



Brown Family Environmental Center

FIELD NOTES

Image: Huw Williams



This spring, avoid pokeweed and its purple berries.

Toxic Plants: A Bittersweet Symphony

STORY AND ILLUSTRATIONS BY
DARYA AMINIA '24, BFEC STUDENT MANAGER

As nature starts to show signs of life after a long winter, we are reminded of life's beauty with buds and leaves emerging from the ground. Spring is the time of the year when the Earth is showered in fragrance and colors, but nature lovers beware! Not all plants are created equal. Some are harmful or toxic to humans and animals.

If you hike at the BFEC (or most places in the U.S.), you have probably encountered one, if not all, of these plants: poison ivy, poison hemlock and pokeweed. They grow along the edges of fields, forests, trails and roadsides. Many can be found in the BFEC's parking lots and the trails.

Let's take a look at each of these plants and explore their biotoxicity, their potential benefits and the native niches they occupy in Ohio. If you decide to study these plants up-close, please be wary of your contact with them. One of them is deadly.

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Poison Ivy

Poison Ivy (*Toxicodendron radicans*) is a native woody vine that is an important food source for wildlife including birds, deer and small mammals. It also provides habitat for small insects and invertebrates. Poison ivy's thick growth prevents soil erosion and protects smaller neighboring plants. The plant tends to grow along the forest edge and in disturbed areas and is identified by its three-leafed growth pattern and its ability to cause an itchy rash upon contact with the skin. The urushiol compound responsible for this allergic reaction is found in all parts of the poison ivy plant — the leaves, stems, roots, flowers and berries. Contact with any part of the plant at any time of the year usually causes a rash, blisters and intense itching that can last for several weeks.

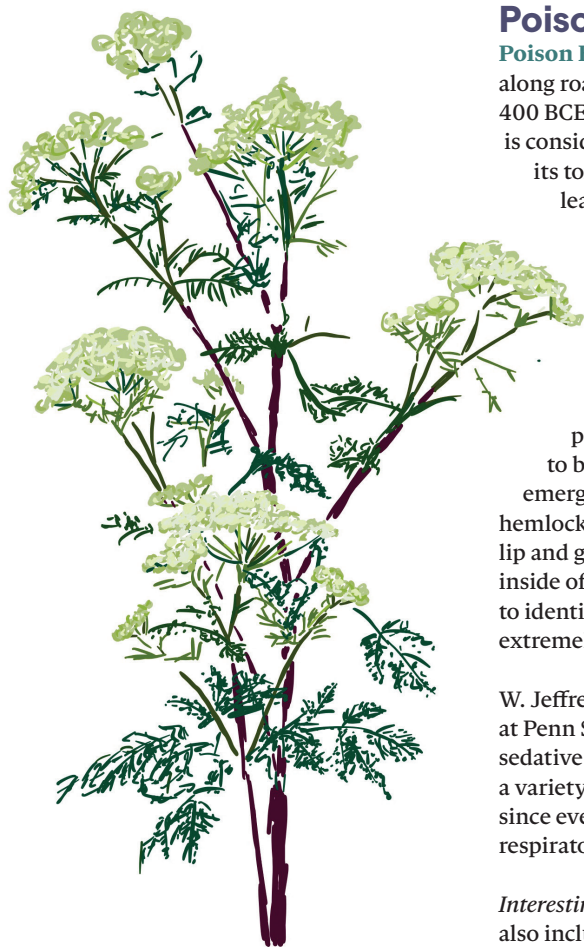


While some homeopathic preparations of poison ivy are said to treat pain, arthritis, sprains, and itchy skin disorders, there is no scientific evidence to support these uses. Please do not try this yourself.

Interesting note: Urushiol is also found in other plants in the same family (Anacardiaceae, or the Cashew family) mangos, cashews and pistachios. These edible plants contain much lower concentrations of urushiol.

Poison Hemlock

Poison Hemlock (*Conium maculatum*) is a non-native biennial plant that grows along roadsides and in disturbed areas. Most famously known for killing Socrates in 400 BCE, poison hemlock arrived in the US in the 19th century and spread quickly. It is considered aggressively invasive and isn't consumed by many animals because of its toxicity. It has an elegant appearance with its towering height, delicate lace-like leaves and white umbrella-shaped flowers.



