants in the shrub-steppe have adapted to the environment with very long roots. Big sagebrush (*Artemisia tridenta*) can have a 30-foot taproot at maturity, bunchgrass roots can grow to 10 feet, and wildflower roots can reach up to 6 feet.

These roots grow during the winter months when 70% of the area's annual precipitation falls. Not much growth is seen above the ground, but below the ground the roots are growing straight down searching for groundwater and following the path of the rain and snowmelt as it moves downward through the soil column. If native plants are planted in late fall, then the plants can grow their roots, collect water from the soil and be ready for the extreme heat and drought of the summer.

For questions concerning the soil, it is better to plant your native plants in native soil and that depends upon where you live. Generally, you should leave the native soil alone and not add fertilizer or compost. Native plants in the Columbia River Basin like fast-draining, sandy, rocky soil that is slightly basic with little organic matter. In fact, many species are sensitive to increased nitrogen levels from fertilizer and compost and often will die because of added nitrogen. Also, using mulch, such as pine bark chips, can have a detrimental effect on the plants because the wood chips will acidify the soil and keep the crown of the plant moist, which is not preferred. Instead, inorganic rock (<½" diameter) or gravel mulch is preferred to help hold down the soil during windstorms and to minimize weed growth.

There is a free resource to help gardeners learn about the soil where they live. The "Web Soil Survey" website run by the Natural Resources Conservation Service, provides information on soil by address. Basic

A shrub-steppe, or a type of low-rainfall natural grassland. Arid shrub-steppes have sufficient moisture to support a cover of perennial grasses or shrubs, which distinguishes them from deserts.

soil data include percentages of sand, clay, silt and organic matter. Knowing the composition of the native soil can ease the worry of the gardener who thinks their garden soil needs remediation.

When summer temperatures are soaring above 90 degrees in arid areas and there has not been rain in weeks, it is easy to feel sorry for these plants because the environment can be so harsh. It is natural to think if you give the plants more water, they will survive the brutal dry heat. However, under such circumstances, native plants often die in home gardens because of over-watering, especially in the summer when they are not expecting water. This often happens when big sagebrush (*Artemisia tridentata*) is planted in the spring. During the winter, sagebrush grows two types of leaves, lobed and unlobed, to help facilitate the plant's rapid growth in the spring. As summer approaches, the unlobed leaves are shed to help the sagebrush conserve water through the summer heat and drought. Other plants go dormant after setting their seeds in the spring, and no longer are actively growing in the summer. To water them in the summer is often detrimental to the plant because the roots get waterlogged, causing the plant to die.

For your garden, think about the natural precipitation cycle of your region and let that guide you in when to plant, germinate or water native plants. Plan your native garden with plants that are best suited for the microclimate of your garden site.

The more we know about our native plants means better survival for the plant in a landscape setting. Instead of feeling sorry for them, we should admire them for their environmental adaptations, their perseverance and hardiness.

Finally, the best advice for people who want to start a native plant garden, no matter where you live, is to learn about the plants in your area. Join a local native plant group, visit a native plant nursery, or, best yet, visit local wildlife areas or a state park to view native plants in their natural environment.

Ann Autrey owns and operates a native plant nursery, Tapteal Native Plants, in West Richland, Washington and is a business member of the Wild Ones Columbia Basin (Washington) Seedling Chapter. She lives on a small farm with her husband and together they care for two horses, three goats, three sheep, 10 chickens, three dogs, and 50,000 honeybees. Horseback riding in the shrub-steppe is one joy that combines her love of horses and native plants.

SFE grant allows California students 'to connect through nature'

Students help plant native plants at the Hayward Twin Oaks Montessori School in Hayward, California.

Twin Oaks Montessori School, in Hayward, California, created a small native species garden in the school courtyard, thanks to a Wild Ones Seeds for Education (SFE) grant.

According to project coordinator Kara Desmond, a reading and math intervention specialist at the school, the students most enjoyed learning about and planting the native species. "They were very engaged," she said, with the students researching prospective species, helping with weeding and planting native plants.

Although the project was successful, they weren't able to follow up with the educational component and teach other students about the native species garden, Desmond wrote in their 2022 Seed for Education Project Report Form. But she hopes that will happen in the future, noting that the timeline was very spread out due to a variety of circumstances.

[The garden] "is a great community building exercise to connect through nature," she said. "After planting, these students were inspired to start a garden job in their classroom."

Students planted Little Sur manzanita (*Arctostaphylos edmundsii*), sea thrift (*Armeria*), *Sisyrinchium angustifolium* (Bermuda blue-eyed grass), bayberry (*Myrica*) and others. The main challenge with maintaining the garden, Desmond said, was getting the nasturtium uprooted and fixing the irrigation.

But Desmond said she also found it difficult to find native plant stock to fulfill their garden design.

"The varieties that were available at the local nursery were different than what I initially found online when searching for native species ideas for this region," she said. "It was challenging to keep them alive over the summer in the containers. We also had flooding which impacted the plants during the recent rains."

Despite some challenges, Desmond said the school plans to build on the garden and document its growth. And for other groups thinking of creating a native garden, one thing is important, she said. "Incorporate volunteers into your program."

Photos: Charles Allen

Retired professor Charles Allen started the Wild Ones Western Gulf Plain (Louisiana) Chapter and focuses his efforts on promoting native plants.

Keeping busy: Botanist promotes native plants

By Mackenzie Seymour

In the heart of Louisiana, a retired university professor keeps busy by maintaining a bed and breakfast focused on educating and promoting native plants. Surrounded by native woods, prairies and gardens, the bed and breakfast is specifically designed to attract butterflies, moths, hummingbirds and other local pollinators.

Allen Acres Bed and Breakfast is a 26-acre private nature preserve near Fort Polk, Louisiana, and adjacent to Kisatchie National Forest. At the center is Charles Allen, a botanist and plant taxonomist whose passion for native Louisiana plants developed into a unique career opportunity. He is also responsible for starting the new Wild Ones Western Gulf Plain Chapter.

Charles, now chapter president, said he first heard about Wild Ones after attending the 2004 North American Prairie Conference in Wisconsin, and joined as a member at large. In late 2021, he looked into starting a chapter nearby with the hope of spreading the word about native plants in west central Louisiana.

The new chapter, chartered in August 2022, also extends into southeast Texas and plans on hosting a number of Zoom presentations on native plant identification, edible plants and medicinal uses of native plants.

Charles said he became interested in plants as a child when his parents and grandparents taught him how to make a popgun from an elderberry trunk, a plunger from oak and ammo from a Chinaberry, and after watching his grandmother add what she called "sage" into their homemade sausage.

"Later," Charles explained, "I found out it was *Pycnanthemum albescens* (mountain mint), and still later found out from other researchers that it not only made the sausage smell good, but also kept *E. coli* from growing."

After growing up in the countryside and interacting with family members who integrated plants into their daily lives, Charles said "it was just natural that I would like plants." Charles went on to earn degrees in forestry and biology, including a Ph.D. in botany from the University of Louisiana at Lafayette. He taught at the University of Louisiana at Monroe and his research focused on the native grasses of Louisiana.

