

EECO

Environmental Education Council of Ohio



Ephemerals and the Eclipse

Spring 2024

Spring Ephemerals

By: Jenny Adkins, MAD Scientist Associates



Harbinger of Spring



Skunk Cabbage

One of the main joys of spring is seeing the natural world come back to life. If you live near a woodland, you've undoubtedly noticed the phenomenon of spring ephemerals- early blooming wildflowers, blanketing the forest floor. Not every forest has them, but they all should. These fleeting forest beauties are negatively impacted by excessive browsing, competition with invasive species, and non-native earthworms. In healthy forests, these flowers are the first to emerge, bringing splashes of green and colorful blooms to the otherwise gloomy grays and browns of Ohio forests. They are also the first source of pollen and nectar for early-emerging bees and other insects.

Some of the stalwart Ohio ephemerals (in order of appearance) are:

Harbinger of Spring (*Eryigenia bulbosa*), also known as the Salt and Pepper Plant for its minute white petals and darkly colored anthers. It can be found in most forested areas.

Skunk Cabbage (*Symplocarpus foetidus*). This unusual flower arises from damp soil or even snow before the leaves emerge. It's pollinated by flies and beetles. It can be found at sites where ground water runs close to the surface.

Spring Beauty (*Claytonia virginica*). You may notice what looks like dark floppy blades of grass peaking out through the leaf litter. These

Continued on page 2

Save the Date

Ohio Woodland Water and Wildlife Conference

March 6, 2024, Mansfield, Ohio

<https://woodlandstewards.osu.edu/events/2024-ohio-woodland-water-and-wildlife-conference>

39th annual Wildlife Diversity Conference

March 14, 2024, Columbus, Ohio

Ohio Rivers Symposium

March 22, Columbus

<https://ohiodnr.gov/home/news-and-events/all-events/Natural-Areas-and-Preserves/Central+Ohio/ohio-rivers-symposium>

Student Wildlife Research Symposium

April 11, Salt Fork State Park, Ohio

<https://ohiodnr.gov/discover-and-learn/education-training/environmental-education/student-wildlife-research-symposium>

EECO Annual Conference

April 12-14, Salt Fork State Park, Ohio

www.eeco-online.org

Ohio Stormwater Conference

May 8 - 10, Kalahari Resorts, Sandusky, Ohio

<https://ohstormwaterconference.com/>



Trout Lily



Virginia Bluebells

are the leaves of spring beauty. They are followed by a drooping raceme of white-pink flowers. This plant is adaptable and can grow in lawns, as well as dry-wet woods.

Trout Lily (*Erythronium albidum*, *E. americanum*). Similarly to spring beauty, you'll notice the leaves of these plants before the flower in the spring. In fact, trout lily can take up to seven years of growth before it produces a bloom! One plant can form many through stoloniferous growth. This plant can grow on stream banks and upland wooded slopes.

Great White Trillium (*Trillium grandiflorum*), also known as White Wake Robin. This shot-stopper is one of several trillium species in Ohio and it's the most showy. Others have more diminutive flowers or maroon-pink flowers. This plant is often found in upland woods where the soil is well-drained.

Virginia Bluebells (*Mertensia virginica*). Just try to pass up a colony of bluebells on a spring walk, I dare you! The cascade of blue-pink-purple bell-shaped blooms attract bumblebees and other pollinators.

Jack-in-the-Pulpit (*Arisaema triphyllum*). This is a flower you truly can't mistake for anything else. The leaves look very similar to trilliums, but the flower is composed of a spathe and spadix (like Skunk Cabbage) that looks like nothing else in the forest. You can find this plant in moist woodland or riparian areas.

There are so many beautiful native woodland plants, we can't name them all in this article. I encourage you to keep your eyes peeled for ephemerals growing near you. Snap some photos and

upload to plant identification apps like iNaturalist or Seek, or better yet, use a field guide! The more you look, the more you'll see. And remember the important role these plants play in forest food webs.



Celebrate 40 years with Project WET!

Over the past four decades, Project WET: Water Education Today has evolved into a beacon of innovation in water education. Their programs, resources, and activities are not just educational; they are experiences that spark curiosity, foster understanding, and ignite a passion for water conservation.

Find out more about Project WET at <https://www.projectwet.org/about-us>

Visit Ohio's Project WET site at <https://epa.ohio.gov/divisions-and-offices/environmental-education/training/project-wet> Or contact our state coordinator, Dennis Clement with the Ohio EPA dennis.clement@epa.ohio.gov or 614.644.2048.



March 7, 8, & 9 2024
Camp Oty'Okwa

24799 Purcell Rd, South Bloomingville, OH 43152

Featuring breakout sessions, field trips, and keynote presentations from two of our most engaging vernal pool authorities: Jim McCormac and Joe Moosbrugger.

Cost: Ranges from \$55 - \$185 depending upon single, or multi day registration. Meals (breakfast, lunch, and dinner on Thursday and Friday and breakfast on Saturday) are included with the registration.

Register: <https://www.eventbrite.com/e/vernal-poolooza-2024-registration-761757626567>

EECO 2024

Annual Conference

April 12-14 • Salt Fork State Park

Register today

<https://eeco.wildapricot.org/event-5583943>

Cost

Friday workshops and fieldtrips incur an additional fee on top of the conference registration. This amount varies depending upon your selection.

Full Conference

- Member \$190-\$215
- Non-Member \$250 - \$275
- Student \$155

Saturday Only

- Member \$120-\$135
- Non-Member \$170-\$185
- Student \$155

Lodging is not included in the registration fee:

EECO room block at Salt Fork State Park Lodge available until March 8, 2024. Rooms \$139 per night, Cabins \$189 per night, Lakeside Chalet \$219 per night. Please call 740-435-9000 and ask for the EE24 room rate.