Poison hemlock contains eight alkaloids, but the two most potent toxins are coniine and gamma-coniceine. Ingesting any part of the plant, even in minute quantities, can lead to respiratory failure, paralysis, convulsions and death. In the past few years, populations of poison hemlock have exploded throughout the U.S. and people have reported respiratory problems after mowing or string trimming areas that contain poison hemlock. Yard work around this plant can cause the toxic compounds to become aerosolized, causing multiple problems that may land you in the emergency room when inhaled. A gardener reported pulling a young poison hemlock plant from her garden and then wiping her lower lip a few minutes later. Her lip and gums went numb. She quickly removed her gloves and rinsed her face and the inside of her mouth, and the symptoms eventually subsided. If you don't know how to identify this plant, check with your local nature center to ask for help. Please be extremely careful when working around poison hemlock.

W. Jeffrey Hurst Ph.D., formerly a clinical associate professor of comparative medicine at Penn State Milton S. Hershey Medical Center, reported, "as a medicine, hemlock has sedative and antispasmodic properties and was used by Greek and Arab physicians for a variety of maladies including joint pain. Obviously it was used with extreme caution since even small amounts could cause untoward effects," like paralysis, reduced respiratory function and death. Please avoid this plant as much as possible.

Interesting note: Hemlock is a member of the family Apiaceae, or carrot family, which also includes carrots, parsnips and fennel.

Pokeweed

Pokeweed (*Phytolacca americana*) is a large perennial plant that is native to North America. It features a deep purple stem, vibrant green leaves, delicate white flowers and stunning purple fruit. While some people appreciate its attractive appearance and its benefit for bird forage (birds love the berries), pokeweed is generally considered a nuisance plant in Ohio due to its invasive nature.

According to the Vanderbilt University Medical Center, the primary compounds found in pokeweed are “phytolacca toxin (and related triterpene saponins) and mitogens.” Vanderbilt also reports that “the root is the most toxic [part of the plant] and the ripe berries the least toxic. Potentially toxic doses are as little as 0.5 teaspoonful of the root and 10 or more of the berries.” When any part of the plant is ingested, symptoms may include nausea, vomiting, diarrhea, seizures, and slow or difficult breathing. If taken to the hospital immediately with accurate information about what (leaves, berries, etc) and how much was eaten, the prognosis is generally good. The greatest threat is for children who may eat the beautiful berries.

Pokeweed has a long history of use as an edible and a medicinal. Many folks in the south and in the Appalachian region have grown up eating poke sallet, a dish made from the plant’s leaves. Memorial Sloan Kettering Cancer Center “cites research showing that raw pokeweed has medicinal properties that can help cure herpes and HIV,” but there are no clinical trials that support this. The University of Florida extension office states, “Native Americans once used this plant as a heart stimulant and as a narcotic.”

Interesting note: During the Civil War, soldiers used the “ink” from the berries to write letters back home.



A note of caution

Spring brings a spectacular display of colors and fragrances as nature awakes from winter. The coexistence of beauty, danger and potential medicinal properties of plants are reminders of the delicate balance of nature. As we enjoy this spring season, let us be mindful of our surroundings and cautious of these plants.

When hiking or gardening, please respect plants that you do not know with 100% certainty. Do not touch or eat any plant with which you are not familiar, and never attempt home remedies with conditions relating to these plants. Always wash your hands after working in the garden or walking in the woods.

Hummingbird, Bee, or *Hemaris thysbe*: Behind a Moth's Disguise

BY EMMA COFFMAN '22, BFEC POST-BACCALAUREATE FELLOW

I have always been fascinated by moths. The gentle, strange, eccentric creatures are most often seen swooping around bright lights in the middle of the night. Unlike butterflies — their colorful, sunshine-loving, thin-antennae relatives — moths are typically more muted in color, nocturnal, and sport feather-like antennae on their heads.

Or at least, that's what they say. Just a few weeks into the summer of last year, a curious little creature appeared in the garden that (literally) flew in the face of all I knew about moths. At first, I could have sworn it was a tiny hummingbird, buzzing about the garden with swift movements that even made a low humming noise.

This was no bird, though, but the hummingbird clearwing moth, otherwise known as *Hemaris thysbe*, a member of the sphinx moth family. With adorable soft green bodies, scarlet-laced wings that hum, and a long, beak-like proboscis used to sip nectar, this stunning species is named for its striking similarity to hummingbirds.

Another closely related moth, the snowberry clearwing moth (*Hemaris diffinis*), is the other most common clearwing sphinx moth you might encounter in Ohio. Although similar in appearance to *H. thysbe*, the snowberry clearwing's fuzzy body bears a more yellowish hue and darker stripes. Flitting around springtime flowers in broad daylight, it looks a lot more like a bumblebee.

