

# E E C O

Environmental Education Council of Ohio



Spring 2021

Theme: We Love Ohio!

## We love Ohio!

### Share your Happy Place

Do you have a happy place in Ohio? For some people it may be at a mall or amusement park. However, for many of us working in Environmental Education, our happy places are out in nature. Many of us didn't need to read the many studies showing the benefits of being outdoors, this is already our home from home. Whether we head out for a hike to clear our heads, watch wildlife to escape from the office, or wade into the rivers just for the joy of being wet, the outdoors brings most of us joy.... and allergies. Throughout this issue, we have provided you an insight into some of the EECO board, advisors, and regional directors happy places. We would like to hear from you about the place that makes you love Ohio. Is it somewhere you vacation? Is it your local hiking spot? Is it where you caught your first fish? Where you went on your first date with your partner? Share your photos and thoughts with us [@environmentaleducationcouncilofohio](https://twitter.com/environmentaleducationcouncilofohio)

### Oak Openings Preserve Metropark

*Janet Elsworth, Toledo Metroparks*

Oak Openings Preserve Metropark located in Northwest Ohio takes its name from the surrounding region of global significance. The region is home to well over 100 state-listed, rare plants – the greatest number in Ohio. The Nature Conservancy once named the region one of two hundred 'Last Great Places on Earth!' Varied landscape that includes savannas, prairies, floodplains and swamp woodlands contribute to an array of amazing plants including Wild lupine, Spatulate-leaved sundew, and Prickly pear cactus. Notable wildlife such as Blanding's turtles, Lark sparrows, and American badger also call the area home. The natural history of Oak Openings Preserve is most closely linked to sandy, post glacial beach ridges left behind when ancestral Lake Warren shrunk to form present day Lake Erie. Although visitors missed the 'beach party' there are still plenty of ways to have fun at this park. Walking trails, horse trails, a cross-country ski trail, and the newer mountain bike trail traverse the landscape. In fact, there's really too much to see in a single day visit. Luckily for out of town visitors Oak Openings is also home to two campgrounds, two cabins, and the only public tree-house village in the country, where visitors can stay a while for a true Oak Openings experience. <https://metroparkstoledo.com/explore-your-parks/oak-openings-preserve-metropark/>



## Save the Date

### *STEM Lessons in Oil and Gas Energy Education*

K-5 STEM on June 14  
Grades 6-12 STEM on June 15  
Geology lessons on June 16  
Granville, Ohio  
[www.oogeep.org](http://www.oogeep.org)

### *Science of Food and Fuel Workshop*

June 29-30, Springfield, Ohio  
[www.nourishthefuture.org/events](http://www.nourishthefuture.org/events)

### *OEEF Letter of Intent Deadline*

July 8  
[www.epa.ohio.gov/oe](http://www.epa.ohio.gov/oe)

### *OEEF Grant Submission Deadline*

July 15  
[www.epa.ohio.gov/oe](http://www.epa.ohio.gov/oe)

### *Nature-Based Early Learning Virtual Conference*

July 26-30  
Register: <https://conference.naturalstart.org/>



## Annual Conference 2021 Highlights

Thank you to everyone who participated in the 2021 Virtual Annual Conference. We really appreciate all of our attendees, speakers, and sponsors.

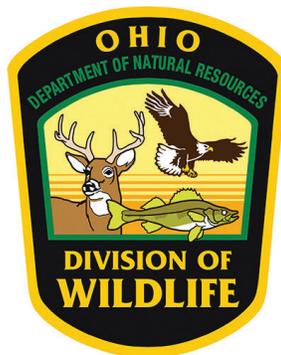
Thursday, we enjoyed sessions focusing on nature based early childhood education. Look for an early childhood strand during the 2022 in-person conference.

Friday, we had amazing virtual field trips, followed by fantastic environmental professionals who took part in the Environmental Career Fair. Videos from some of the career fair sessions can be found on the EECO website's *Students: Stem Careers* page <https://eeco.wildapricot.org/stemcareers>. Friday evening was well spent with the Nature Nerds Trivia night.

Saturday, along with Chris Meyers uplifting keynote, we held numerous concurrent sessions.

Much as we loved the ease of logging in from home, we will be in-person for 2022. The networking and brainsharing that goes on at the Annual Conference is impossible to recreate virtually. We look forward to seeing our EECO family, and welcoming new family members next Spring.