Conference Strands

- We Believe in Honoring Natural and Cultural History in Environmental Education
- We Believe in the Future of Environmental Education
- We Believe in the Business of Environmental Education
- We Believe in Inclusion in Environmental Education

Kids Conference

On Saturday, while you are attending EECO conference sessions, your child/children can, too! EECO is offering a Mini Conference for kids! Kids will LEARN about Environmental Education and gain an appreciation for nature and environmental stewardship. Like our adult attendees, they will CONNECT with new friends in a positive and supportive setting. This is a fabulous opportunity to enjoy the conference and begin a family tradition for your children to GROW into our future EECO Leaders, all while enjoying the amenities of the state park!

Ages 6 and up are welcome!

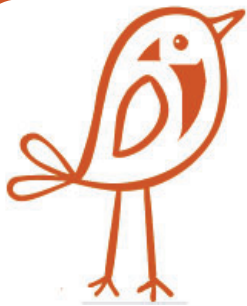
\$15 fee per child will be charged for the full 4 session kids conference. This is payable at the registration table. Lunch is not provided. Children's meal tickets will be available at the registration table.



Order your shirt now!

<https://eeco-online.org/event-5613371>





Challenge: Seeking an Alternative to "killing two birds with one stone"

For such a common saying, it seems a such a poor choice of words for those of us in the environmental field. Can you come up with an alternative?



Competition:

Yes, we are challenging you to come up with a more eco-friendly alternative. Please email your submissions (eeccomm@gmail.com), or bring them to the EECO Conference in April at Salt Fork. All submissions must be received by 11 am on Saturday, April 13. If you bring your ideas to the conference, please place them in the Bluebird Box on the registration table.

Judging:

Conference attendees, get your sticky dots ready to vote for your favorite. Voting will occur from lunchtime until dinner time on April 13.

The Prize:

Other than the chance to crown yourself as the environmental wordsmith of the year, Chris Rowlands from Aullwood Audubon has donated a signed print. The winner does not have to be present at the conference, but we would love if you could be there.



Free Opportunity for Educators: Shipboard Science Workshop on Lake Erie July 7 - 13, 2024

Deadline for applications is February 19, 2024.

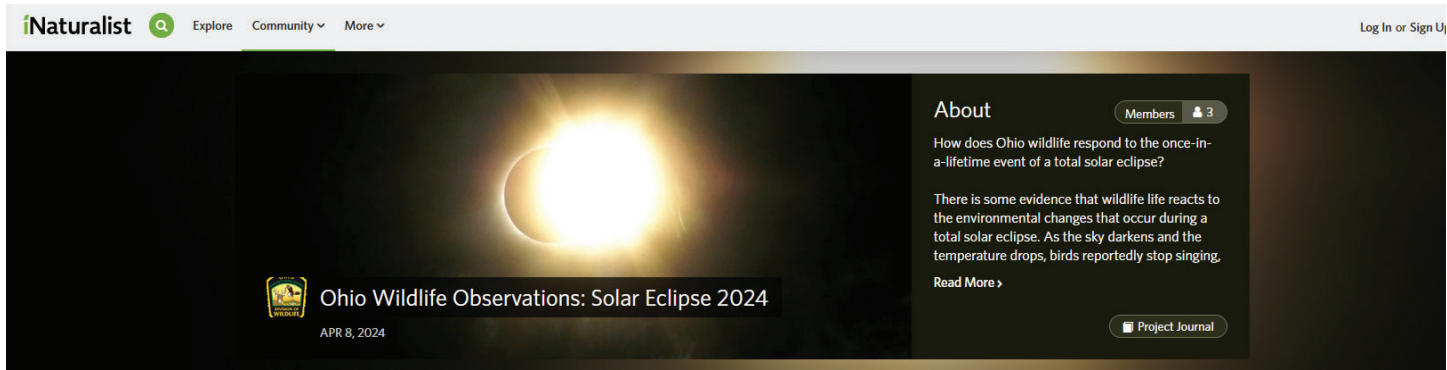
Formal and non-formal 5th-12th grade educators from across the Great Lakes states are invited to apply to join the Center for Great Lakes Literacy (CGLL) and GreatLakes scientists for a once-in-a-lifetime, free opportunity to assist scientists and bring the Great Lakes back to their classrooms!

These shipboard workshops provide a unique opportunity that cannot be duplicated by any other educational entity in the basin. The week-long scientific exploration of Lake Erie will take place July 7-13, 2024, providing educators with a hands-on opportunity to explore microplastics, phytoplankton, benthic organisms, sediment, and other Lake Erie-specific topics while living and working alongside Great Lakes scientists on a vessel conducting critical research. This is truly an amazing opportunity for educators.

Through a partnership with the US EPA Great Lakes National Program Office, and funding from the EPA Great Lakes Restoration Initiative through NOAA, educators will spend a full week alongside researchers aboard the US EPA R/V Lake Guardian. Hosts for the LakeErie workshop are CGLL partners Ohio Sea Grant and Pennsylvania Sea Grant educators.

For more information on the 2024 Shipboard Science Workshop and application materials, visit the Center for Great Lakes Literacy website <http://tinyurl.com/shipBoardScience>





Wildlife during the Total Solar Eclipse

Join our Research Project!

By Abby Ditomassi-Wildlife Education Coordinator, Division of Wildlife

Past studies and observations have found that wildlife changes their behavior during eclipses. As the moon blocks the sun, nighttime animals may start to stir and daytime animals quiet down or retreat. Some animals begin to sing their dawn or dusk choruses. If you plan to observe the eclipse in Ohio, consider keeping your eyes or ears out for wildlife!