What could possibly explain these moths that mimic hummingbirds and bees? Scientists believe their misleading appearance is a form of mimicry. In the case of *H. thysbe*, imitating the appearance of a hummingbird would fool many would-be predators (like real birds) that would otherwise try to eat them. For *H. diffinis*, our little faux bumblebee, a different kind of mimicry is at play. By emulating a stinging insect, the moth can go about its business mostly unbothered. This particular form of mimicry, where an animal imitates another animal that is po-

tentially dangerous or harmful, is known as batesian mimicry. It sure is effective — most people know better than to swat a bee!

Another potential explanation may make sense. Bees, hummingbirds, and their moth mimics have similar lifestyles, spending good portions of their lives hovering near flowers to sip on nectar. For that reason, their similarities in flight and color might boil down to a case of convergent evolution, in which two distinct species develop similar features independently in order to serve the same function. In everything from the humming wings right down to the long, straw-like proboscis, the *Hemaris* moths seem to parallel hummingbirds, which have long, thin beaks and rapidly fluttering wings. Both animals, with their similar traits, are perfectly equipped for lives in the flowerbeds.

But what about the brightly colored bodies and daytime flight? These traits are both quite unusual for moths. Scientists suspect that for moths active at night, it is less effective to attract a mate or communicate through visual stimuli; but during the day, colors can be a useful tool for communication. Perhaps for this reason, nocturnal moths have dull colors, while daytime moths (like the hummingbird and snowberry clearwings) tend to be flashier, like many other traditionally diurnal animals — butterflies, bees and hummingbirds, for example.

Diurnal moths (active during the day) may not be so easily explained. It is possible that this is a scenario that can be compared to the hawk/owl scenario. Hawks and owls feed coexist in the same habitats and feed on similar prey. The diurnal activity of hawks and the nocturnal activity of owls create temporal niches, so they do not compete with each other. Perhaps this scenario explains diurnal moths and nocturnal butterflies. Or, maybe it is for reasons we have yet to discover. Long story short, the order Lepidoptera (containing moths and butterflies), may not be so easily split down the middle between day and night, or bright and dull colors, as is commonly thought.

I think I admire the hummingbird and snowberry clearwing moths because they defy expectations. If you have not yet spotted one of these delightful moths, I encourage you to embark on a moth safari. Visit the BFEC's wildlife garden. You might just find one there, hovering among the blossoms. If you find a bee or hummingbird instead, make sure you look twice — it just might be a moth in disguise.

Not Hummingbirds

Look closely: the hummingbird clearwing moth (left) and snowberry clearwing moth are excellent mimics.





Image: Grendekhan. From Wikimedia Commons. Used under Creative Commons Attribution-Share Alike 4.0 International license.

Wild Turkeys: Mysterious Population Trends

BY SHANE MCGUIRE, BFEC LAND MANAGER/NATURALIST

Imagine more than 10 million wild turkeys populating North America. While there are far fewer of these birds today, historians believe their population had reached those numbers in the 1500's and 1600's — an all-time high. Through the centuries, wild turkeys experienced habitat loss, deforestation, over-hunting and myriad other challenges until their populations dwindled to 200,000 birds in the 1930's.

State conservation groups came to the rescue and started to focus on restoring wild turkey populations. Ohio, along with several other states, tried releasing farm-raised turkeys. When these attempts were unsuccessful, they turned to the capture and release of wild birds. In the early 1950's, conservation biologists fired nets from cannons to capture large numbers of wild turkeys in just one shot. They then relocated and released these captured birds back into the wild. These efforts were successful, and populations started to increase.

The National Wild Turkey Federation (NWTf) was created in 1973. This organization took the lead in creating and restoring turkey habitat. Restoration efforts have actively continued, and reports in the early 2000's showed turkey populations had grown to about 6 million birds in North America.

From 2000 to 2018, Ohio's turkey population seemed to be stable. In 2018, spring turkey hunters harvested 22,612 birds. Since then, harvests have been falling: 17,894 in 2020 and 11,770 in 2022. It is believed that Ohio still has a strong turkey population of about 160,000 to 180,000 birds, but these low harvest numbers are concerning. Is the population declining? If so, why? Most biologists believe that there are, most likely, multiple factors.

Spring weather may be creating difficulties for turkeys when the hens are nesting and the poults are first born. From

2017 – 2019, Ohio experienced cold, wet weather in late April through early June. Eggs and poults have a hard time surviving in these conditions and usually succumb to them.

Predators throughout the turkey's life cycle can also impact turkey populations. It takes about 28 days for turkey eggs to hatch. Then it takes another 10 to 14 days before the poults can fly. For roughly 42 days, the eggs or poults are on the ground, making them vulnerable to raccoons, opossums, skunks, foxes, snakes, birds and rodents. As adults, turkeys are prey for coyotes, bobcats, raccoons and great horned owls.