### Thank you to the 2021 Conference Sponsors



[neorsd.org](http://neorsd.org)

 [@neorsd](https://twitter.com/neorsd)

 [yoursewerdistrict](https://www.facebook.com/yoursewerdistrict)

# Ohio's Dragons

By Cindy Meyer, Warren County Soil & Water Conservation District



Did you know that Ohio has a diverse population of dragonflies and damselflies? According to Ohio Department of Natural Resources, Ohio has approximately 164 recorded species. Their brilliant colors and striking markings make them very fun to watch. The immature stages of all species are aquatic, and these animals are found in lakes, rivers, ponds, and streams throughout Ohio. Although many dragonflies and damselflies are prevalent, 13 species in Ohio are listed as endangered. These amazing creatures are indicators of excellent water quality and serve as barometers of the health of our waterways.

The family Odonata, which includes both the dragonfly and damselfly, has an amazing life cycle. According to Ohio Department of Natural Resources, “adults live a few weeks to a few months. The adults exist to reproduce and serve as great predators of insects such as mosquitoes and flies.”

“Mating dragonflies are referred to as being in tandem, and they couple together using specialized clamp-like structures. When transferring sperm, the pair assumes a ring-like position called the wheel position; somewhat suggestive of a valentine heart. Soon after mating, the adult female places her eggs into an appropriate substrate in a process called ovipositing. Depending upon the species, eggs might be deposited into water, saturated soil, on aquatic plants, or even drilled into plants or wet wood. From the eggs hatch larvae, which are sometimes called nymphs. These larvae are highly predatory, and are completely aquatic. In some species, larvae may take four years to reach the point of transformation into adults – far longer than the adult will live. When the larva is ready to transform to an adult, it crawls from the water and climbs onto adjacent plants. In an amazing metamorphosis, an adult dragonfly bursts from the shell of the larva.”

It is easy to tell the two apart. Damselflies have slender wings held over their back when at rest while the dragonfly has broader wings held outstretched at rest. Both species can be seen throughout the summer months near unpolluted water bodies such as rivers, streams, lakes, marshes, swamps, bogs, fens, or even temporary rain-pools.

Dragonflies and damselflies are among the only species that can fly in any direction (forward, backwards, and any other direction). These predators can change directions at lightning speeds to hunt for food – making them one of the most skillful aerial creatures.



## We love Ohio:

### The Ohio River

*Errin Howard,  
Riverworks  
Discovery*

The view overlooking the Ohio River from high atop Cliff Road in North Bend, Ohio.

### Gilmore Wetlands Preserve

*Lynn White, Butler Soil & Water Conservation District*

These wetlands, in Hamilton Ohio, are home to bald eagles, yellow crowned night herons, and more.

[www.yourmetroparks.net/parks/gilmore-metropark](http://www.yourmetroparks.net/parks/gilmore-metropark)



## We Love Ohio: Clifton Gorge State Nature Preserve

*Ryan Bourgart, Ohio EPA*

A plethora of blooming hepatica and Dutchman's-breeches brightly coated the hillsides in a pale glaze on a sunny spring morning. Being immersed in the beauty of nature usually calms me, yet on that day I was more nervous than ever, as I contemplated asking one of the biggest questions of my life. The fear was unfounded because, the lovely Jessica Wong, said yes on Saturday March 27, 2021 at Clifton Gorge State Nature Preserve in Yellow Springs. The blooms were even more brilliant as we enjoyed one of our most beautiful hikes. Clifton Gorge is now a very special place for us.

Some of our other favorite places are Blackhand Gorge State Nature Preserve, Christmas Rocks State Nature Preserve, and Miller Nature Sanctuary State Nature Preserve.

<https://ohiodnr.gov/wps/portal/gov/odnr/go-and-do/plan-a-visit/find-a-property/clifton-gorge-state-nature-preserve>



## We Love Ohio: Southern Ohio

*Jeff Montavon, Ohio EPA & EECO  
Vice-President*

This spot in Southern Ohio is where I call home. It's just a short drive from Shawnee State Forest, the Edge of Appalachia Preserve, Otway Covered Bridge, and the Great Serpent Mound. There are lots of great opportunities to get out and enjoy the outdoors. Whether you prefer to tromp through a creek, hike through the hills or build a campfire and enjoy the evening, there's no lack of activities to enjoy.

I watched Night of the Living Dead for the first time in that old farmhouse. It's also a perfect setting to make those old horror movies a little extra spooky.



## Support EECO ...by making a donation

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. Find out more at

**Direct Donation:** You can easily make a direct donation through your Google account. Your full donation amount will go directly to EECO.