The Ohio Division of Wildlife invites citizen scientists like you to take advantage of this once-in-a-lifetime opportunity to record eclipse-related animal behaviors to the OhioWildlife Observations: Solar Eclipse 2024 project on iNaturalist.

<https://www.inaturalist.org/projects/ohio-wildlife-observations-solar-eclipse-2024>

Before the eclipse:

- Download the iNaturalist app on the App Store or Google Play and make an account.
- Practice making observations. Check out the Getting Started Guide for helpful tips.
- Join the "Ohio Wildlife Observation: Solar Eclipse 2024" project on iNaturalist.
- Decide where you will be viewing the eclipse and know when the eclipse will be at maximum at your location. Use this map to help determine that time. <https://www.greatamericaneclipse.com/ohio-2024-eclipse>
- or download the Solar Eclipse Timer App on your phone for precise timing

Day of the eclipse (April 8):

- Once you arrive at your site, scout your area for animals and plants. Choose the individual organism(s) you want to observe.
- During the eclipse, make 3 separate observations for each individual organism using the iNaturalist app, adding each of them to the "Ohio Wildlife Observations: Solar Eclipse 2024" project:
- 1st: 30 minutes before totality (or maximum coverage) make an observation in iNaturalist. Add anything interesting you notice about their behavior in the "Notes" section.

- 2nd: During the 5 minutes of totality (or maximum coverage) make a second observation in iNaturalist. Add anything interesting you notice about their behavior in the "Notes" section.
- 3rd: 30 minutes after totality (or maximum coverage) make a third and final observation in iNaturalist. Add anything interesting you notice about their behavior in the "Notes" section.

You are welcome to make other observations of your organism(s) beyond these three - just be sure to choose the time frame in which you made these other observations in "Before, During, or After Totality" field.

Want to take your research a step further? Visit NASA's site to obtain a free Soundscapes kit to record data to be sent back to the organization for analysis. <https://eclipsesoundscapes.org/data-collector-page/>

Are you involved in behavioral ecology?

Interested in how certain life forms react to eclipses? Could widespread records of behavior changes inform your research? We are looking for both scientific and engagement partners. Contact Jen Dennison at Jen.Dennison@dnr.state.oh.us

Hiding in Plain Sight: Spectacular Night Sky Views in Warren County's Suburbs

By Chris Celek, President, Warren County Astronomical Society



Image: Warren County Park District

First-time visitors to the Fred Bay Observatory in Hisey Park are surprised by the dark night sky. They're accustomed to the views in their back yards in Waynesville, Lebanon, Mason, Springboro and other communities between Cincinnati and Dayton. There's so much light from the suburban sprawl that most people can see only a handful of the brightest night sky objects. Then they visit the observatory and are immediately struck by how much darker the sky can be when they stand outside, away from all the artificial light pollution. Hundreds of stars appear. All eight planets in our solar system become visible. Visitors see galaxies, clusters and nebulae for the first time. And then there's the Milky Way. Yes, you can look through our home galaxy stretched across the sky from horizon to horizon. And you can view the Milky Way from the Fred Bay Observatory along the Little Miami River in northern Warren County.

Built by volunteers and donated to the Warren County Park District in 2017, the Fred Bay Observatory is open to the public for monthly educational programs and stargazing. Members of the Warren County Astronomical

Society operate the observatory. They also open the observatory to view special events such as comets and unusual alignments of objects in space. A recent program featured presentations about solar power for homes and electric vehicles along with viewing of the sun through special telescopes.

The next major event will be the Great American Eclipse on April 8, 2024. If the Ohio spring weather cooperates, partial views of the sun's light being blocked by the moon will be visible at Hisey Park.

People who want to experience the full darkness that occurs during a total solar eclipse are encouraged to

travel to Wright State University in Dayton and communities along the sun's path of totality, which will run from southwest to northeast Ohio. Full details are available online at <https://www.greatamericaneclipse.com/>. And remember: never look directly at the sun without solar viewing glasses or special filters on telescopes, binoculars and cameras. Without protection, you can permanently damage your eyes.

All public astronomy programs at the Fred Bay Observatory are offered free of charge. Private presentations for schools, youth groups and community organizations also are available; the Warren County Park District also rents Hisey Park for weddings and corporate events. The observatory can be opened for these private events. Since the observatory is an outdoor facility, all programs are weather dependent. When cloudy skies or weather conditions block night sky views, volunteers provide a virtual tour that incorporates computer simulations.

Adults 18 and older are invited to become individual members of the Warren County Astronomical Society. Family members are also available. Members gain unique access to the Fred Bay Observatory as well as the Rachel A. Hutzel Observatory at Camp Joy near Clarksville. Members can complete training to operate both observatories.

Location: Fred Bay Observatory, located at 5443 Midletown Road, Waynesville, OH 45068,

To learn more: To join the Warren County Astronomical Society, or learn more about upcoming programs at the Fred Bay Observatory, visit the group's website at <https://www.wcas-oh.org/>. You can also follow the group on Facebook at <https://www.facebook.com/WCAstroSociety>.



Native Plant: Terrific Trilliums

By Lynn White, Butler Soil and Water Conservation District

Spring is a great time to head out for a wildflower walk. Hopefully you will get to see Ohio's state wildflower, the large white trillium (*Trillium grandiflorum*). Trilliums are spring ephemeral flowers that are most noted for their symmetry. Their bracts, petals, and sepals all come in sets of three. Even the seedpods are divided into three sections.

