

EECO

Environmental Education Council of Ohio



Spring 2019

Wondering About Wildlife

Citizen Science – Reptile and Amphibian Study

By Nicole Hafer-Lipstreu, Environmental Specialist, ODOT District 5

Formerly with the Muskingum SWCD

In 2016, when I was the Education/Wildlife Specialist with the Muskingum Soil and Water Conservation District, I had an idea. I wanted to start a Citizen Science Project to educate people about reptiles and amphibians. The project was a first for me and not something



Northern dusky salamander
(iNaturalist)

that had been attempted in this area. How I started the project, its success, and what I have learned can inspire anyone who doubts the power of Citizen Science.

No project can be successful without achievable

goals. My goals were to identify species of reptiles and amphibians in Muskingum County, track their distribution throughout the county, and raise awareness of the importance of these animals. To meet these goals, I started the Muskingum County Reptile and Amphibian Survey to enlist the help of the public to collect data, and to involve people in a process that encourages inquiry, discovery and ultimately appreciation.

We started by asking what data was needed to be useful to the scientific community. Collecting data is only valuable scientifically if it's what people actually need. Second, I developed collection outreach materials that were readily available to anyone and easy to understand. The brochure explained exactly what information I needed, how to collect the information, and how to get the information to me. Included in the materials was a downloadable PDF field guide for Ohio species that could be printed and taken out in the field.

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Save the Date

OEEF Grant Deadlines

Letter of Intent July 9 & Application Due July 16

Grant Writing Workshops

April 9, Clermont County Engineers Office, Batavia
September 5, Ottawa SWCD, Oak Harbor
October 3, Belmont College

To register, please see www.epa.ohio.gov/calendar/oeef

Annual EECO Conference

April 4-7, 2019, Mohican State Park

Student Wildlife Research Symposium

April 4 2019, Mohican State Park before the EECO Conf

Combined Project WILD

April 10, Sandusky County
See wildlife.ohiodnr.gov/

EE Certification class

July 15-19 at Old Woman Creek National Estuarine
Research Reserve near Huron.

Project Learning Tree Facilitator Workshop

July 16 & 17 in Canton, Ohio

Healthy Water, Healty People/ Level 1 Data Collector

August 8, Wildwood Metropark, Toledo

48th NAAEE Annual Conference

October 16-19, Lexington, Ky

EECO 2019 Annual Conference

“Say Yes to New Adventures”

April 4-7, 2019 • Mohican State Park

CEUs and College Credit Available!

Conference Strands:

- Stewardship, Conservation and Responsibility
- STEAM (Science, Technology, Engineering, Art, and Math), Outdoor Learning, & Careers
- Strategic Growth for Organizations
- Adventure and Outdoor Skills

Conference Highlights

- Friday Night Speaker/Author Lous Andres will talk about the history of the Pleasant Hill dam
- Kids Conference- On Saturday, while you are attending the conference, your children can attend the kids mini conference. Suitable for ages 6 and up. See below
- Saturday Lunch Keynote: Britt Ahart, Star of the History Channel Reality Show *Alone*
- Educational field trips

More information including registration are available at <https://eeco.wildapricot.org/>

Thank you to our sponsors



EECO Kids Conference

During the EECO Annual Conference

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!

Cost: A \$10 fee per child will be charged at registration. Lunch is not provided. Children's meal tickets will be available at the registration table.

Register: Call 740-653-2649 or email director@eeco-online.org

9:30 am—10:30 am **River Reborn:** Let's make gooey batches of BLACK SLIME and become scientists that help clean a river that once caught on fire! We'll explore bugs, fish and other animals that depend on clean water to survive!

10:45 am—11:45 am **Wetland Ambassadors:** Come learn about Ohio wetlands and meet some creatures that call them home! Learn how you can become a wetland ambassador!

2:15pm—3:15pm **The Giant Swing at Nuhop:** Experience a high-flying adventure on Nuhop's Giant Swing. Just like a regular swing, only Giant-er! Giggles and squeals echo across the hills as you WOOOSH through the air under the instruction of some awesome Camp Nuhop staff members!

3:30pm—4:30pm **Awesome 'Possum!** Don't miss your chance to meet a furry wildlife ambassador! Virginia, the Opossum will be the center of attention. Kids will learn about opossum life history and play a fun Opossum Game.

Upcoming Professional Development

WOW (Windows on Waste) Workshop

April 10th, 2019 9:30—3:00 at Richland County Solid Waste, Mansfield.

Cost \$7

To register, contact Joanne Mudra 418-892-3521 jcmudra@gmail.com or Marti Kolb 740-973-1195 marti@martikolb.com.