**Legacy Donation:** Consider making a legacy donation to EECO's endowment fund at The Columbus Foundation.

<https://eeco.wildapricot.org/support>

## Other ways to support EECO:

**Amazon Smile.** Select the "Environmental Education Council of Ohio" as your charity.

**Goodshop.** Shop hundreds of popular retailers at [Goodshop](#), purchases will benefit EECO.

**With office supplies** from our [amazon wishlist](#)

# Diversity and Inclusion Coffee Conversation

## Session #1 Diversity and Inclusion in the Work Place

June 15th from 2:00-3:30

We would like to invite you to participate in the first, of hopefully many, conversations hosted by the Association of Fish and Wildlife Agencies Diversity and Inclusion Working Group on Tuesday, June 15, 2021, from 2:00-3:30 EST.

With the growing effects of Climate Change, the expanded challenge of increased Urbanization, a more diverse world population, economic versus environmental issues, and skepticism surrounding both science and government, the field of Natural Resource Conservation is more important than ever. The talent needed to address current and impending habitat and nature deprivation challenges is critical not only to our ecosystems, but also to our economy. Creating inclusion in our work and volunteer cultures is paramount to addressing the support needed to properly address our fast-changing environment.

Natural resource organizations have had conversations in the past, and some have developed strategic plans focused on diversity and inclusion. However, according to a recent report by Dr. Dorceta Taylor of Yale School of the Environment, few natural resource conservation focused organizations, government, NGOs, or educational institutes, have successfully followed through on their plans.

During this conversation, we'd like to discuss the possible reasons for hesitance to execute on DEI plans, address possible fears or misgivings about what it takes to be inclusive, and discuss how personal perspectives on communication can possibly cause a roadblock to progress towards creating a more welcoming work environment. Perhaps the most challenging part is just getting started. We plan to have a robust conversation and dialogue with an opportunity for questions, concerns and ideas to surface within an open, welcoming and courageous space. We also hope that this will be the beginning of an on-going forum for DEIJ topics and conversations. We look forward to "seeing" you on Tuesday, June 15, 2021, from 2:00-3:30 EST.

**Register in advance:** this meeting is limited to 300 attendees:

<https://fishwildlife-org.zoom.us/meeting/register/tJMofu2urTksEtIXpdGDSZsMmwFanpenwBjG>

## ODNR Conservation Teen Advisory Council is Accepting Applications

The Ohio Department of Natural Resources (ODNR) is looking for highly motivated high school students who are driven by their passion for Ohio's great outdoors to serve on the Conservation Teen Advisory Council (ConTAC). ConTAC provides a unique opportunity for high school student-leaders from diverse backgrounds across Ohio to work together and contribute ideas to enhance ODNRs youth outreach and program efforts. ConTAC is a great place for students to meet new peers from across the state with similar interests, develop leadership skills, and provide outdoor opportunities to youth from the shores of Lake Erie to the rolling hills of Appalachia.

**Meetings:** The Council is split into five regional teams. The teams will begin meeting later this summer and will meet monthly, virtually or in-person, depending on health orders.

**Eligibility:** Seeking highly motivated students entering grades 9th-12th of the 2021-2022 school year who are interested in natural resource conservation, outdoor outreach, wildlife, or simply making a positive impact within the Buckeye State.

**How to Apply:** High school students for the 2021-2022 school year interested in ConTAC should visit <https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/education-training/contac> for information on how to apply. **Applications are due by June 4, 2021.**

**Find Out More:** <https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/education-training/contac>

# 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 monies from one-half of the civil penalties collected from violations of Ohio's air and water pollution control regulations. <https://epa.ohio.gov/oe/>

## 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 by 5:00 p.m. on Thursday July 8th.

**Application Deadline** is 5:00 p.m on Thursday July 15th.

## Grant Writing Workshops

The Ohio EPA Office of Environmental Education typically offers grant writing workshops around the state throughout the year. Once staff are able to travel again, the following workshops will be offered. If interested in finding out more, please contact Dennis Clement at [dennis.clement@epa.ohio.gov](mailto:dennis.clement@epa.ohio.gov)

- 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.

# Teachers, Industry & Environment (TIE) Conference

October 13-15, 2021 at the Embassy Suites in Columbus, Ohio

For more than two decades, the TIE Conference has allowed 3rd through 8th grade science teachers from across Ohio to experience an intensive two and a half days of dynamic presentations, experiments and workshops that enable them to take exciting hands-on science projects back to the classroom. Additionally, the TIE Conference is completely free for participating teachers through the support of scholarships from the chemical manufacturing industry.



**COVID-19 Update:** We know there is a lot of uncertainty right now, especially for our educators. We want to assure interested teachers that by registering for the TIE Conference at this time, they will NOT be held responsible for payment or confirming their attendance until we approach the conference. We remain hopeful that we can hold the TIE Conference this October and ask that you continue to share this amazing opportunity with your educators so we can secure their spot. OCTC will continue to monitor the events of COVID-19 and will send updates as needed.