Habitat loss is another issue, especially when we consider quality brooding habitat. Urban expansion causes the loss of thousands of acres each year. Good brooding habitat consists of forbs and grasses that are roughly knee high with a few trees that are spaced widely enough to allow sunlight to reach the ground — think of typical oak savannah habitat. The grasses encourage insects that the poults desperately need to grow. Human-made brooding habitats can include hay fields, prairies that are on a burn cycle and crop fields. Surrounding the brood habitat, turkeys need escape routes preferably made of thickets.

While organizations are being proactive by reducing hunting limits and shifting the hunting season, it is important to realize that more than 95% of land in Ohio is privately owned. The future of our turkey population rests in the hands of private homeowners and landowners. Whether you own a half-acre or 200 acres, you can consider creating turkey habitat. Organizations like Ohio Department of Natural Resources (ODNR), National Wild Turkey Federation (NWTf), U.S. Fish and Wildlife, and your county's Soil and Water District can help. They can offer guidance and help you find resources.

How Urban and Suburban Landscapes Impact Bird Populations

BY NOELLE JORDAN, BFEC MANAGER

Overall bird populations in North America have plummeted in the last 50 years. The Ohio Bird Conservation Initiative reports that we have lost 2.9 billion birds since 1970 — over 25% of our bird population in North America. Migratory birds have taken the biggest hit with 2.5 billion gone. That's the bad news.

The good news, as Shane McGuire's article on the wild turkey suggests, is that conservation initiatives work. We have seen successes with bald eagles, waterfowl and bluebirds. Their numbers have increased thanks to concerted, nationwide efforts through organizations like the Environmental Protection Agency when it banned DDT and Ducks Unlimited, which tirelessly promotes healthy wetland habitats, and from thousands of individuals who built and continue to build bluebird boxes.

Past Paradigm for Managing Bird Species

Before we dive into urban/suburban landscapes and how they affect birds, let's take a look at the lifestyle of migratory birds and how we have previously viewed conservation efforts for them. The previous paradigm for thinking about migratory birds is that they spend time in two locations — the summer nesting ground and their winter foraging grounds. Consequently, conservation initiatives for species have focused mostly on these two locations.

In examining a bird's full annual cycle, we immediately recognize that birds need resources not only during the breeding and wintering seasons but also during migration and the post-breeding season before they migrate.

Rapidly Developing Landscape

We have always known that stop-over locations are important for migrating birds. The problem is that we have focused on wild areas and ignored urban areas as stop-over habitat. As development continues, urban and suburban sprawl increases, and many wild areas are squeezed out.

Ohio is a key state for migrating birds. During migration, billions of birds funnel into Ohio before crossing the great lakes. But 95.8% of the land in Ohio is privately owned, including the south shoreline of Lake Erie. In Ohio, we don't have the luxury of thinking that public wildlands will support birds as they migrate through. It's time to start viewing urban and suburban areas as bird habitat, but as the next section delineates, there are clear challenges to this paradigm shift.

Effects of artificial light and building collisions on migrating birds

Light pollution is a difficulty for birds in the urban and suburban landscape. Many migratory birds are nocturnal migrators. As they try to navigate at night, light pollution attracts the birds into urban areas. This leads to problems: birds are more likely to collide into buildings in urban areas, or they

circle buildings until they fall (usually dead) from exhaustion, or they safely land in the urban area and then must fuel up for the next leg of their trip with sub-par resources.

In skyscrapers and residential homes, windows are everywhere. At night, windows reflect light. During the day, they reflect trees, shrubs, lawns, and sky — what a bird might think of as habitat. Building collisions account for up to 1 billion bird deaths per year. Collisions with low- and medium-rise buildings (think residential areas) cause the vast majority of deaths.

The Ohio Bird Conservation Initiative has been working in the Cleveland area to promote Ohio Lights Out. Dozens of organizations are working together to literally turn out the lights during peak migration times (mid-March through mid-May, and again in the fall). In addition to making the city darker, hundreds of volunteers monitor building collisions, documenting bird species and the death toll from these collisions. When they find birds that are still alive, the volunteers rush them to a local wildlife rehabilitation center.

What can homeowners do to help birds?

Problem recap: more and more migratory birds are spending time in urban and suburban areas, many birds die from light pollution/building collisions, and urban areas provide sub-par resources.

Solution: Perhaps we can meet the birds where they are and transform our yards and properties into safe and robust bird habitat. The Cornell Lab of Ornithology offers seven different suggestions for supporting birds across their annual cycle, with four ideas specifically applicable to transforming your urban or suburban lot into quality habitat for migrating birds.