In early to mid spring, they grow from a thick rhizome, which are fleshy, underground stems. They begin flowering mid- spring to early summer. Then setting seed and dying back in mid-summer, they wait below the soil surface to emerge the following spring.

All trillium species belong to the Liliaceae (lily) family and are rhizomatous herbs with unbranched stems. Morphologically, trillium plants produce no true leaves or stems above ground. The "stem" is just an extension of the horizontal rhizome and produces tiny, scale like leaves (cataphylls). The above-ground plant is technically a flowering scape, and the leaf-like structures are bracts subtending the flower. Despite their morphological origins, the bracts have external and internal structure like a leaf, function in photosynthesis, and most people refer to them as leaves.

Trillium Types:

Forty-three species of trillium are known worldwide with thirty-eight represented in North America. Within the United States, the bulk of trillium diversity is found in the eastern states. Here in Ohio, we have 8 native species, though one was only recorded once in northern Ohio.

Trilliums are broken into two groups; sessile or pedicellate. On sessile plants, the flower sits directly on top of its whorled bracts – look like leaves. On pedicellate, the flower is raised on a short stalk. Pedicellate trilliums can either have erect or nodding flowers. Sessile trilliums usually have mottled foliage, while pedicellate trilliums have showier flowers.

Planting Trilliums:

Some trillium species are endangered. If you wish to grow trilliums in your garden, always purchase from a reputable source that can guarantee the plants were not collected in the wild.

Great Resources:

- Blog: Guide to Trilliums of Ohio <http://floraofohio.blogspot.com/2014/03/guide-to-trillium-of-ohio.html>
- Book: Wildflowers of Ohio by Robert Henn.
- Native Plant List: <https://www.ohionativeplantmonth.org/native-plant-list>

Even though it is a woodland species, the dormant plant needs to be warmed by the early spring sun. This need for early season sun is one of the reasons we are seeing fewer trilliums in the wild. Many of our natural areas are over taken by non-native invasive honeysuckle. Honeysuckle leafs out very early in the season, blocking the sunlight from the trilliums and other wildflowers.



They need to be planted in soil that is rich in organic matter. They prefer deep, acid to neutral, moist, well drained soils. They don't tolerate having wet feet, and so don't thrive in heavy clay soils.

Trilliums are relatively easy to grow from their rhizomatous root but slow to develop and spread. To make up for it, the plants can live for up to 25 years.

Other than being browsed by deer, trilliums suffer from no serious pest or disease problems.

Pollination:

Various species of trillium are pollinated in different ways. Red trillium (*Trillium erectum*) has no nectar and is pollinated by flies (Diptera) and beetles (Coleoptera). The petals of the flowers exude an odor that attract carrion flies and beetles which pollinate the flower. Trillium grandiflorum is pollinated by Hymenoptera insects, including honey bees, bumblebees, and wasps.

Once pollinated, trilliums then produce small fruits, which ants take to their nest. They eat the fruit and put the seeds in their "garbage." After germination, a root will emerge from the seed. The seedling develops in the dark, underground, for almost a year before sending a green leaf up to find the light.



Environmental Protection Agency

Ohio Environmental Education Fund

The OEEF was created by the General Assembly in 1990 to enhance Ohio citizens' awareness and understanding of environmental issues. It is administered by the Director of the Ohio Environmental Protection Agency (Ohio EPA) and provides approximately \$1 million annually in grants to support environmental education efforts within the state of Ohio. The OEEF derives its funds from one-half of the civil penalties collected from violations of Ohio's air and water pollution control regulations. <https://epa.ohio.gov/oeef/>

Grant Applications

The Ohio Environmental Education Fund (OEEF) invites applications for mini grants (\$500 - \$5,000) and general grants (\$5,000 - \$50,000) for education projects targeting pre-school through university students and teachers, the general public, and the regulated community. Prospective applicants can start the application process by opening an account in Ohio EPA's eBusiness Center at <https://ebiz.epa.ohio.gov/>

Ohio EPA encourages OEEF applicants to discuss their proposal ideas with OEEF staff members before completing their applications. OEEF staff members will be happy to provide a pre-review of draft applications as they are under development in the online grant service.

Electronic Letter of Intent Deadline is due in early January

Application Deadline is due mid January

Grant Writing Workshops

The Ohio EPA Office of Environmental Education typically offers grant writing workshops around the state throughout the year.

- **Grant Writing 101:** Finding the Right Funder. Prospecting tips to help you identify foundations, corporations, and government grant programs, and how to approach different kinds of grantmakers.
- **Grant Writing 102:** Writing a Winning Proposal. How to avoid common mistakes applicants make, and develop realistic objectives, activities, and budgets. OEEF will be referred to during this session.

Grant Writing 103: Becoming a Grant Reviewer. Want to become a better grant writer? One of the best ways to improve your grant writing skills is to review proposals from other organizations.

Upcoming Grant Writing Workshop

Grant Writing 101/102 Workshop

Thursday, April 18 from 10 am - 4 pm

At Deer Haven Park, 4183 Liberty Road Delaware, OH 43015

Registration is required for these FREE workshops. www.eventbrite.com/e/workshop-ohio-environmental-education-fund-grant-writing-tickets-810588139947

For questions, please email Heather Lauer at Heather.Lauer@epa.ohio.gov

Diversity in Water Speaker Series

Did you miss the past speakers? Good news, the recordings are available at <https://www.youtube.com/@ohiodiversityinwaterspeake2986>

January 2024: Bic (Bichvan) Boyles

Laboratory and Pretreatment Program Manager at the Delaware County Regional Sewer District

November 2023: Anil Tangirala

Director of Water Resources at ms consultants Inc. in Columbus, Ohio

September 2023: Young Seo

a professor in the Department of Civil & Environmental Engineering at the University of Toledo.