**Cost:** Completely free through the support of the chemical manufacturing industry.

**Sponsored by:** Ohio Chemistry Technology Council and Ohio EPA OEE

**Questions:** Please email us at [info@ohiochemistry.org](mailto:info@ohiochemistry.org)

**Find out more:** at [www.ohiochemistry.org/aws/OCTC/pt/sp/tieconference](http://www.ohiochemistry.org/aws/OCTC/pt/sp/tieconference)

# Water Quality Monitoring Credible Data Program: Level 1 Training

Wednesday, September 23, 2021

8:00 a.m. – 4:30 p.m.

## Butler Soil and Water Conservation District

1802 Princeton Road, Hamilton, Ohio 45011

This training will be hands-on with all participants getting in the water to learn techniques for biological, physical, and chemical water quality monitoring. This is an entry level training intended for participants who desire basic water quality information. 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.

Workshop is limited to 20 participants. If Covid-19 restrictions are increased again, participants will be limited to 10 people. Social distancing and face masks will be required.

**Please bring:** Waders or shoes you don't mind getting wet, a brown bag lunch / drink, and wear old clothing.

**Cost:** There are no fees associated with this training.

**For more information:** Contact Dennis Clement, Ohio Environmental Protection Agency, Office of Environmental Education at 614-644-2048 or [Dennis.Clement@epa.ohio.gov](mailto:Dennis.Clement@epa.ohio.gov)

**Registration:** By e-mail ONLY on or before September 17, 2021, at [dennis.clement@epa.ohio.gov](mailto:dennis.clement@epa.ohio.gov).



# Teacher Field Days The Hemlock Ecosystem in the Hocking Region: Ecology, Economics, and Tourism

June 10-11, 2021

## Hocking State Forest

19275 SR 374, Rockbridge, OH

The Forestry on Ohio's Public Lands Series is offered by the ODNr Division of Forestry to provide your students with timely concepts and to help meet state standards in STEM and other topics. Learn about this critically important forest landscape, the multiple values of the hemlock ecosystems, and threats to this precious resource - all from experts in the field.

The Hemlock Ecosystem in the Hocking Region instruction and field experience is featured on Thursday, and a Project Learning Tree educator certification workshop occurs Friday.

**Graduate credit:** Available to purchase if you complete the assigned follow-up requirements.

Open to all teachers and will take place rain or shine. Dress for the woods.

**Cost:** \$25 Check or Money Order Payable to "PLT-Ohio". Send to: ODNr Forestry: David Parrott, 13291 US Highway 52, West Portsmouth, OH 45663. Lunches, water, and incidentals provided in registration fee. Class size limited.

**Registration:** <https://state.us20.list-manage.com/track/click?u=05a8989b2605f70e01b0d2024&id=c29b-9ba96e&e=2ecbb17587>

**Contact:** David Parrott, [David.parrott@dnr.state.oh.us](mailto:David.parrott@dnr.state.oh.us) (740) 961-0314.

# An Im-peck-able EE Experience

## Professor Avian Guano, Bir.D.

Those who remember Dr. Avian Guano's keynote and Denny Olson's storytelling workshop at EECO's 50th anniversary conference in 2017 will be interested in how he's pivoted to provide three new teaching resource videos available free of charge at the Flathead Audubon Society's website <https://flatheadaudubon.org/>. Here's what Denny has to say about this entertaining creation:

"When all of our field trips and classroom presentations and trunks were rendered moot by the pandemic protocols, it was the perfect time to call up some video production skills I refined over the years. There were some obvious 'making lemonade with the gifted lemons' reasons for going virtual, but it was also an opportunity to expand our reach to a wider audience, and make some resources that could be usable far beyond our pre-pandemic efforts at bird education. It also presented an opportunity to relate birds to the bigger picture (our survival as a species, and the connections of everything to everything). And, with things returning to a version of 'normal', the video trilogy will continue to be useful as an introduction to the sheer wonder of birds ("Birds Rock!"), their difficulties in the last few decades and future prospects ('Bird Trouble') -- and what WE might do to help them restore their roles in our world ('Bird Help'). I've produced video versions of presentations on

Sandhill Cranes and a video workshop on

Learning Bird Songs just lately, and the next big project is a video on the intricate relationships between native plants, native insects, and native birds -- to purge the 'invasives' from our lives (both figuratively and literally!).