1. Drink shade-grown coffee

Coffee is grown in many areas where North American nesting birds over-winter. Researchers have found that growing coffee in the shade of a diverse tree canopy protects habitat-generalist birds that are over-win-

Common birds including the black and white warbler (top) and common yellowthroat (bottom) will be regular sights in Ohio as they migrate north this spring. All of us can help ensure a habitat that helps these populations grow and thrive in the years to come.



tering. The Smithsonian Migratory Bird Center (SMBC) oversees a coffee certification program that promotes shade-grown coffee where the canopy has at least 40% foliage consisting of diverse native plants. When we purchase coffee with this type of certification, or from a well-known source of shade grown coffee, we support our feathered friends in their wintering grounds.

2. Use less plastic

Plastics are everywhere — in our trash cans, our landfills and the ocean. Macroplastics, microplastics, plastic-derived additives and plastic-absorbed chemicals are harmful to birds. Many pelagic birds and scavengers eat plastic directly and often die as a result. Dead seabirds are often found with stomachs that are full of plastic waste. Other birds are subject to plastics in the food chain (a bird will eat a smaller critter that ingested plastic). If humans can reduce (or eliminate) our use of plastics, we support birds and other wildlife throughout their life cycle.

3. Participate in citizen science

With apps, doing this is easy, and you'll learn a lot, too. Cornell Lab of Ornithology manages five different citizen science apps specific to birds: eBird, Project Feederwatch, Celebrate Urban Birds, Nestwatch and the Great Backyard Bird Count. The Christmas Bird Count, spearheaded by the Audubon Society, is another way to get involved.

Data collected from these initiatives are impacting our understanding of avian population ecology, annual migration patterns and timing, and so much more. Getting involved is easy, fun and impactful.

4. Make windows safer

Now we're talking about making changes to improve the lives of birds during migration, and of local nesting birds. Building collisions account for up to 1 billion bird deaths each year. Installing stickers, film, paint, string or cable wherever you have a window will prevent many bird strikes. Companies like Feather Friendly and Santa Rosa Nation-

al make products that are inconspicuous to us but effective for birds (see photos). DIY solutions include painting a beautiful mural on your window, installing a screen or using bird silhouette decals. The trick with the decals is to apply lots of them and space them no more than 4 inches apart.

5. Keep cats inside

Here's a big one! Domestic cats kill between 2.4 billion and 3.7 billion birds each year. Considering domestic cats as a biological component of an ecosystem, they are non-native and invasive. And they are amazing predators. I'm a cat owner. I have five furry babies, but they are indoor only. If you are a cat owner, and they are indoor/outdoor, consider keeping them inside at night during peak migration times (March through May and again in September and October). And if you want birds to nest in your yard, you will want to consider keeping your feline friends indoors when there are young birds in the nest. If those young fall out of the nest (which they often do), they will not survive with a cat in the yard.

6. Use native plants for landscaping

This idea will promote not only our feathered friends but all wildlife. And who wants to mow all that grass, anyway? Here is some information from the Cornell Lab of Ornithology:

"Lawns and pavement don't offer enough food or shelter for many birds and other wildlife. With more than 40 million acres of lawn in the U.S., there's huge potential to support wildlife by replacing lawns with native plantings. Native plants add interest and beauty to your yard and neighborhood and provide food, shelter and nesting areas for birds. The nectar, seeds, berries and insects will sustain birds and diverse wildlife."

Your local nature center can help you identify native plants that will do well in your yard, whether you have shade, sun, or a combination of both. Most states have a native plant society. Their website might be a great starting place. In addition, there are more and more



Adding bird silhouette decals to windows is a simple step we all can take to help protect bird populations.

nurseries growing native plants. A quick google search should help you find one in your area.

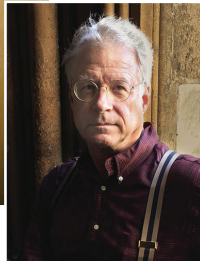
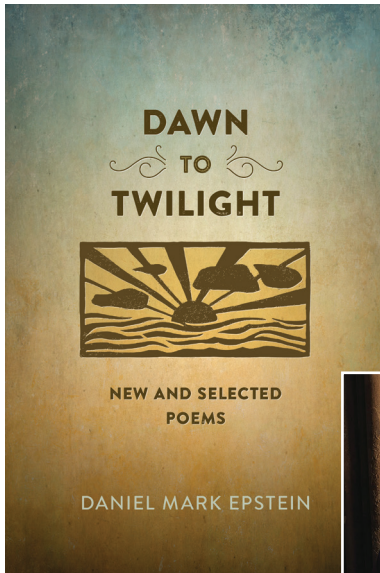
7. Avoid pesticides and herbicides

The Journal, Reviews on Environmental Health, reports that "more than 1 billion pounds of pesticides are applied in the United States each year." Neonicotinoid insecticides are commonly used in the U.S. in farming and urban landscapes. A common weed killer used around our homes is Roundup. Roundup and other similar weed killers contain glyphosate, which is not only toxic to wildlife, but has been declared a probable human carcinogen.