May 2023: Chad Roby

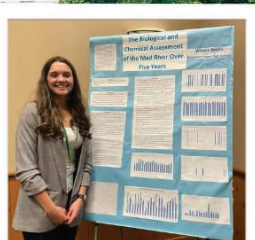
Lt Colonel Chad Roby has over 20 years of working in the engineering industry, focusing on water and wastewater planning, design, and construction.

CALL FOR PROSPOSALS DUE MARCH 1ST!

Student Wildlife Research Symposium
April 11, 2024
Salt Fork State Park Lodge



**Student
Registration
is FREE!**



**Student
Wildlife
Research
SYMPOSIUM**



Join the Environmental Education Council Of Ohio

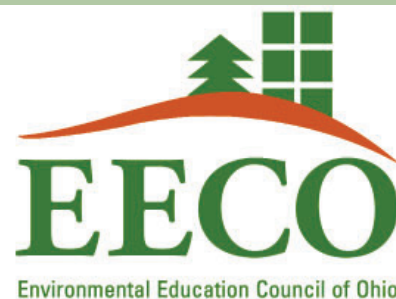
**By joining EECO, you
will receive:**

- A network of professional educators exchanging new ideas, resources, and techniques in EE
- An informative quarterly EECO newsletter
- Periodic email newsletters with links to events, job opportunities, and updates about EE in Ohio
- Outstanding EE publications and resources
- Annual statewide and regional conferences
- Regional professional development workshops
- Special member rates for conferences, workshops, and publications as specified
- An opportunity to participate in a variety of committees & activities to promote innovative EE in Ohio
- Peer recognition of professional efforts through EECO's Awards program

Support EE for the world we IMAGINE ...by making a donation to EECO

Would you like to help further environmental education in Ohio? Consider contributing an amount of your choice to EECO. All donations are tax-deductible and will help increase awareness of environmental issues in Ohio. You can donate through our annual campaign <https://givingtuesday.mightycause.com/story/j7ag1g>. Or you can send a check made payable to the Environmental Education Council of Ohio to PO Box 1004, Lancaster, OH 43130. Or you can donate through the website <https://eeco.wildapricot.org/support>.

Ohio has an amazing network of environmental educators that provide EE to students of all ages throughout our great state. Please help support this network and EECO so that we can continue to provide cutting edge classroom presentations, professional development and special events for years to come. We believe in a better future. We want sound science Environmental Education for the world we imagine, we hope you do too!



Nature's Gift of Healing Plants: Teas and Decoctions for Winter

By Gia Giammarinaro, Cincinnati Park Board

Do you ever get the winter blues? Worry about your immune system during germ season? There are teas and decoctions that come from plants which can help brighten your gloomy days and boost your immunity. Many of these brews not only help you, but also taste delicious. Break your hot beverage routine and try something healthy and new!

There are so many wonderful ideas and recipes out there. Sometimes it is difficult to choose something to start with. Herbalism, the study or practice of the medicinal and therapeutic use of plants, is making a comeback. People are beginning to again see the value of healing plants. Once you learn a few basic terms and techniques, you will be on your way to making something new and enjoying some of these benefits yourself.

When it comes to herbal teas, there are two main types which are classified by how they are made: infusions and decoctions. An infusion is much what we are familiar with in terms of "herbal tea." Typically made from dried leaves or flowers, an infusion is made when more delicate parts of a plant are steeped in boiled water. Boiling water is added, but no additional heating takes place. This is how most of us make tea. A decoction is a little different. In a decoction, more robust parts of the plant are boiled for a period of time to coax out the flavors and beneficial compounds of a plant. Roots and twigs are commonly used in decoctions.

Let's get started! We will list a few examples of infusions and decoctions below; along with some notes on possible benefits, flavor notes, and suggestions on where to find them.

• Aloe Vera

(Infusion:) The top health benefits of aloe vera tea include its ability to optimize digestion, help to regulate blood sugar, relieve inflammation, and boost the immune system. Much of these health benefits are attributable to the many vitamins and minerals found in this tea,



particularly vitamins A, C, and E, all of which can act as antioxidants within the body. [3 (www.organicfacts.net)

- Caution: take oral medications 1 hour prior to using aloe orally, it can slow absorption of orally administered medications. (Mountain Rose Herbs)
- Flavor: This one is a mystery flavor! ??
- How to get: dry the leaves of your plant at home, or purchase

• **Cinnamon (Infusion but can be a decoction with cinnamon sticks):** One of the world's most prized spices, cinnamon has many possible health benefits. The range includes helping to regulate blood sugar, reducing inflammation, and even helping menstrual cramps.

- Flavor: warm and cinnamon-y

• **Hibiscus (Infusion):** Antioxidants, anti-inflammatory, might even help lower blood pressure. (7 Benefits of Hibiscus Tea – Cleveland Clinic)

- Flavor: tangy, subtly sweet. A little like cranberry juice
- How to get: dried hibiscus can be found in the Mexican section of many grocery stores. Often labeled as "Jamaica."

• **Lemon Ginger (Infusion):** Lemon is a powerful astringent high in vitamin C believed to help regulate blood sugar, and ginger is prized for digestive health. Put them together, and the possible health aids of lemon ginger tea include: weight control, anti-nausea properties, possible anti-cancer properties plus an immunity boost.

- Flavor: Lemony and gingery, this one is common in the tea section at most grocery stores
- Want to make this at home? (Decoction) Slice a whole lemon, and boil with some sliced ginger (peel or don't peel, up to you). Add to a pan of boiling water, boil until both the lemon and ginger have softened. Once softened, blend in a blender until it forms a smooth paste. Put a tablespoon or two in a mug, add honey, and fill the rest of mug with water. Option: add some turmeric (powdered or root) to the boil if you like. Enjoy!