My overarching goal, of course, is to get children and adults outdoors to develop their own relationships with the natural world, so I look at these videos as an inspiration and stimulus to start that process where a lot of folks reside all too much -- the virtual world. Technology can't feed us, provide us with clean air and water, or protect us from itself. We have a real world out there that technological innovation can never hope to duplicate. And without a healthy relationship with that world, we have no hope of surviving in the long term."

It's a good EE resource and reminder to occasionally get away from the virtual and out to that world. Maybe these videos can help us in a world going stork raven mad, and tern things for the better for birds and all life.

<https://flatheadaudubon.org/lifelong-learning/flat-head-audubon-premieres-new-video-series/>



## We Love Ohio!

### Christmas Rocks State Nature Preserve

*Alli Shaw, Sharon Woods Metropark*

Christmas Rocks State Nature Preserve/Charles Goslin Nature Sanctuary is definitely my happy place. It's just southwest of Lancaster in Fairfield County and is a wonderful destination to get a good hike and enjoy nature in any season, any time of day. I've been there for sunrises and sunsets and rarely see more than 2 other people!

A few recent visits included many spring sights and sounds. A half-mile walk along the gravel township road past wetland pools offers sounds of wood frogs clacking, spring peepers peeping and skunk cabbage blooming. The ½ mile forest road (that turns into a trail) along Arney Run was a great place on my last visit for rufous-sided towhees and Louisiana waterthrushes serenades. Then it's up, up, up past woodland flowers, mourning cloak butterflies and later pink lady slippers. Chestnut oaks, a few species of pines and interesting-shaped mountain laurels welcome you to the top of Jacob's Ladder, a Black Hand sandstone formation. And you are rewarded by a gorgeous view of the valley below and a cool breeze. I like to continue down the trail and back to the parking lot, but there is another entire 1.5-mile hiking section in the Preserve/Sanctuary. Do keep in mind that as it's a state nature preserve, there are a few limitations (parking, no restrooms or fountains, no dogs.) Once you are back at the parking lot, save a few minutes to check out the awesome Mink Hollow Covered Bridge right beside it in tiny Arney Run Park (Fairfield Co Park District.) If you are on a day trip, Wahkeena Nature Preserve (Fairfield Co Park District) and Clear Creek Metro Park (Franklin County Metro Parks district) are nearby. <https://ohiodnr.gov/wps/portal/gov/odnr/go-and-do/plan-a-visit/find-a-property/christmas-rocks-state-nature-preserve>



# Great Readings

Kick back on your hammock or couch this summer with these great readings suggested by Ohio EPA staff.

These suggestions are not intended to be a comprehensive list – just some that Ohio EPA staff members found particularly inspiring or thought-provoking. Send suggestions to [oeef@epa.ohio.gov](mailto:oeef@epa.ohio.gov) page. We're also happy to loan out our office or personal copies if you can't find something online or in your local library.

This issue, we are sharing their non-fiction favorites:

- Edward Abbey, *Desert Solitaire: A Season in the Wilderness*
- *Beguiled by the Wild: The Art of Charley Harper*
- Wendell Berry, *The Gift of Good Land*
- Michael Braungart and William McDonough, *Cradle to Cradle: Rethinking the Way We Make Things*
- Rachel Carson, *Silent Spring*
- Paul Hawken, *The Ecology of Commerce Revised Edition: A Declaration of Sustainability*
- Paul Hawken, Amory Lovins, L. Hunter Lovins, *Natural Capitalism: Creating the Next Industrial Revolution*
- Jon Krakauer, *Into the Wild*
- Aldo Leopold, *A Sand County Almanac*
- Richard Louv, *Last Child in the Woods*
- Peter Matthiessen, *The Snow Leopard*
- Rick McIntyre, *The Rise of Wolf 8: Witnessing the Triumph of Yellowstone's Underdog (The Alpha Wolves of Yellowstone, 1)*
- John McPhee, *Encounters with the Archdruid: Narratives about a Conservationist and Three of His Natural Enemies*
- Roderick Nash, *Wilderness and the American Mind*
- Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*
- Michael Pollan, *The Omnivore's Dilemma: A Natural History of Four Meals*
- Joel Sartore, *The Photo Ark: One Man's Quest to Document the World's Animals, and The Photo Ark: Vanishing, the World's Most Vulnerable Animals*
- Gary Snyder, *Back on the Fire*
- Sandra Steingraber, *Living Downstream: An Ecologist Looks at Cancer and the Environment*
- Sandra Steingraber, *Having Faith: An Ecologist's Journey to Motherhood*
- Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*
- Jonathan Weiner, *The Beak of the Finch*
- Peter Wohlleben, *The Hidden Life of Trees*

# Great Resource

## Our Beautiful Planet Video Series

The National Science Teaching Association developed the Beautiful Planet Video Series to highlight research being done to solve the world's most pressing climate challenges. Accompanying these 5-10 minute videos are classroom-ready lesson plans that focus on science and engineering practices used to explain climate phenomena.