Herbicides and pesticides can harm birds directly through contact, but usually birds eat contaminated seeds or insects. Indirectly, pesticides will reduce the number of insects in your yard. Many bird species are insectivores and rely exclusively on insects to survive. In addition, many other species depend on insects to feed their young. These species tend to have a different diet as adults, but the protein found in insects is important for bird development.

I know that all of this information can feel overwhelming. I encourage readers to break it down and simply do what you can when you can. This year, you may be able to keep your cat(s) inside during March, April and May. Maybe next year, you can add a few native plants to your yard. And so on. If we can all slowly shift from awareness to action in deliberate and meaningful ways, we can make an impact.

UPCOMING PROGRAMS AND EVENTS



An Afternoon of Poetry

Writer and Poet Daniel Mark Epstein '70 leads a poetry workshop at the Brown Family Environmental Center, Saturday, April 1. The first five people to register will receive a complimentary copy of his newest book, "Dawn to Twilight."

An Afternoon with Writer and Poet Daniel Mark Epstein

SATURDAY, APRIL 1, 1:30 – 2:30 P.M.

The Public Library of Mount Vernon and Knox Country celebrates National Poetry Month featuring acclaimed writer and poet Daniel Mark Epstein '70 H'20. Join us on Saturday, April 1, from 1:30-2:30 p.m. at the Brown Family Environmental Center for a Poetry Workshop led by Daniel Mark Epstein. All are welcome, but advance registration is required. Please email knoxwrites1@gmail.com to reserve a spot in the workshop. Space is limited. The first five people to register will receive a complimentary copy of Epstein's acclaimed poetry collection, "Dawn to Twilight: New and Selected Poems."

SPECIAL Earth Day Concert Event: Feed the Right Wolf

SATURDAY, APRIL 15, 2 P.M.

Celebrate Earth Day with a unique multimedia science-and-music experience. Through her original songs, musician Sarah Goslee Reed asks questions, challenges us, and inspires us to do and be better in our relationships with one another and our Earth home. Science ambassador and percussionist J.D. Stillwater does this, too, through his revelations and insights from science. Together, they make for an integrated experience that will move your body, mind, and spirit toward a new, more sustainable way of being human. A one-time-only event not available anywhere else, so don't miss it. Pre-paid ticket (\$25) required. Reserve your seat now by calling 740-427-5052, or send an email to jordan2@kenyon.edu.

Earth Day Festival

SATURDAY, APRIL 22, NOON - 4 P.M.

Celebrate Earth Day with this free family event. Live animals, live music, food trucks and hands-on workshops. Make and take a bluebird box, and meet some cool critters.

Guided Hike: Bishop's Backbone Trail

SATURDAY, APRIL 29, 2 P.M.

Join us on one of our favorite trails to enjoy the tender green of spring. This 1.5-mile hike traverses open pasture land before crossing Wolf Run Creek and then follows a wooded ridgeline before circling back around to the creek. Level: moderate. *Meet in the Franklin Miller Observatory parking lot off Route 229.*

Yoga in the Garden

EVERY TUESDAY AND THURSDAY,
MAY 2 – SEPTEMBER 28, 12:10 – 12:55 P.M.

Use your lunch break to de-stress with an outdoor yoga class. Free and open to all ages; bring your kids, grandkids, friends, and others. Bring your own mat or use ours. *Meet in the BFEC garden (behind the white house).*

Bird Walk: Migratory Birds

SATURDAY, MAY 6, 8:30 A.M.

Join Khara Strum, director of Philander Chase Conservancy, on a spring stroll through grassland prairie and along woodland edges to observe birds that are migrating through the area. Some binoculars and field guides will be available. *Meet in the Kokosing Nature Preserve parking lot, 10620 Quarry Chapel Road, Gambier.*

Family Nature Quest: A Day at the Ponds

SATURDAY, MAY 6, 10:30 A.M.