In 2001, Charles moved to Allen Acres after retiring from teaching to take a research associate position through Colorado State University's Environmental Management of Military Lands. He retired from the position in 2016.

"It was a difficult decision to retire, but it worked out in the long

Charles Allen's bed and breakfast is designed with native plants that attract birds and other pollinators.

Left: Allen learned that *Pycnanthemum albescens*, or mountain mint, helps keep *E. coli* from growing in homemade sausage. Below: The Cajun prairie, the tallgrass coastal prairie of Southwest Louisiana, once covered over 2.6 million acres.

run with my landing on Allen Acres in the country," he said. "I conducted rare plant surveys and helped to map the vegetation. In the summer, we would hire students from nearby universities and would teach them plant identification."

When Charles and his wife, Susan, first moved to Allen Acres, much of the land already contained native plants, but they decided to add more, including a section of big bluestem grasses and small areas of Cajun prairie. Each year, they survey the land to remove nonnative plants and overly aggressive native plants.

Allen Acres offers a wide variety of nature-related activities, including opportunities to take plant identification and edible plant classes, feed chickens and gather eggs, birdwatch, hike and take private tours with Charles.

"I hope to teach people how to identify and enjoy plants," Charles explained. "Many of the people in the classes are involved in wetland delineations (and work for consulting companies) and others are often retired professionals who want to learn about plants in their retirement years."

In addition to identifying native plants, Charles enjoys spending time identifying butterflies and moths found on the property. Allen Acres has hosted three national BugGuide Gatherings, and Charles has documented more than 1,000 moth species.

He also has authored several books and plans to write more.

"I first published 'Grasses of Louisiana' from my Ph.D. work, and then, 'Trees, Shrubs, and Woody Vines of Louisiana', 'Edible Plants of the Gulf South', 'Louisiana Wildflower Guide' and recently 'Gardening for Butterflies and Moths'," Charles said. "I hope to write and publish a basic botany book, native landscape plants, and something on moths."

Charles is also well known for sending out "Plant of the Day" emails that include details on growth habits, distribution and edible or medicinal uses.

"I also include a moth most days or sometimes another insect and a pun," Charles said. "I began with 200-300 people in the area, but it has expanded to more than 1,400 people."

When asked about his favorite native Louisiana plant, Charles said he could not choose just one.

"For flowering plants, I like mountain mint (*Pycnanthemum albescens*, or one of the other two species, *P. muticum* or *P. tenuifolium*) and for grasses, switchgrass (*Panicum virgatum*). I even helped build a house from this grass at Haskell University in Lawrence, Kansas."

Mackenzie Seymour is attending Illinois State University for a master's degree in biological sciences with an emphasis in neuroscience and physiology. She is researching how fluctuating climate change temperatures impact animal nervous systems.

Photos: Connie Deegan

Some campers seemed a bit surprised to see a garter snake during a hike.

Snakes: Reasonable possibilities

By Connie Deegan

A great habitat will support all kinds of animals, even some that may not be included on your personal "desired animal" list. Many people aren't concerned if they see an owl, rabbit, fox or turtle in their yard. But a snake is another story.

Snakes simply want what all other animals want: food, water, shelter and space. Providing good habitat for animals on your "OK list" can also provide the same for others that you don't wish to entice. Some habitat manipulation may discourage snakes, but it can come at a cost, and you may have to make some tough choices regarding the other animals that you enjoy in your yard.

Let's look at this differently. Isn't it time for moving the needle a bit more toward "awesome" when it comes to snakes? Many people have done just that. They have realized that short of turning their half-acre lot into a wildlife desert, they can provide good wildlife habitat — and embrace snakes.

You proclaim: "But some snakes are venomous! There is more at stake!" While your heebie-jeebies can sometimes be justified if you have children or pets, it's a tricky topic for educators, homeowners, and especially, snakes. Even if you choose to hire a professional to remove the snakes from your property, the snakes will likely return or be replaced by others, which can be frustrating for homeowners.

If you live in an area where venomous species thrive, education is the best way to deal with the issue. Plenty of people use this strategy and bites are non-existent because they take common sense precautions. Lists of venomous species in your area are easy to find along with pictures for identification online.

Consider poison ivy. If you are allergic to it, I bet you rarely get it because you recognize it in all of its variable presentations and you know what habitat it favors. When you have to work in it, you remain hyper-attentive, dress accordingly and wash up afterward. That is why you don't get it: You have educated yourself and taken precautions. This is the same process I suggest when observing snakes.

People who take this approach have learned what time of year they usually see snakes in their yard. They pay attention to what the temperatures are when they see snakes and how that changes as summer moves forward into hotter daytime temperatures. After days of hot, dry weather, they realize that a pump-driven, overflowing bird bath or a koi pond will call snakes and other wildlife to the water source. They remember that when they took the tarp off their garden last spring, they disturbed a few snakes, so they will anticipate them this year, too. They will no longer leave the garage

Left: An eastern rat snake caught during a summer nature camp while on a hike.
Right: Timber rattlesnakes may vary a little in their "base" color, but the pattern is always the same. They can be in the black, brown or yellow phase. This one is in the yellow phase.

door open because they know that a nice, cool, protected space may be pretty inviting to a snake or two should they stumble upon it.

A few months ago, I wanted to figure out a way to acquire some non-disputable, factual venomous snakebite research for northeast Tennessee where I live. (We have two venomous species here, the timber rattlesnake and the copperhead). I was able to track down the individual responsible for recording each time that our local healthcare system used antivenom for a snakebite. I asked for and received data from 2021 and 2022 regarding total snakebites where antivenom was administered. (2021 was still considered a pandemic year and people were historically spending even more time outdoors.) This data included the person's age, sex, location of the bite on the body, geographical location and often the snake species. It was also noted what the individual was doing at the time of the bite.

The 29 counties of the health network include the Appalachian Highlands: Northeast Tennessee, Southwest Virginia, Northwest North Carolina and Southeast Kentucky, including all 21 of their hospital sites. There were 17 recorded bites in the last two years in this area known for outdoor recreation, rural land and agriculture. The bite statistics were based on antivenom use, which is only used for moderate to severe envenomation. Therefore, there is a possibility that there may have been some minor snake bites without these symptoms that received simple local wound care and were not recorded.

Let us consider some of the bite scenarios: two people were bit while retrieving eggs in chicken coops. The snakes were there because chicks may have been available or possibly rodents that were attracted to chicken feed. This is considered an "attractive nuisance," which could have been snake proofed. A man was bit while feeding his dogs in the barn. It is highly likely rodents were attracted to the daily dog feeding area. Two people stepped on a snake barefoot. One walked back to his car in the dark! Understandably, the snakes reacted with a bite. One young child picked up a snake. We realize that children find almost any animal irresistible, but had they ever received "the snake talk" and were they told to never pick up any snake?

I did not "cherry pick" the list of examples. From the information collected, it was clear that the people involved played a role in the bite. These snakes were not aggressive until faced with potential harm. A bit of snake smarts would have worked well in all these instances.