[www.nsta.org/  
our-beautiful-planet](http://www.nsta.org/our-beautiful-planet)



# Great Resource

## Debris Tracker App

8 million metric tons... That's how much plastic is estimated to enter the ocean every year.

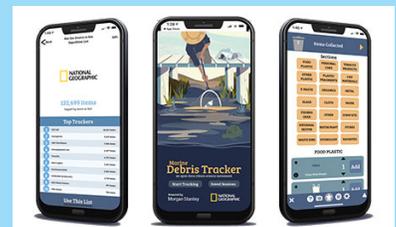
Help create a bigger picture of the plastic pollution crisis, by reporting litter wherever you find it, from our oceans to your backyard. Debris Tracker is designed to help citizen scientists, like you and your students, make a difference by contributing data on plastic pollution in your community.

App available on the App Store and Google Play.

This is a SciStarter Affiliate project.

Action journal and field guide available in the resources.

<https://debristracker.org/>



# Pool Water Drainage

By Sean Hudson, Butler Soil & Water Conservation District



Proper pool water drainage is an important step in protecting our natural waterways. Unlike water in streams, lakes, ponds, and rivers, water in swimming pools and hot tubs is treated to limit the growth of bacteria, parasites, algae, and other nuisances. Swimming pool water is not allowed to be drained to storm sewers or directly to streams and creeks due to the environmental hazards posed by pool treatment chemicals and the volume of water entering over a short period of time. The following guide outlines the proper steps necessary to ensure that your swimming pool water discharge complies with US and Ohio EPA best practices, and has a minimal impact on our environment.

A good rule of thumb, if any chemical you are using says “keep out of reach of children” it does not belong in the stormwater system or our waterways, and needs to be removed before it is released into the environment.

## Chlorine removal

Chlorinated swimming pool water is considered an illicit discharge into any stormwater infrastructure or surface water under the US Clean Water Act. Swimming pool water needs to be dechlorinated through chemical treatment, carbon filtration, or sunlight exposure to a level below 0.1 mg/l on a commercially available chlorine test kit. Chemical dechlorinators need to be added at the rate specified on the product label and allowed to circulate for the specified amount of time. Carbon filtration requires additional filters to be installed and is best discussed with a pool supply company. The chlorine used in swimming pools is not pure chlorine, it is a mixture of chlorine atoms and either sodium or calcium that forms reactive ions that attack organic matter. Chlorine ions will naturally break down in the presence of ultraviolet radiation. To use sunlight to remove chlorine, stop adding chlorine to the swimming pool, continue to run the circulation pump, and wait until the chlorine test kit returns an undetectable amount. While cost effective, lowering the chlorine content by sunlight exposure can take up to 2 weeks to reach an undetectable amount of chlorine.

## PH

Water in swimming pools is often treated to adjust the amount of acid or alkalinity for proper chemical disinfection. For discharge into the environment, the pH (a measure of acidity or alkalinity) should be between 6.5 and 8.5, which is the normal pH range for surface waters. Typically, pools are kept at a pH of 7.2 – 7.6 (slightly

alkaline), and water should be released as close to a pH of 7 (neutral) as possible.

## Draining

Once chlorine levels are undetectable and the pH is within the acceptable range, you can commence draining your pool. The best way to dispose of dechlorinated swimming pool water is to drain it to an area on your property that allows it to infiltrate into the soil without leaving your property. Because of the volume of water being released it is best to do this over a period of time to avoid creating a flooding, erosion, or nuisance insect issue. Additionally, such a large discharge of water may damage neighboring properties, which you may be liable for under Ohio drainage law.

Always check with your local sewer district to determine what the rules and regulations are for discharging pool water into the municipal sanitary sewer. Under no circumstances should pool water be drained into a septic system or around the leach field for a septic system, as this can cause costly damage to your septic system.

## Join Us

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

<https://eeco.wildapricot.org/joinus>

# We Love Ohio!

## An informal phenology guide

*Carolyn Watkins, Ohio EPA*

With thanks to our magnificent state and local parks and nature preserves!