Even the smallest bodies of water hold all kinds of life. Ever wonder what it's like beneath the surface? Join us as we explore the ponds to discover which plants and animals call this unique habitat their home. Meet at the picnic pavilion, and dress to get wet. *Meet at the picnic pavilion.*

Family Nature Quest: Build a Bug

SATURDAY, MAY 13, 10:30 A.M.

What makes an insect an insect? Turns out, there are a lot of moving parts. Get to know some different insects around the property, and then take some time to build your own — thorax, abdomen, head and all. *Meet at the picnic pavilion.*

Paint Outside

EVERY TUESDAY, MAY 16 THROUGH
MID-OCTOBER, 4 – 7 P.M.

Plein-air painters are invited to the BFEC to paint outdoors every Tuesday this summer. These are informal gatherings with no instruction. Bring your own supplies and meet other like-minded painters. Restrooms are available in the Resource Center. These opportunities will be canceled in the event of inclement weather. *Meet at the picnic shelter.*

Intro to Plein Air: Drawing and Perspective

Two Programs: Adults, and Ages 10 to 16

TUESDAY, MAY 16, 4 – 6 P.M.

This program is designed for beginners. Participants will learn the basics of drawing, perspective, composition and easy setup while enjoying the inspiration of the BFEC gardens. Tim McGlothlin, longtime plein-air painter, leads the session for adults, while Wendy Fetters, retired teacher and longtime plein-air painter, leads the session for ages 10 to 16. Reservations are required. Call 740-427-5052 or email jordan2@kenyon.edu to reserve your seat.

Forest Bathing: Nature Therapy Sampler

WEDNESDAY, MAY 17, 6:30 – 7:30 P.M.

In Japan, the practice of forest bathing is decades old. Shinrin-yoku, or “taking in the forest atmosphere,” is the simple but profound practice of walking through a forest and opening your senses. Experience what research has told us for years — that spending time under a forest canopy can boost your immune system, lower blood pressure, accelerate healing and so much more. Jill Emmelhainz, a certified forest therapy guide, will show us how to use our senses to connect with nature. Rain or shine. *Meet at the Picnic Pavilion.*

All About Flowers

Pick, dissect, press and preserve Ohio's spring flowers at Family Nature Quest: Flower Forensics, Saturday, May 27.

Family Nature Quest: The Colors of the Rainbow

SATURDAY, MAY 20, 10:30 A.M.

Springtime brings all kinds of colors to the BFEC, including the rare and lucky spectacles of rainbows. Join us as we take a closer look at the science behind color. We will make our own rainbow from colorful items we find along the way. *Meet at the picnic pavilion.*

Family Nature Quest: Flower Forensics

SATURDAY, MAY 27, 10:30 A.M.

April showers bring May flowers, especially at the BFEC! We will spend some time outside collecting flowers, and we will dissect them to learn about flower anatomy. We will finish by pressing and preserving them. *Meet at the picnic pavilion.*

Fine Wine and Creative Design Painting Event with Christine Yoe

SATURDAY, JUNE 3, 2 – 4 P.M.

Pick a pal, pick some paints, and pick up your spirits. Enjoy colorful, step-by-step instruction in a fun filled environment. No art experience needed. Christine Yoe, a local artist and art teacher at St. Vincent de Paul School, provides everything you need to create a ready-to-hang 16x20-inch painting. Bring your own beverage and paint the afternoon away. Adults only. Register and pre-pay (\$37) at www.finewineandcreativedesign.com.

Forest Bathing: The Full Experience

SATURDAY, JUNE 10, 2 – 4 P.M.

In Japan, the practice of forest bathing is decades old. Shinrin-yoku, or “taking in the forest atmosphere,” is the simple but profound practice of walking through a forest and opening your senses. Experience what research has told us for years — that spending time under a forest canopy can boost your immune system, lower blood pressure, accelerate healing and so much more. Jill Emmelhainz, a certified forest therapy guide, will show us how to use our senses to connect with nature. Rain or shine. *Meet at the Picnic Pavilion.*