People do coexist with snakes on their property and have no issues. Can you be one of them, utilizing a bit of forethought and education? Understand that the value of wildlife is not based on your opinion of it or mine. If it is here, it belongs here for reasons that you understand and reasons that you don't. We have allowed ourselves to dislike and/or harm certain animal species such as snakes, spiders, bats and sharks for a very long time. We can no longer afford to take links out of the chain. Fortunately, the tide is shifting, and folks are more willing to comprehend that an attitude of "us vs. them" no longer works. It is truly all connected. The links you don't like are just as important as the links you do.

Connie Deegan is a member of the Wild Ones Appalachian Highlands (Virginia and Tennessee) Chapter, and park naturalist for the Johnson City Parks and Recreation Department in Johnson City, Tennessee.

Spiny pollen from sunflower plants reduces common bee parasite

A bumblebee feasting on spiny sunflower pollen.

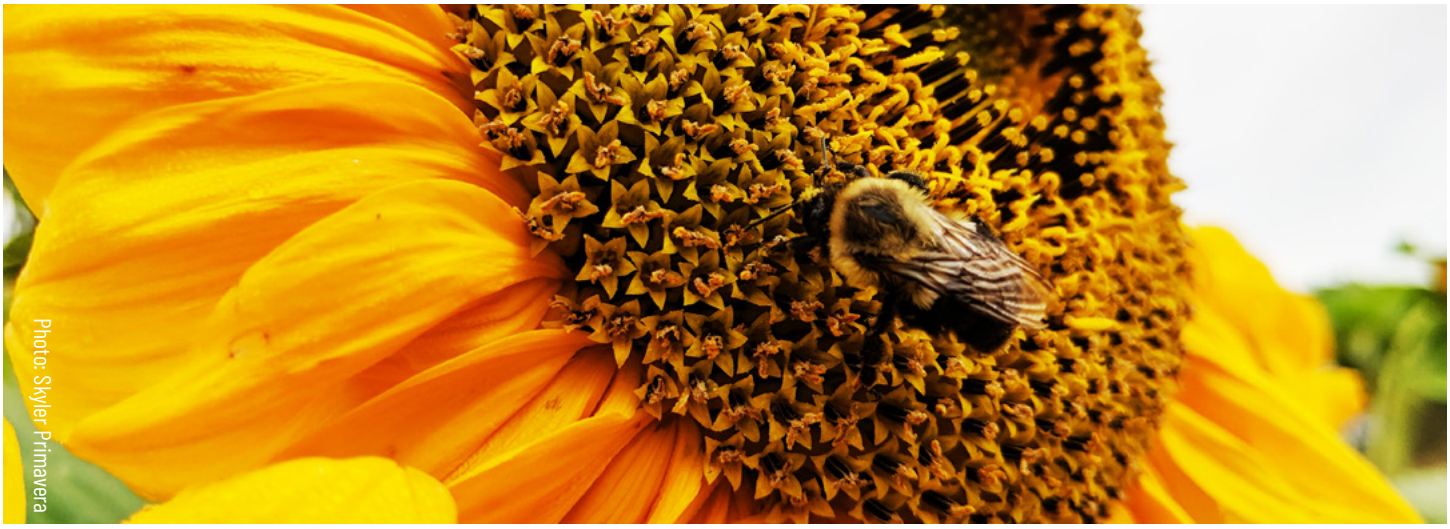


Photo: Skyler Primavera

By Daegan Miller

It's the spines. This is the conclusion of two new papers, led by researchers at the University of Massachusetts Amherst, showing that the spiny pollen from plants in the sunflower family (*Asteraceae*) both reduces infection of a common bee parasite by 81–94% and markedly increases the production of queen bumble bees.

The research, appearing in Functional Ecology and Proceedings of the Royal Society B: Biological Sciences, provides much-needed food for thought in one of the most vexing problems facing biologists and ecologists: how to reverse the great die-off of the world's pollinators.

Insect pollinators — those flying, buzzing, flitting bugs that help fertilize everything from blueberries to coffee — contribute upwards of $200 billion in annual ecosystem services worldwide.

"We depend on them for diverse, healthy, nutritious diets," says Laura Figueroa, assistant professor of environmental conservation at UMass Amherst and lead author of the paper on pollen spines. Many pollinators, however, are suffering an unprecedented decline due to the widespread use of pesticides, habitat loss and other causes, and scientists around the world are working diligently to figure out how to fight the apocalypse.

One of the big breakthroughs in helping pollinators, and especially bees, is the discovery that certain species of flowers can help pollinators resist disease infections, and that sunflowers are particularly effective at combatting a widespread pathogen that lives in a bee's gut, called *Crithidia bombi*.

But until now, no one knew why sunflowers were so effective at staving off *C. bombi*, or if other flowers in the sunflower family had the same pathogen-fighting powers.

Physics, not chemistry

"We know that the health benefits from some foods come from the specific chemicals in them," says Figueroa. "But we also know that some foods are healthy because of their physical structure — think of foods high in fiber."

To discover how sunflowers help bumblebees withstand *C. bombi*, Figueroa and her team devised an experiment that hinged on separating out the pollen's spiny outer shell from the chemical metabolites in the pollen's core. They then mixed the spiny sunflower shell, with the chemistry removed, into the pollen fed to one batch of bees, while another batch was fed wildflower pollen sprinkled with sunflower metabolites and no sunflower shells.

"We discovered that the bees that ate the spiny sunflower pollen shells had the same response as bees feeding on whole sunflower pollen, and that they suffered 87% lower infections from *C. bombi* than bees feeding on the sunflower metabolites," says Figueroa.

But that's not all. Bees fed pollen from ragweed, cocklebur, dandelion and dog fennel — all members of the sunflower family and with similarly spiny pollen shells — had low rates of *C. bombi* infection similar to the bees who ate sunflower pollen — which raises the possibility that such disease-fighting medicinal effects may be common to plants in the sunflower family.

One of the experimental sites, on a western Massachusetts farm.

Photo: Rosemary Malfi

Food fit for a queen

One of the counter-intuitive aspects of the new research is that sunflower pollen is not in itself all that nutritious, because sunflower pollen is low in protein. And while the pollen might be great at protecting bumblebees from a gut pathogen like *C. bombi*, it would be of little use to feed sunflowers and their relatives to bumblebees if malnutrition resulted.

"It's no good curing the common cold if you starve the patient," says Lynn Adler, professor of biology at UMass Amherst and senior author of the paper looking at sunflower pollen and queen bee production. "We need to look at the community level, as well as what's happening in bees' guts, to know how to help them respond to stressful environments."

One way to gauge a colony's health is by the number of queens it produces, because queens are the way a bumble bee colony passes on its genes to the next generation. And queens aren't born, they're grown. Colonies use the food resources they've collected to turn a small number of bee larvae into daughter queens. Once the cold weather arrives, all the workers and the old queen will die. The only bees that survive are the new daughter queens. If they survive the winter, they will produce an entirely new colony in the spring. The more queens a colony produces, the higher the likelihood that a colony's genes be passed down through many generations of bees.