**January** - The Winter Hike at Old Man's Cave, Hocking Hills State Park  
- Sledding at Highbanks Metro Park in Columbus and other parks

**February** - Maple Sugar Tapping in Geauga Parks

**March** - *Great Horned Owlets (and migrating Saw-whets) in Green lawn Cemetery, Columbus*  
- Great Blue Heron Rookery in Pickerington Ponds Metropark, Columbus  
- March 15 buzzards return to Hinckley  
- American Woodcock's Sky Dance – check for evening programs in your local parks

**April** - Spring wildflowers in the Arc of Appalachia Preserve System in Adams County  
- *Marsh Marigolds and Spring Peepers at the Cedar Bog Nature Preserve near Urbana*  
- *Fox Kits at Salt Fork State Park near Cambridge (EECO Annual Conference 2010)*

**May** - Warblers at Magee Marsh Wildlife Area west of Port Clinton in Ottawa County  
- Triliums and Skunk Cabbage in John Bryan State Park near Yellow Springs

**June** - *Lake Erie Sunset at Old Woman Creek National Estuarine Research Reserve east of Huron, also host of EECO's Environmental Educator Certification Program*  
- Canoe or bike along the Mohican River  
- Bike the Ohio and Erie Canal Towpath

**July** - Canoe or kayak the Lake Erie Islands Water Trails in search of the Lake Erie Watersnake  
- *Glacial Grooving at Kelley's Island State Park*

**August** - Ohio River Paddlefest, Cincinnati, first Saturday  
- Bike the Creekside, Great Miami, Mad River, and Stillwater River Bike Trails, Five Rivers Metroparks, Dayton

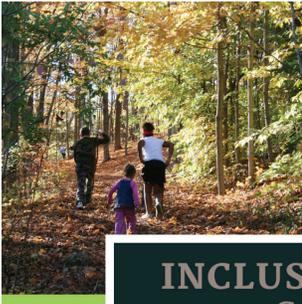
**September** - Sandhill cranes migrating, Ottawa National Wildlife Refuge in Ottawa County and other wetlands  
- Explore ancient earthworks at the Hopewell Culture National Historical Park, or the Serpent Mound

**October** - Skip the crowds at Old Man's Cave and catch the vistas on the Upper Rim Trail at Conkles Hollow State Nature Preserve in the Hocking Hills  
- Canopy Walk in Holden Arboretum near Kirtland

**November** - Lookout Trail built in 1938 by the Civilian Conservation Corps, Shawnee State Park near Floodwall murals in Portsmouth

**December** - Winter stargazing and planetarium at Geauga Observatory Park in the International Dark Sky system,  
- Christmas lights on the waterfall at Clifton Mill, Yellow Springs





**INCLUSIVE  
SAFE  
SPACES**

## Diversity Equity & Inclusion

At EECO, we are not experts in diversity, equity or inclusion. We are experts in

showing how learning occurs through environmental education. We all can learn to provide support of people of color and LGBTQ individuals. We can learn to provide safe spaces for all to come to know nature. We are an EE Community that can be the change we want to see in the world!

Last September, EECO held their first ever DEI Listening Session. We plan to have more discussions and zoom table talks to continue this dialogue of how we can make the field of environmental and outdoor education a more inclusive and safe space for people of color. We also want to encourage more students of color to feel comfortable going into green careers as well as supporting environmentalism. A recording of the session can be found on the EECO website, along with resources that help us learn and bring about change.

<https://eeco.wildapricot.org/JEDI-Justice-Equity-Diversity-Inclusion>



## 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-** If you would like to have a Career Ambassador come to your classroom or event please contact the EECO Executive Director [director@eeco-online.org](mailto:director@eeco-online.org).

**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](mailto:director@eeco-online.org). You can also check out the the Environmental Professionals Network (EPN) hosted by the School of Environment and Natural Resources at The Ohio State University. <https://epn.osu.edu/>.

## We Love Ohio!

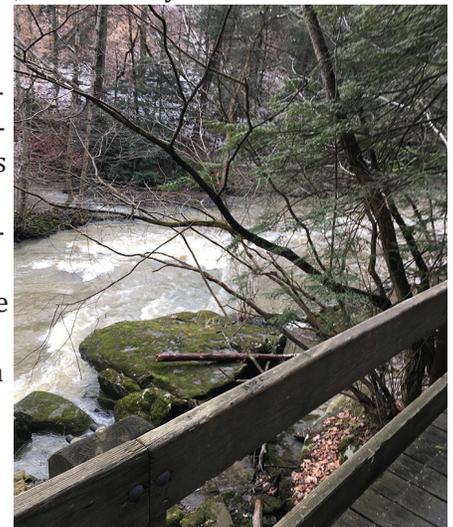
### The Green Cathedral: Mill Creek Metroparks