• **Linden Flower (Infusion):** Tilia tomentosa blooms. Good for your heart? Contains Quercetin, believed to reduce inflammation specifically in the cardiovascular system. Also classified as a hypotensive herb, possibly helping lower blood pressure. (webmd)

- Flavor: Sweet, floral

• **Sassafras (Decoction)**: One of the USA's very first exports to Europe and Asia, Sassafras has a long history of use as an Indigenous beverage. Believed to have anti-inflammatory properties and promote a general feeling of healthiness. Used as a daily tonic by many Americans.

CAUTION: Do not drink if pregnant or nursing. FDA does not recommend sassafras tea for consumption, based on the presence of Safrole, a compound considered poisonous.

- Flavor: Spicy and root beer like

• **Spicebush Twig (Decoction)**: Considered a diaphoretic, promoting sweating in the body. Can be used to help in treating fevers with chills. Mild stimulant was used during civil war as a tea substitute in the South during siege.

- Flavor: Warm, spicy
- Caveat: don't boil this decoction for too long, can develop an unpleasant flavor. Taste it every minute or so during the boil.

Local sources for purchase: Jungle Jim's Market, any local natural remedy or herb store Mail order: Mountain Rose Herbs: <https://mountainroseherbs.com/>

Bioproducts in the Classroom Workshop

Saturday, April 20, 2024
Springfield, Ohio

A workshop for science teachers: bringing sustainable, biobased products to the biology, chemistry, or environmental science classroom

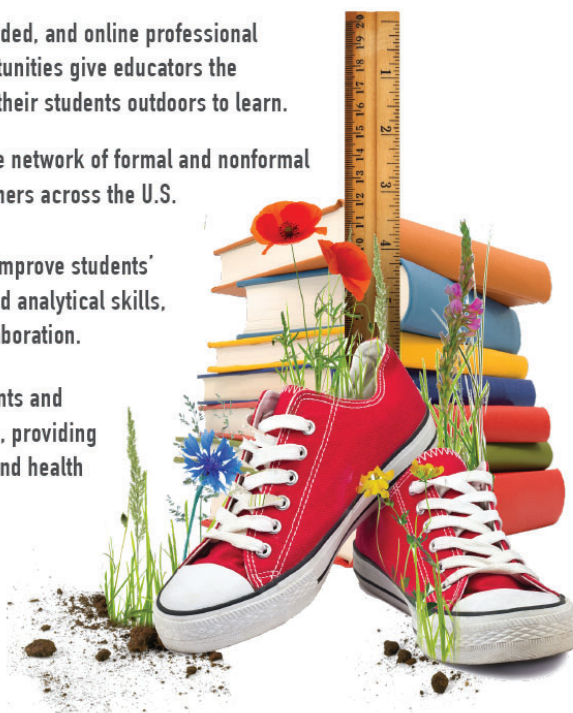
Global Impact STEM Academy 700 South Lime-stone Street #B Springfield, OH 45505

Register at <https://www.eventbrite.com/e/bio-products-in-the-classroom-tickets-807906679627>

WHAT IS PROJECT LEARNING TREE?

Spark curiosity by introducing youth to nature. Project Learning Tree's educational materials are flexible, fun, and easy to integrate into your existing curriculum. Hands-on, multi-disciplinary activities incorporate STEM, language arts, and social studies, and encourage collaborative, inquiry-based learning.

- 1 Activities for PreK-12th grade are aligned with national and state standards (i.e., NGSS, Common Core, Head Start, NAEYC) as well as nonformal education standards (i.e., 4-H, Scouts, FOSS)
- 2 PLT in-person, blended, and online professional development opportunities give educators the confidence to take their students outdoors to learn.
- 3 Access a supportive network of formal and nonformal educators and partners across the U.S.
- 4 PLT activities help improve students' critical-thinking and analytical skills, creativity, and collaboration.
- 5 PLT connects students and educators to nature, providing social, emotional, and health benefits.



June 9 - 14 2024



Join us at the beautiful FFA Camp Muskingum on Leesville Lake!

Registration is open at
campcanopy.com

Students who have completed the eighth grade through high school seniors graduating in 2024 are eligible to attend.

Camp Canopy 2024 will explore forests and creeks with sessions focused on **tree ID, insects, fungi, and amphibians.**

Venturing into Vernal Pools

By Linda Pettit, Franklin County Soil and Water Conservation District

Often hidden in the shadows of woodlots and forests, vernal pools are wetlands, filled with life as our landscapes come alive in the spring. They are commonly heard before they are seen, as frogs and toads begin calling for mates on warmer days in late February and early March.

Vernal pools are small, temporary, fishless, shallow depressions that fill with water during certain seasons of the year, giving us the **ephemeral** connection. They can be formed in a variety of ways, for example when the roots of a tree are pulled out of the ground, and the remaining hole fills with water for part of the year. Shallow depressions may also have been carved by glaciers, scoured by rivers and streams or formed by slumping ground when underground limestone is dissolved.

These small natural features have important impacts. They provide habitat for thousands of species, some of which depend on these specific wetlands for survival. In addition, the pools can reduce flooding, help restore needed groundwater, clean surface water and provide educational and recreational opportunities.