To test the impact of sunflowers on colony health, Adler and her team placed commercial colonies of bumblebees on 20 different farms in Western Massachusetts that grew varying amounts of sunflowers. Over the course of several weeks, the team sampled the pathogens collecting in their bees' guts, weighed the colonies to determine whether or not they were thriving and counted the number of daughter queens.

"What we found is that infection decreased with increasing sunflower abundance, and perhaps more importantly, queen bee production increased by 30% for every order of magnitude increase in the availability of sunflower pollen," says the paper's lead author Rosemary Malfi, who completed the research as part of her postdoctoral work in Adler's lab.

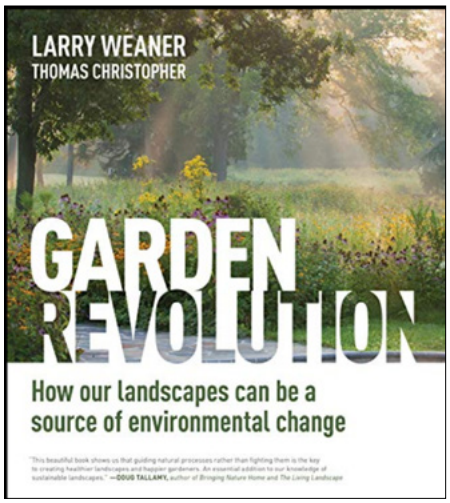
Although there's more research to be done into exactly why sunflower pollen benefits queen bees — perhaps bumblebees have more energy for reproduction if they're not fighting disease, or maybe *C. bombi* impairs learning and foraging, so that reducing infection increases the bees' ability to find food — Adler says that "it's really exciting to show that sunflowers not only reduce disease, but positively affect reproduction."

Next steps

Figueroa and Adler are quick to point out that this research, which was supported by the National Science Foundation and Department of Agriculture, does not represent a solution to the insect apocalypse. This research was conducted using just one common species of bumblebees, which is not endangered. More research needs to be done into how *Asteraceae* pollen affects other bumblebee species that are threatened. Nor is it known exactly how the spiny *Asteraceae* pollen protects against *C. bombi*. But these initial results are encouraging and indicate that the sunflower family may very well play a role in maintaining pollinator health, and, ultimately, the health of our own food systems.

Daegan Miller is the associate news editor for science at the University of Massachusetts Amherst.

Book Review



At a glance

Title: Garden Revolution: How our landscapes can be a source of environmental change

Author: Larry Weaner and Thomas Christopher

Published: May 18, 2016

Cost: $26-$40 hardcover

Stars: ★★★★☆

By Morgan Vogt

Larry Weaner and Thomas Christopher's "Garden Revolution: How our landscapes can be a source of environmental change" is a how-to guide for creating native landscapes, rather than what I had thought would be an analysis of how ecological gardening helps the environment. They do discuss the benefits of planting native, but this book is for people who are already convinced and want a detailed plan on how to make it happen.

Weaner provides an interesting look at his journey to becoming what he refers to as a "garden ecologist." I identified completely with his lack of gardening experience as a child (we both had yards with mainly grass and one tree) and was surprised at how he fell into the world of landscaping by chance when he needed a summer job after high school. During the 1970s, he worked for various companies that helped him see landscaping and plants from a different perspective, and then in 1981, he started his own landscape design company. His lack of traditional design training and his exposure to radical new takes on land management helped shape his unique views on ecological garden design.

I loved the thought process behind Weaner's approach to native gardening. First and foremost is creating a sense of discovery in the garden – allowing the garden to change and evolve rather than trying to maintain strict control. Second is what is known as "initial floristic composition" – letting what the land is predisposed to support guide you when designing your garden. And finally, using brains rather than brawn when planting and maintaining your garden.

Most of the book focuses on design and field work. This is what I found to be the most helpful, and most frustrating, part of the book. Weaner delves into analyzing your site based on the ecology, creating a plan based on what you find, and developing a customized plant list. There is so much information here that for someone new (or even someone experienced wanting to learn more), it can be overwhelming. Weaner does push starting small to not overwhelm yourself and to get used to the process, but even in that case, it still feels like you'd need outside help to figure it out.

However, I did start to feel more optimistic when going through the field portion of the book. There is some great information on preparing, planting and managing your site, with details on different methods. It's organized well, so I was able to focus on the processes that made the most sense for me. Additionally, Weaner provides information on creating meadows/prairies, shrublands and woodlands, which again allows you to focus on the habitats that fit with your landscape. These sections felt more manageable, and Weaner provides many examples to help jumpstart your plans.

There is a tremendous amount of valuable information in this book, along with beautiful photographs that truly inspired me to think about my landscape in new ways. And while I can appreciate Weaner's "brains over brawn" approach to focusing on planning so you have less work later, I think you need to be willing to just jump in and learn. This is a great guide, provided you let it inspire you rather than overwhelm you.

Morgan Vogt is a member of the Wild Ones Greater Kane County Chapter. Morgan wasn't interested in gardening until 2020 when she moved to The Windings, a community that is devoted to protecting and restoring the local ecology. She is now an avid gardener and advocate for native planting.