*Sheila Cubick, Area 3 Regional Director & Believe in Ohio*

EECO Region 3 boasts many lovely natural areas like Nelson Ledges in Trumbull County, the entire scenic northern stretch of the Ohio River, the lovely tranquil Tuscarawas River scenes along the Ohio & Erie Canalway, and many others which I enjoy visiting. But my favorite place for its variety of natural areas, accessibility for urban and rural



hikers, and its historical importance for the citizens of the Mahoning Valley is Mill Creek Metroparks. It truly is The Green Cathedral! One of my favorite spots for a winter hike is the gorge trail from Lanterman's Mill to the Silver Suspension Bridge. This hike allows views of the gorge, rock formations, caves, and large ice formations. The steep slopes can be quite exciting when the trail is icy and you begin the slide toward the side hoping you can gain some traction before you get up close and personal with the icy water. Good times! [www.millcreek-metroparks.org](http://www.millcreek-metroparks.org).



# Meet EECO

We would like to introduce you to the EECO family. Each issue, we will highlight one or two EECO individuals. They may be regional directors, advisors, board members, advisory council members, or members.

## Region 2 Director

### Jennifer Elsworth, Toledo Metroparks

[Jennifer.Elsworth@metroparkstoledo.com](mailto:Jennifer.Elsworth@metroparkstoledo.com)

#### *First Job*

Sea World Ohio. No, I was not a whale trainer. I worked in Park Operations, which means I cleaned toilets, emptied trash cans, and swept up debris.

#### *Dream Trip*

That would be a toss-up between the Galapagos Islands or Iceland. In college one of our professors took a trip to the Galapagos Islands and showed us a slideshow of his pictures. The wildlife viewing there is amazing! Also in college, I trained an Icelandic Horse as part of one of my equestrian courses. They are definitely unique and I think it'd be neat to see them in their natural habitat.

#### *What is something few know about you?*

In graduate school, my capstone project involved studying karst geology in Upstate New York. I got to explore and map primitive caves.

#### *What inspired me to pursue a career in Environmental Education?*

A family trip to Mammoth Cave in Middle School inspired me to want to become an interpretive naturalist. Shortly after I graduated from college, Metroparks Toledo had an opening for a naturalist so I applied and was hired in.

#### *Your favorite park visited?*

The Aldo Leopold Foundation in Baraboo, WI. Aldo Leopold is known as the Father of Wildlife Conservation. His most notable work was a book called A Sand County Almanac. It was amazing to see the landscape in person that inspired that work and visit 'the shack' which is a National Historic Landmark.

#### *What is your background?*

I have a Bachelor's in environmental science and Master's degree in geosciences. Currently, I am the Park Programming and Interpretation Coordinator and currently serve as the Historic Programs Supervisor.



## EECO Advisor

### Ryan Bourgart, Ohio EPA

[ryan.bourgart@epa.ohio.gov](mailto:ryan.bourgart@epa.ohio.gov)

#### *What interested you in the environment?*

A Chicago suburb native, I grew up loving being outdoors through playing sports. I didn't get hooked into the environmental field until a course in high school. Then I rampantly read everything I could, becoming incensed in an adolescent way about environmental destruction. I turned that anger into scholarly fervor pursuing a bachelor's degree in environmental science from Valparaiso University. I researched climate variables and soil respiration as an intern at Argonne National Laboratory, explored retreating glaciers through a field course in Alaska, and even toured in an honors band in Australia and New Zealand. These scholarly experiences, especially Alaska and abroad, were the first taste I had of nature, and I wanted more.

#### *Where did you gain experience?*

After graduation, I became enamored with the prairie, leading interpretive hikes for students while interning at Neal Smith National Wildlife Refuge in Iowa. I was immersed in the mysteries of the Chicago forest preserves while working seasonal positions in ecological restoration and as an environmental educator. In 2013, I lived a dream of extended camping in semi-remote nature while maintaining trails as an intern in the National Forests of California. After that internship, I returned to Chicago and worked in consulting soil sampling for construction projects. After about a year detour away from the environmental field, I pursued my master's in environmental science from Miami University.

#### *What is your current job?*

In 2019, I got the best Earth Day present—a job working for Ohio EPA as an environmental public information officer. I focus on grant coordination for EE and vehicle replacement projects and do occasional EE presentations. I've earned my role through hard work and dedication to the environmental field, which I learned from my parents. Without their example of a strong work ethic and their encouragement to follow my calling, I wouldn't be who I am, and I am deeply grateful.



# 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

### Region 1 - Central Ohio

Linda Pettit, Franklin SWCD  
[lpettit@franklinswcd.org](mailto:lpettit@franklinswcd.org)

### Region 2 - NW Ohio

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### Region 3 - NE Central Ohio

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## Advisory Council

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