A high percentage (85%) of amphibians return to breed in the vernal pool in which they were born. Among the creatures that use vernal pools to reproduce, spring peepers (small tree frogs, ~0.75"-1.25" long) are known for their loud calls. If you are one and a half feet from a single peeper, its call is as loud as the sound of a motorcycle from 25' (90 decibels). From a distance, the calls of a chorus of peepers are quieter, 65 decibels, the volume of an average bar conversation—still rather loud if you're near it on a quiet spring evening. Other vernal pool inhabitants, such as salamanders and the multitude of tiny organisms that live in the waters of the pool are silent to the human ear.

All of the creatures that live in and use vernal pools have to be able to adjust to the fact that the pools dry out. Allowing their young as much time as possible to hatch before the pool could dry up, wood frog adults can survive being partially frozen and are among the first amphibians to enter the pools to breed towards the end of winter. Spotted salamanders migrate—often in a large group—to vernal pools in early spring, ensuring that they will be able to find a mate as soon as possible.

Vernal pools are a very important part of the landscape in Central Ohio. They need to be protected because they are difficult, if not impossible, to replace. Supporting and/or being a part of the Ohio Vernal Pool Network is one way that you can keep informed and help protect this vital natural resource.

Franklin SWCD has more information and activities regarding vernal pools at https://www.franklinswcd.org/data/doc_lib/1273/Swiftlet-18-February-Activity-VenturingIntoVernalPools.pdf

Questions to Extend Learning

Why do you think some animals lay their eggs in vernal pools instead of lakes or ponds?

Consider exploring the same vernal pool at different times throughout the year. What changes do you observe? Identify three things that are similar and three things that are different.

Have you ever used iNaturalist? This app allows you to explore and share Citizen Scientist data about living organisms. Consider joining the Ohio Vernal Pool Network project to share the organisms you find in vernal pools!



Save the Date

February 27, 2024
4:15 p.m.

Learn about the eclipse from astronomy expert, author and emeritus director of the Pacific Science Center, Dennis Schatz!

The presentation will cover a variety of eclipse related topics but will focus on lessons to use with students.



Register at
<https://bit.ly/EclipseTalk>



Environmental Career Ambassadors

Environmental Career Ambassadors are environmental professionals willing to make classroom or school career fair presentations for middle and high school grades about their careers and/or provide shadowing, internship, field trip, and scholarship opportunities to Ohio students. <https://eeco.wildapricot.org/eca>

For Schools

- To invite a Career Ambassador to your classroom or event, please contact the EECO Executive Director director@eeco-online.org.
- Videos: There are numerous video available at <https://eeco.wildapricot.org/eca> covering a multitude of environmental professions.

For Environmental Professionals - If you would like to be more involved by volunteering to be a Career Ambassador, please contact the EECO Executive Director director@eeco-online.org.



**SEEKING
ENVIRONMENTAL
CAREER
PROFESSIONALS!**

Inspire students to choose environmental professions by participating in a video about your occupation and career pathway.

Interested?
Email director@eeco-online.org

**GET
INVOLVED
WITH
CAREER
CHATS**



Hellgrammites

Water Quality Monitoring Credible Data Training: Level 1

**At the Shelby Soil and Water Conservation District
822 Fair Road Sidney, OH 45365**

Level 1 was designed with educators in mind and may be appropriate for soil & water conservation districts, park districts, health departments, or anyone with an interest in Ohio water quality. The purpose of Level 1 is primarily to promote public awareness and education about surface waters

of the state. Approval of Level 1 QDC will be automatic by the Ohio EPA after completion of this training. Healthy Water, Healthy People Curriculum will be used in this training.

Please bring with you: Waders or shoes you don't mind getting wet and wear old clothing for this training.

Cost: There are no fees associated with this training other than your traveling costs. Shelby SWCD will be our local host. They will be providing doughnuts and coffee in the morning and a catered lunch around Noon. Please note any dietary concerns on the registration form.

Registration: You must register for this free workshop <https://www.eventbrite.com/e/training-water-quality-monitoring-credible-data-program-level-1-tickets-825654022407?aff=oddtcreator>

For more information, contact Dennis Clement, Ohio Environmental Protection Agency, Office of Environmental Education at dennis.clement@epa.ohio.gov or 614.644.2048.



New in the World of EE!

Meet Holly Tucker, Chief of the Office of Environmental Education at the Ohio EPA

Holly is joining EECO as she takes on the role as Chief of Environmental Education at Ohio EPA. She has worked at Ohio EPA for over 20 years, including over a decade as a fish-kicker in the Ecological Assessment Section, conducting electrofishing stream surveys across the state. Prior to joining Ohio EPA, Holly worked as an environmental consultant. She has a BS in zoology with a minor in communication and a MS in natural resources with an emphasis in fisheries, both from The Ohio State University. Throughout her career she has enjoyed participating in environmental education activities with all ages and is looking forward to engaging more in environmental education.



Educators' Week:

Life Beyond the Glacier

June 2 – 7, 2024 at Shawnee State Park

Join formal and non-formal educators in their quest for new knowledge and teaching techniques during Educators' Week in beautiful Scioto County, Ohio. Educators' Week provides opportunities to gain an understanding of topics related to state academic standards by being immersive in a natural setting and creating a supportive learning environment. Attend sessions that will explore hands-on best practice strategies for introducing people to the natural world. Learn from top experts on a wide range of cross curricular topics and explore new methods that will enhance your skills as an educator.