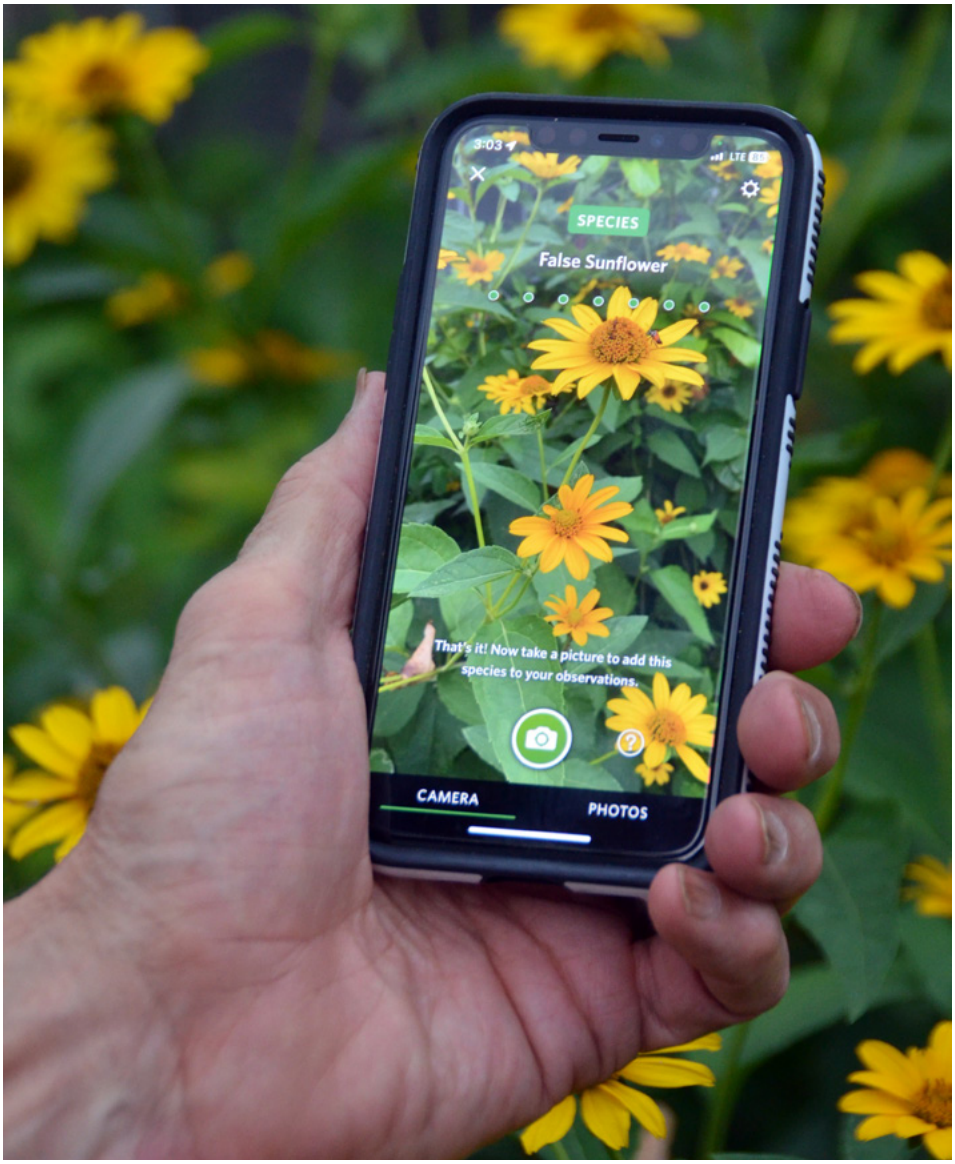
All photos by Janet Allen

Community science: The time is now

By Janet Allen

It wasn't totally unexpected. After all, I had witnessed the same behavior last year. But it still amazed me. What was it? A monarch butterfly spending a half hour using the dead wild ageratum and boneset (*Eupatorium perfoliatum*) plants I had put out as bait for the Monarch Rx community science project. Knowing that this generation of monarch butterflies lives just a few weeks, it's striking that they spend this much time on dead plants.

Besides feeling privileged to witness this behavior, it was gratifying to know that my observations would help scientists learn more about this phenomenon. [See Nancy Lawson's article "Monarch Rx" in the Spring 2023 issue of the Wild Ones Journal for more information.]



Smartphone apps are a good — and easy — way to identify plants and birds.

Why community science?

Individual people over the centuries have documented plant and animal lifecycle events (called "phenophases") as well as other traits and behaviors, but the largescale collection of data by lots of people — community science — has greater impact.

The North American Bird Phenology Program, started in 1880, was the first community science project. It established a network of volunteers to collect bird migration data, and by its conclusion they had created 6 million cards documenting the migrations of 800 bird species from the 1880s through the 1970s.

The Audubon Society's Christmas Bird Count, begun in 1900, is the longest running community science project and continues to collect valuable information that guides conservation efforts.

These 19th and 20th century observations are priceless as we compare current populations with past populations to assess the impact of changing conditions on earth. Our continuing observations on a wide variety of natural events will be just as important to future conservation efforts.

Personal benefits

The most significant benefit to individual community scientists is that it sharpens our powers of observation. We just start to notice things more!

And everyone benefits from the information collected, not just scientists. For example, anyone can use the Migration Dashboard, based on eBird and Journey North contributions, to show which birds will be migrating each night. We can also track our own observations. For example, I can view the 23 years of my own FeederWatch observations on its website.

We can all participate

Some of these projects take us out and about, but many can be done right in our own yards, and some even just on our computer. Everyone can find a project that fits their needs and preferences, especially children.

Community science is a powerful way for children to learn about *real* science. Doing science is much

more meaningful than just reading about science in a textbook. In fact, many community science projects have materials specifically developed for educators and children.

Even more important, community scientists help develop a sense of stewardship of the natural world. Children's connection with nature has diminished in today's screen-filled indoor world, but it's a trait that will be ever more important to their future.

Some tips

• Learn the rules (called "protocols"). To be useful, observations must adhere to the project's guidelines. For most projects, these rules are straightforward, but it's important to first spend some time learning how to properly collect and submit your observations.

• Consider your interests and capabilities. If the project's subject isn't something you care about or if it requires more time, travel or effort than you can handle, you'll soon lose interest.

• Don't overdo it. You'll probably find many projects that appeal to you and many options within projects. Choose just one or two projects to start with. Being a community scientist can and should be enjoyable, not a burden. The goal is to become a long-term contributor!

• Schedule reminders. In our busy lives, even with the best of intentions, we might forget to make observations. Adding it to your reminders list can help you make regular contributions.

Finding your project

A list of projects that would likely appeal to many Wild Ones members can be found online at https://wildones.org/wp-content/images/CommunityScienceProjects2023.pdf, but many hundreds more are described at SciStarter.org and Zooniverse. They include not just nature topics, but also projects related to astronomy, human health, social science and more. You can filter the list to find the ones most suitable for your interests and abilities. SciStarter even has a free, self-guided "Foundations of Citizen Science" tutorial on its website.

A boy checks out birds and other sights with the help of binoculars.

Identification aids

I first participated in Project FeederWatch in 2000 as a novice birder, so for the first few years, I spent a lot of "quality time" with my bird ID books! I'm grateful that we now have many free mobile apps that help quickly identify plants and animals. Learning to use these apps will repay you many-fold, aiding your community science efforts while also connecting with plants and animals on a first name basis.

The time is now

Every year we fail to document the status of the natural world we lose information forever. This knowledge will be increasingly critical as we and future generations navigate the many threats to life on earth – threats that have begun to feel very real in 2023's record-setting summer. In our rapidly changing world, the more information we collect, the better we will be able to meet the challenges ahead.

As Budburst says: "Nature needs you. Now more than ever."

Janet Allen is president and co-founder of the Wild Ones Habitat Gardening in Central New York Chapter and a speaker on native gardening. Read her website at http://www.habitatgarden.org/ .

The Xerces Society's definition

Community science — sometimes referred to as participatory science or citizen science — is a form of research that provides everyone — regardless of their background — an opportunity to contribute meaningful data to further our scientific understanding of key issues. By engaging community members, researchers can collect a larger amount of data, and often span more geographic regions, in a shorter amount of time. In turn, data collected informs larger conservation efforts. It's also a great opportunity for participants to learn more about species that interest them.

Photo: Barbara A. Schmitz

The lazy mom's guide to saving the planet

Place cardboard in the fall on areas of your grass that you want to kill.

By Liz Martinez

One of the best things you can do for the environment is to rip out all your turf grass and replace it with native plants. If that seems completely overwhelming and thoroughly unfeasible, that's OK. The second-best thing you can do for the environment is: something. With that in mind, I present the lazy mom's guide to saving the planet.

You may be thinking to yourself, isn't my lawn just one big plant? Surely that is already good for the environment. The reality, however, is that not all plants are created equally. Much like how your child will flat out refuse to eat escargot or squid ink gnocchi, the beneficial insects that are the backbone of a healthy ecosystem are not interested in snacking on plants from other parts of the world. They want the name brand mac and cheese of native plants!