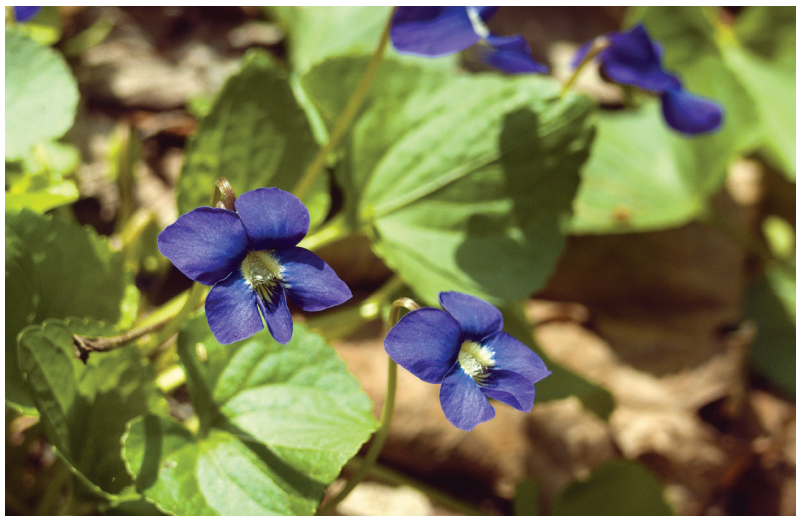


Image: Coalle19. From Wikimedia Commons. Used under Creative Commons CC0 1.0 license.

Kenyon's Journey to Decarbonization

BY DAVID HEITHAUS '99, DIRECTOR OF GREEN INITIATIVES

Since 2016, Kenyon has been committed to reducing our net greenhouse gas emissions to zero, thus becoming carbon neutral. While incremental improvements have occurred, it became clear in recent years that a comprehensive strategy would be necessary in order to reach our long-term goals.

In April 2022, Kenyon embarked in earnest on an effort to address our contributions to climate change. Partnering with Ever-Green Energy and Resource Environmental Solutions, Kenyon is in the final stages of crafting a decarbonization master plan that addresses the roles of our built, natural and agricultural environments.

The vast majority of greenhouse gas emissions come from either electricity or natural gas used for heating and cooling. While most of the plan focuses on opportunities to transition these campus needs to renewable forms of energy,

in an unusual twist, Kenyon is also investigating how land management strategies might be adapted to enhance the ability of our rural location to actively remove carbon dioxide from the atmosphere and to store it in soils and biomass. It's not a given, but if we invest in the right strategies, "unavoidable emissions such as those associated with travel to and from campus might be offset by the very place to which we are coming and going."

What form will these efforts take and how will we balance forest, wetland and prairie management with carbon-storing agricultural strategies? These questions will form the basis for community conversations over the coming months and years and will provide ample opportunities for creative planning, research and reflection. The BFEC will be on the leading edge of many of these strategies.

DONORS AND VOLUNTEERS

WINTER 2023

Kenyon provides financial support to the BFEC, but the center has been able to grow largely through the generosity of volunteers and donors. We are indebted to the following individuals, groups and businesses for recent donations of time, materials and funding. If you would like to make a gift or volunteer for a project, please call the BFEC at 740-427-5050.

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VOLUNTEERS

Even during the cold of winter, we had dedicated volunteers help us out with invasive species removal, trail monitoring and a wildflower survey on the River Trail. Thank you!

Miriam Dean-Otting, *community*

Hannah Ehrlich, *Kenyon student*

Bethany Hankinson, *community*

Ella Hankinson, *community*

Sabine Mansk, *Kenyon student*

Kenyon football team and coaches



Image: Eric Albrecht

Get Out

Take a hike, pick flowers, take in poetry, or cleanse your soul with a forest bathing session. The spring, the BFEC offers you myriad opportunities to get up, get out, and connect with nature.

Brown Family
Environmental Center
Kenyon

bfec.kenyon.edu | 740-427-5050



BROWN FAMILY ENVIRONMENTAL CENTER | 9781 LAYMON ROAD | GAMBIER, OH 43022-9623

OUR MISSION

The Brown Family Environmental Center exists to support the academic goals of Kenyon College, to provide opportunities for education and research, to engage Central Ohioans of all ages with nature, and to conserve the natural diversity of the Kokosing River valley.

OUR STAFF

Emma Coffman '22, *Post-Baccalaureate Fellow*
Jill Kerkhoff, *Facilities Coordinator and Office Administrator*
Shane McGuire, *Land Manager Naturalist*
Noelle Jordan, *Manager*

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TO MAKE A GIFT, PLEASE FILL OUT THE INFORMATION BELOW, DETACH THE SHEET AND SEE MAILING INSTRUCTIONS.

There are many reasons to give, including the satisfaction of knowing you're a part of critical environmental education and conservation programs. Receive preferred access to workshops, a hard copy of our newsletters, and a discount on bird seed. **Use the form below to send your contribution today.**

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Your donation is tax deductible as allowed by law. The Brown Family Environmental Center at Kenyon College is a 501(c)(3) nonprofit organization.

Membership level:

- ☐ Student \$20 ☐ Individual \$35 ☐ Family \$50
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☐ My check, payable to Kenyon College, is enclosed

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Mail to: BFEC, P.O. Box 508, Gambier, Ohio 43022