Registration is now open! <https://educatorsweek.com/>

Let's Get Outdoors

Educators Series

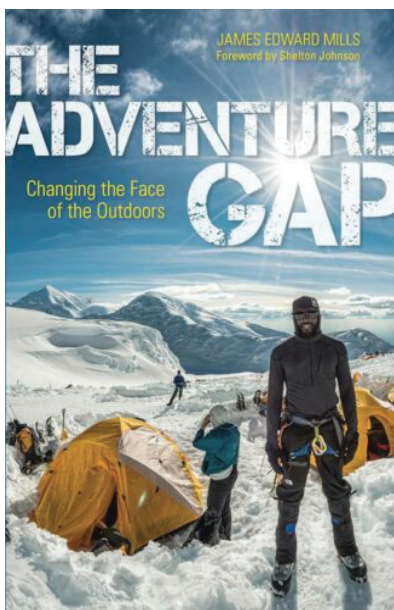
Feb 29 - March 14, at Armco Park, Lebanon, OH

Cost: \$10 per hour Register for all 8 sessions and receive a \$10 discount

These eight sessions are designed to build on each week. You can earn nine Ohio Approved hours if you attend all sessions. Not only will the sessions up your knowledge of nature, but you'll learn the best practices of creating and evaluating outdoor classroom environments. Topics include, learning outdoors, senses, risks, and optimising learning in your outdoor play space.

To Register: Call Kim Allen at 513-758-1208

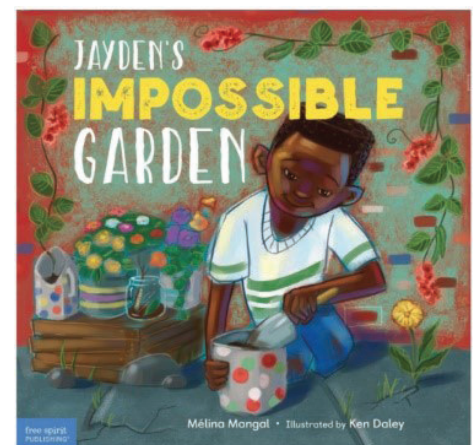
More details: at <https://www.co.warren.oh.us/parks/events/TeacherWorkshops.pdf>



Celebrating Black History Month & the Environment Through Literature

This Black History Month, Project Learning Tree is celebrating the individuals who are inspiring all of us to connect with the environment, whether through their work or through their beautiful words and illustrations about nature. There are great books listed for early childhood, elementary, and young and mature adults.

https://www.plt.org/recommended-reading/black-history-month/?utm_source=newsletter&utm_medium=email&utm_campaign=february_branch_2024&utm_content=button



Early Signs of Spring

By Melissa Proffitt, Warren County Soil & Water Conservation District



Spring Beauty



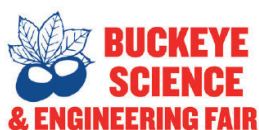
Yellow Trout Lily

While winter in Ohio lingers, the early signs of spring will begin to appear! Spring wildflowers will soon slowly display their colors as the early spring sunshine rivals the low temperatures and sporadic snow flurries. These early emergent flowers are referred to as ephemeral wildflowers as their beauty is fleeting, only lasting sometimes a couple days. These often-hardy species include the well named harbinger-of-spring, hepatica, and snow trillium. It is not uncommon for these early species to be blanketed by late snowfalls. They start the colorful scene of wildflowers that lasts through spring.

When out in nature keep your eyes on the forest floor for showing spots of early spring bloodroot and spring beauty bloom. Leaf clusters of shooting star and trout lily may be seen poking up through the snow. A closer look may reveal purple violets and grape hyacinth. The pink buds and blue flowers of Virginia bluebells will be easy to spot among the backdrop of a still muted winter landscape. Besides beauty, these ephemeral wildflowers are also essential resources to early emerging insects and returning migrants. Some of our pollinating insects have evolved relationships with specific ephemeral wildflowers. Some bee species feed exclusively from either the trout lily or Virginia spring beauty, while queen bumblebees in need of nourishment to establish new colonies depend on Dutchman's breeches. The deep blossoms pair with the insect's especially elongated proboscis in a natural fit.

Other insects use ephemeral wildflowers as nurseries for the next generation. For instance, Lyre-leaved rock-cress and smooth rock-cress (*Arabis*), two members of the mustard family of plants, host the eggs of the falcate orangetip butterfly. These special relationships are vital to these species survival.

So as the weather slowly warms, keep your eyes open for the early beauty of spring ephemerals!



Saturday, March 2, 2024

Held at CAS, 2540 Olentangy River Road, Columbus, OH 43202

We are in need of STEM professionals to score projects at the 2024 Buckeye Science and Engineering Fair (BSEF). We need all specialty areas, especially in Health and Medicine.

Register: <https://projectboard.world/oas/judge>

If you can judge online (because you cannot attend in person), please let Angie McMurray know amcmurry@ohiosci.org.

For additional information, visit: <https://www.ohiosci.org/bsef/>

EECO Volunteers

The Environmental Education Council of Ohio is in search of leadership for various committees and tasks. We also are looking for Environmental Career Professionals that can "chat" with students about their careers. If you would like more information please contact the EECO Executive Director at director@eeco-online.org

EECO is also seeking volunteers to assist at the Annual Conference, April 12-14 at Salt Fork State Park. You can help at check-in, be a driver for a fieldtrip, or assist in the silent auction, please contact Denise Natoli Brooks at dbrooks@centralstate.edu.



Contact EECO

Partnerships strengthen EE in Ohio, leading to a more environmentally literate population and a healthier environment. You are welcome to become a partner and friend to EECO. Please contact any of our regional directors, officers, advisors, and board members to find out more about becoming a part of EECO.

Regional Directors

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Linda Pettit, Franklin SWCD
lpettit@franklinswcd.org

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Jennifer Elsworth, Metro Parks of the Toledo Area
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Region 3 - NE Central Ohio

Sheila Cubick
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Region 4 - SW Central Ohio

vacant - contact Brenda Metcalf
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Region 5 - SW Ohio

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Region 5 - SW Ohio

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