The more native plants in your yard, and the less useless turf grass, the better. Right now, the USA has 40 million acres of turf grass. Even if you can only handle removing a small portion of lawn, that is a huge step in the right direction. Imagine if everyone took out just 10% of their turf grass and put in native plants; that would create 4 million acres of eco-friendly space, which is almost twice the size of Yellowstone National Park! A little can go a long way, so let's get started:

Step one: Select a location. Maybe you have a tree in your yard that you could plant something around. Do you have a scraggly patch in the lawn that never looks that great anyway? Or maybe there's an area beside your house or a strip along the driveway that could stand to lose some lawn.

Step two: Adios grass. You don't necessarily need to nuke your lawn with chemicals to kill the grass or break your back digging it out. Cardboard will usually do the trick. If you have moving boxes still in the basement that you've been meaning to get rid of, or a borderline troubling Amazon addiction, you're halfway there! Put a couple layers of cardboard directly on top of the grass in your chosen location.

Step three: Talk dirt(y) to me. You can buy topsoil and/or compost at any garden center. Or, for you budget-conscious moms, check with your city or county parks departments to see if they offer it for free. Carondelet Park in St. Louis City, for example, has a giant pile of compost free to anyone with a shovel and some containers. Grab some bins and a friend (soil is heavy) and dump a good 6 inches on the cardboard. Tada! You have a new garden bed.

But note, when using straight compost to create your planting area, put it down in the fall and don't plant anything until spring. Compost gets hot when it's breaking down and needs some alone time so it doesn't burn your baby plants.

Step four: Flower power. There are great native plants for every conceivable garden situation in every ecoregion. If you have a sunny patch and love butterflies and live in the Midwest, for instance, put in some milkweed like common milkweed (*Asclepias syriaca*) and butterfly weed (*Asclepias tuberosa*). Both are easy to grow from seed.

If your area is a little shadier and you live in the Eastern U.S., plant

Photo: Liz Martinez

oto: Liz Martinez

Left: Place 6" of topsoil on your cardboard to create a new flower bed. Below: Butterfly weed (*Asclepias tuberosa*) is easy to grow from seed and a monarch magnet.

NEW to NATIVES

purple coneflower (*Echinacea purpurea*), wild hydrangea (*Hydrangea arborescens*) or Indian pink (*Spigelia marylandica*). The Missouri Prairie Foundation's Grownative.org has tons of sample garden layouts and Top 10 lists if you need more ideas. And Wild Ones does, too, with its Native Garden Designs for the ecoregions of Boston, Massachusetts; Chattanooga, Tennessee; Chicago, Illinois; Denver/Front Range, Colorado; Columbia River Basin, Washington; Grand Rapids, Michigan; Greensboro, North Carolina; Lafayette, Louisiana; Las Cruces, New Mexico; Milwaukee, Wisconsin, Minneapolis, Minnesota; Philadelphia, Pennsylvania; Portland, Oregon; Princeton, New Jersey; St. Louis, Missouri; Tallahassee, Florida; Toledo, Ohio; Tucson, Arizona; and Washington, D.C.

But since this is the lazy mom's guide, here are some of the best in the St. Louis, Missouri area as these two All Star natives will work anywhere (sun or shade, dry or damp) and are so easy to grow they will laugh at your brown thumb: orange coneflower (*Rudbeckia fulgida var. umbrosa*) and rose turtlehead (*Chelone obliqua*).

And that's it! In four easy steps you can increase the amount of usable habitat for wildlife and join in with thousands of other ordinary heroes making sure we hand a livable planet down to our kids and grandkids.

Liz Martinez is a member of the Wild Ones St. Louis (Missouri) Chapter, a student in the horticulture program at the St. Louis Community College – Meramec and the mother of two small bug enthusiasts.

Partners for Native Landscaping united

By Scott Woodbury

In 2011, five organizations in the St. Louis area came together as Partners for Native Landscaping (PNL). Wild Ones St. Louis (Missouri) Chapter, currently the largest in the country, was providing native plant grants to nonprofits and hosting monthly gatherings in native plant gardens. St. Louis Audubon Society was developing Bring Conservation Home, a program that provides on-site ecological landscaping consultation and certification to land stewards in the St. Louis metro region. The Missouri Department of Conservation provided technical assistance to communities and partner organizations to help citizens protect fish, forests and wildlife. They also promoted conservation-friendly development practices in urban settings. Shaw Nature Reserve developed the Native Plant School, a series of hands-on classes in the Whitmire Wildflower Garden, to educate homeowners and professionals. And Grow Native!, a program of the Missouri Prairie Foundation, was developing a network of classes, native plant fairs and workshops across Missouri, to increase conservation awareness of native plants and their effective use in urban, suburban and rural developed landscapes.

In 2023, PNL added a native plant fair and sale to its offerings.

The first five organizations were soon joined by the Metropolitan St. Louis Sewer District that was developing its green-infrastructure stormwater initiative, Project Clear, which offers grants for rain gardens. Then came BiodiverseCity, a community networking initiative of the Missouri Botanical Garden, to promote, protect and plan for biodiversity throughout the greater St. Louis region. And lastly, St. Louis Community College-Horticulture, which was developing native landscapes on campus and training the next crop of professional horticulturists. Today, these eight organizations and their combined activities account for most of the native landscaping outreach in the St. Louis area. Their programs and events are full of enthusiastic audiences.

For years the annual PNL event was a day-long in-person workshop with a capacity of about 250. It was mostly attended by "the choir." In 2019, Doug Tallamy was the keynote speaker who made us all proud with this statement: "You know I've talked

Partners for Native Landscaping (PNL) gives presentations to educate people about the importance of native plants.

all over the country. There are groups doing good things [in other states] – but St. Louis is leading the way! You have so many groups and programs – some doing this work longer than me – using native plants to restore ecosystem function to human-dominated landscapes. That's what it's all about, and you guys are leaders!"

Then came COVID: as happened for many, the PNL workshop went virtual. The St. Louis County Library, one of the largest circulating libraries in the country with branches across the St. Louis area, became a terrific collaborator. In late winter of the past four years, PNL has provided about 10 virtual presentations through the library's system. These are free and advertised to the hundreds of thousands who access the library. Hundreds of people can view each live presentation, plus each is recorded and made available on the library's YouTube channel. With more than 5,000 live and recorded views each year, PNL is now reaching far beyond "the choir."

In 2023, PNL became a three-part event: an in-person workshop held at Powder Valley Conservation Nature Center, a plant fair and sale held at Beyond Housing, a local community development center, and the virtual speaker series, hosted by the St. Louis County Library.

The development and success of PNL has been both the cause and effect of the increasing interest in native landscaping in the St. Louis region. Native plant nurseries are selling out of plants…by early May. Classes and programs from partner organizations are always full. Large institutions and organizations are creating native landscapes in their "front yard." There are dozens of small businesses that design, install and maintain native landscapes across the region, and many nurseries producing native plants and seed.

Over the past five years, 1,000 new rain gardens have been built with municipal and state funding. There are 400+ Wild Ones St. Louis and 50+ Wild Ones St. Charles Area memberships, 400+ registered Homegrown National Park native gardens, 70+ Grow Native! professional members, and 200+ certified Bring Conservation Home gardens.

PNL has demonstrated the synergistic effect of partnering with organizations to deliver our shared missions.

Scott Woodbury founded the St. Louis Chapter of Wild Ones 25 years ago. He developed the Whitmire Wildflower Garden for 30 years from its inception in 1991. He currently teaches Native Landscaping Practices at St. Louis Community College and owns Cacalia Design and Wilding, a consulting and landscape design business in St. Louis.

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Left: Chris Helzer takes a photo at Lincoln Creek Prairie as part of his square meter project. Below, left to right: Cope's gray tree frog (*Hyla chrysoscelis*) at Lincoln Creek Prairie; Big bluestem (*Andropogon gerardii*) flowers and anthers (*Andropogon gerardii*) at Lincoln Creek Prairie taken as part of the Square Meter Project; *Andrena (Trachandrena) quintilus* bee, a specialist on lead plant (*Amorpha canescens*) at Lincoln Creek Prairie.

Learning while photographing a single square meter of prairie

By Chris Helzer

In January 2018, I began a year-long project to photograph all the beauty and diversity I could find within a single square meter of prairie. That tiny plot is located in a narrow strip of restored grassland at Lincoln Creek Prairie in Aurora, Nebraska. The prairie was restored by Prairie Plains Resource Institute in the early 1980s and contains a nice diversity of prairie plants.

My initial motivation for this project was to draw awareness and appreciation to prairie communities. I believe prairies suffer from a massive lack of attention and respect from the general public, which provides a major handicap to those of us advocating for their conservation. That disinterest is true even in a state like Nebraska, where about half of the state is still grassland — including the spectacular Nebraska Sandhills — and where almost no one lives more than an hour's drive from a prairie.

While I primarily started the project as a way to help others discover prairies and their beauty, the journey also affected me personally, in ways I hadn't fully anticipated. I have always been drawn to photograph flowers, bugs and other tiny creatures, but I usually do so while wandering broadly through prai-

ries, looking for subjects that draw my attention. Despite more than 25 years of studying and exploring prairies, forcing myself to sit down and really focus my eyes and camera within a tiny square space was truly inspirational.

When I first came up with this project idea, I figured I would get frustrated by sitting in one place for long periods of time and missing out on potential photo opportunities elsewhere. After all, beautiful photography light is fleeting and precious. In actuality, the opposite happened. I found myself wandering with my camera through gorgeous landscapes of prairies, feeling distracted and unsettled, wondering what was happening back in my little plot. The only frustration I felt while at my plot came whenever a butterfly or other small creature left the square before I could photograph it.

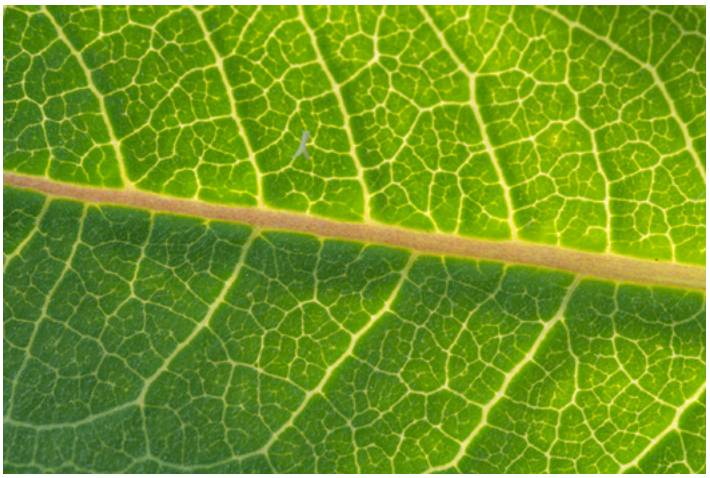
I honestly don't think I ever visited my plot without seeing something I hadn't seen there before. The number of species I found was astounding, even as someone who studies and touts the diversity of prairies. I could put together an impressive photo portfolio consisting only of the various fly species I photographed.

I also became engrossed by the growth and survival of individual plants and felt emotionally affected when all four stiff sunflower blossoms in my plot were attacked by swarms of tiny beetles as soon as they opened. Most of all, the rhythms and patterns of prairie life became more apparent to me than they ever had been before. I became intently aware of what was blooming, what was about to bloom, which tiny creatures had newly emerged on the scene, and who was eating whom as a result.

By the end of the year-long project, I photographed 113 different species of plants and animals within my little square meter plot. That includes 15 plant species, 22 different flies, 18 beetles, and 14 bees. I'm happy with those numbers, but they tell an incomplete story about my experience.

Apart from the impressive biological diversity I observed, I was also stirred by how much beauty I discovered within the confines of

A Chinese praying mantis (*Tenodera sinensis*).



A common milkweed (*Asclepias syriaca*) leaf backlit at Lincoln Creek Prairie.

A pearl crescent butterfly (*Phyciodes tharos*).

A beetle on a Maximillian sunflower (*Helianthus maximiliani*).

a square meter of prairie. I photographed a lot of flowers from a lot of angles, but I also found myself admiring the graceful downward curve of Maximilian sunflower leaves, the colorful feathery anthers of grasses, and the glowing backlit patterns of leaf veins. The realm of what deserved my attention as a photographer got much bigger, despite working within a tiny area.

Looking back, I wish I'd started the project with that perspective. During April and May, I was still trying to decide what the project was going to be and whether it was worthwhile. No flowers were blooming within the plot yet, and I spent less time there than I should have. If I could start again with what I know now, I'm sure I would have visited more during that spring period and seen much more than I did the first time.

I was already knowledgeable and passionate about prairies before starting this project, but I was still deeply moved and inspired by what I found within a single square meter. Far from the drab patches of grass many people imagine them to be, prairies are vibrant and dynamic ecological communities, consisting of complex webs of interacting organisms. There is abundant beauty in prairies, and while you might have to look closely to see some aspects of it, you also don't have to go far to find it. I hope this project helps inspire people to explore prairies near them, and to help ensure that prairie ecosystems remain diverse and healthy well into the future.

Chris Helzer is the Nature Conservancy's director of science in Nebraska and author of two books published by the University of Iowa Press: "The Ecology and Management of Prairies in the Central United States" and "Hidden Prairie: Photographing Life in One Square Meter."

Loess Hills 'Hidden Wild' Project

By Ruth M. Rose

Chris Helzer has been a great inspiration and guide in preserving and restoring the wild. When I first read his book "Hidden Prairie," I was so excited about starting a Hidden Wild Community Science Project of my own size, in my own space. You can do this, too! From a planter to a prairie, find your hidden wild!

I watched a Hidden Prairie video to see Chris' incredible photos and get an overview of his project, and then headed out last March 1 to mark a spot of remnant prairie next to Stone State Park that is easily accessible by road.

I put an old mailbox on a post, and included a notebook, pencils, a copy of "Hidden Prairie" and two old sling chairs. I invited anyone who I saw and our members from the Wild Ones Loess Hills Chapter to stop by any time and contribute by observing the plants and wildlife they saw. I asked that they record them with photographs and notes. The photographs are sent by text or email. I am keeping them in a file to put on the chapter's website at the end of four complete seasons of observation.

Recently, four Wild Ones Loess Hills members measured and set up Site #2 of three planned sites. This site, called The Flower House, is located in a residential area and was planted with native plants in spring of 2021.

We marked the area with painted rocks, inventoried the plants and wild things we saw that day, and now we have another fun and exciting site to visit with friends, family and neighbors who are all getting interested in learning about native plants and wild visitors. We will use the same format, in which anyone who wishes can list their name, date, time spent and observations, and send their photos to be recorded for the year-end report.

Helzer said something to me at the Loess Hills Prairie Seminar that really resonated. He asked: "How do we reach people who are not immersed in prairie or wild areas, and are too afraid of a box elder beetle to learn to love and preserve the plants and wildlife that these areas support?"

Chris, that is the mission of Wild Ones and organizations like Homegrown National Park. We can follow in your footsteps and start Wild observation projects — from a native planter to a pocket prairie-inspired by "Hidden Prairie" — one space at a time!

Ruth Rose is a retired registered nurse and a "beginning" Wild Ones member who publishes the Wild Wednesday newsletter for the Wild Ones Loess Hills Chapter. She is also chapter co-president.

From left, Dotty Zales, Ruth Rose, Lilly Metzger and Dawn Snyder show off a packet with information on the Wild Ones Loess Hills (Iowa) Chapter's Hidden Wild project.

Mark Your Calendar

For local events, check out the Events Calendar on our website Upcoming Events - Wild Ones: Native Plants, Natural Landscapes

SEPTEMBER

Sept 9

Lorrie Otto's Birthday

Celebrate this honored environmentalist, speaker, author and inspiration for Wild Ones with a donation in her honor.

Sept. 16

World Cleanup Day

Sept. 23

National Public Lands Day

Also a fee-free day, so head out to enjoy your nearby federally managed public lands!

OCTOBER

Oct. 2

World Habitat Day

Oct. 8

Urban Wildlife Conservation Day

Oct. 9

Indigenous Peoples' Day

Indigenous Peoples' Day celebrates, recognizes and honors the beautiful traditions and cultures of the Indigenous People, not just in America, but around the world. Their way of life and culture carries wisdom and valuable insights into how we can live life more sustainably.

Oct. 8-15

National Wildlife Refuge Week

Oct. 12, 6 p.m. CST

Wild Ones Webinar with Heather Holm – Creating and Managing Landscapes for Native Bees

Discover the world of native bees in eastern North America with Heather Holm. Learn about nesting habits, life cycles and pollination of native plants. Uncover tips for managing landscapes to boost bee diversity and effective pollination. Think like a bee for successful habitat creation. Register at https://wildones.org/webinar-heather-holm-oct-2023/

Oct. 23

Wild Ones Board of Directors Meeting

All Wild Ones members are invited to attend virtual national board meetings.

Oct. 24

International Day of Climate Action

Read about climate resilient landscaping.

CHAPTER ANNIVERSARIES

Includes anniversaries between May–July

Chapter	Years
Milwaukee-North, Wisconsin	44
Columbus, Ohio	29
Rock River Valley, Illinois	29
Ann Arbor, Michigan	27
Door Peninsula, Wisconsin	22
Habitat Gardening in Central New York, New York	19
Mountain Laurel, Connecticut	17
Tennessee Valley, Tennessee	11
St. Charles Area, Missouri	4
Carolina Triangle, North Carolina	1
Central North Carolina, North Carolina	1

NEW CHARTERED CHAPTERS

Chapters are the heart of the Wild Ones community. Chapters deliver regionally relevant resources and peer support to their members and local communities.

Chequamegon Bay, Wisconsin
Founded July 11, 2022; Chartered May 3, 2023

Greater Baltimore, Maryland
Founded May 20, 2022; Chartered June 26, 2023

Greater Richmond Virginia, Virginia
Founded Feb. 11, 2022; Chartered July 11, 2023

Pennsylvania Ridge & Valley, Pennsylvania
Founded May 16, 2022; Chartered May 22, 2023

NEW SEEDLING CHAPTERS

Seedlings are young Wild Ones chapters in new cities and new states. Seedlings are working toward full chapter status and need to grow their membership.

Hocking Hills, Ohio
Founded May 15, 2023

Greater Indianapolis, Indiana
Founded May 18, 2023

North Alabama, Alabama
Founded May 30, 2023

South Central Indiana, Indiana
Founded June 5, 2023

Northern Utah, Utah
Founded July17, 2023

NEW AFFILIATE MEMBERS

Includes new members between May–July. Affiliate members are not-for-profit organizations and individuals such as academics and professionals whose missions are related to the Wild Ones mission.

Ann Baughan
Illinois Prairie

Colorado Native Plant Society
Tim Berg
Front Range

Friends of the Wapsi/Wapsi Environmental Center
Linda Puls
Quad Cities

GaiaScape
Chris Kosin
Western Pennsylvania Area

Guardians of the Prairie and Forest
Lynn Abel
Quad Cities

Indiana Native Plant Society
Coralie Palmer
Partner At Large

Jean DerGurahian
Capital Region NY

Jeff Andersen
Front Range

Native Flora Seeds Inc.
Jim Carras
DFW (Seedling)

Native Plant Garden Group
Amy Dahan
Western North Carolina

Rock Island County Soil & Water Conservation District
Dawn Temple
Quad Cities

Sally Manzara Interpretive Nature Center
Tony Manzara
St. Croix Oak Savanna

Samantha Chavez
Quad Cities

Siena Muehlfeld
Partner At Large

The Nature Center at Steele Creek Park
Jeremy Stout
Appalachian Highlands

Trees, Bees, & All of These
Kim Hombs
Charlotte Piedmont

Wild You
Julie Bartolone
Youngstown Area

RENEWING AFFILATE MEMBERS

Includes renewing members between May–July.

Acadiana Native Plant Project
Acadiana Native Plant Project
Partner At Large

Bridget Center, Inc
Peggy Kober
Menomonee River Area

Donna Baker-Breningstall
Front Range

Michelle Billmaier
Oak Openings Region

Michelle Kutz
Mountain Laurel

Midland Recyclers
Midland Recyclers
Mid-Mitten

Richard Webb
Southeastern Pennsylvania

Seno Kenosha/Racine Land Trust (K/RLT)
Mark Lesko
Kettle Moraine

Tammi Van Horn
St. Charles Area

Trent Creative
Marilyn Trent
North Oakland

Unitarian Universalist Church of Bowling Green
Krystina Krueger
SoKY

NEW LIFETIME MEMBERS

Kate Gillogly, Root River Area

Ernie Green, St. Louis

Lisa Lemza, Tennessee Valley

Annette Robertson, Milwaukee-North

Nicole Sova, Milwaukee-North

Mary Spires, St. Louis

IN MEMORIAM

MaryAnn Becklenberg, Gibson Woods

Thomas Ganfield, Kettle Moraine

Jan Gorski, Front Range

Patricia Jensen, St. Charles

Alison Salisbury, Illinois Prairie

Patricia Thompson, Gibson Woods