Forestry on Ohio's Public Lands Teacher Field Days

June 4 & 5, 2018 at Vinton Furnace State Forest "The Birds of Vinton Furnace - Songs of the forest!" Contact Greg.smith@dnr.state.oh.us

PLT Facilitator Training

July 16-17 at Sippo Lake Park in Canton, OH. Registration costs \$75. To register, contact Samantha Clyde at scllyde@stakparks.com or (330) 409-8997. See flyer <http://forestry.ohiodnr.gov/portals/forestry/pdfs/events/1907PLTFacilitatorTraining.pdf>

101 Conference

Saturday October 12th at YMCA Camp Kern
Optional events on Fri Oct 11 and Sun Oct 13.
\$30 for all 3 days of sessions, room & board.

<https://campkern.org/environmental-education.html>
Email Dave Moran to register dmoran@daytonymca.org

Healthy Water, Healthy People workshop/Level One Qualified Data Collector certification in water quality

August 8, 8:00 a.m. – 4:30 p.m. at Manor House, Wildwood MetroPark, 5100 Central Avenue, Toledo.
Email Dennis.Clement@epa.ohio.gov to register.

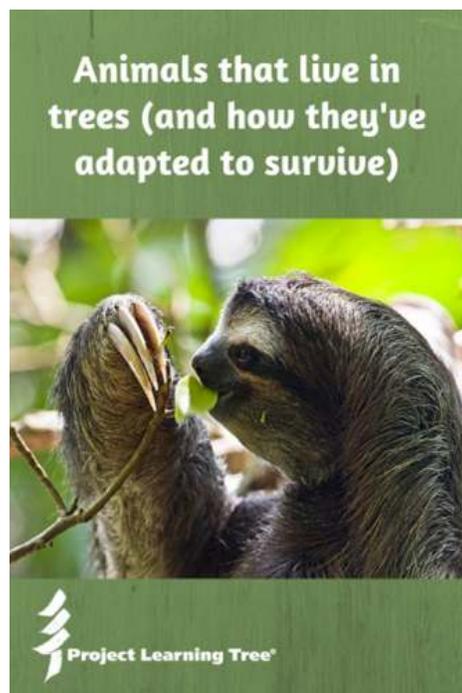
48th NAAEE Annual Conference

October 16-19 in Lexington, Ky
North American Association for Environmental Education's 48th Annual Conference.
<https://naaee.org/conference>

Educational Resources

Women Branching Out: A diversity of careers in arboriculture and urban forestry

5 minute youtube video highlighting many forestry career options.
<https://www.youtube.com/watch?v=K8wdMseQaqI>



Animals That Live in Trees

What do sloths, koalas, flying snakes, geckos, tarsiers, and opossums all have in common? They form an interesting group of organisms that are adapted to tree-top living. Arboreal animals spend most of their time eating, sleeping, playing and raising their young in the trees.

Tree-top living has many challenges, and these critters have some very specialized adaptations that allow them to be successful tree-huggers. The adaptations highlighted here will give you a fascinating way to introduce the study of how animals use their body parts in different ways to survive in their habitat. Studying tree-dwelling animals can also enhance your lessons on ecosystems, food webs, and biodiversity.

Check out Activity 22—Trees As Habitats in PLT's PreK-8 Environmental Education Activity Guide. In this activity, students inventory the plants and animals that live in, on, and around trees and discover how plants and animals depend on trees in many ways.

https://www.plt.org/educator-tips/animals-live-trees?utm_medium=email&utm_source=sharpspring&sslid=MzU2MbE0NbW0MLU0BQA&sseid=M7QwMTU0NjQyMwcA&jobid=9e1dc70e-0c7d-4345-a0f0-677b24991e91

Interning With Wildlife

Students at Miami University's Institute for the Environment and Sustainability pursue environmental science and sustainability careers in consulting, industry, government, education, and non-profit organizations. Representatives from industry, government, and consulting firms are frequently brought to campus to augment classroom instruction; students have many opportunities to interact and network with potential employers. Many students seek internships as a part of their program. These internships can focus on water quality, city planning, green energy, wildlife, and many other topics. Current graduate students have shared some of their experiences.

Cincinnati Zoo Internship

By Sara Rudokas, Graduate Student,
Institute for the Environment and
Sustainability at Miami University

Over the 2017 Summer and Winter I completed two internships at the Cincinnati Zoo and Botanical Garden. These internships were with Wild Encounters and the Animal Behavior department. Wild Encounters works with the zoo's animal ambassadors to bring visitors an experience that they won't forget. This department is responsible for encouraging visitors to get "close enough to care" to the wildlife. As an intern, I was responsible for animal handling demonstrations, staffing the feed-



ing stations, animal walks, as well as educational chats to large audiences. During the internship, I had the opportunity to interact with visitors and show them an animal they may have never seen up close. The wild encounters team carries out the mission of the Zoo, "inspiring every visitor with wildlife, every day" and along the way I gained valuable conservation communication skills as well as hands on wildlife experience.

As well as inspiring visitors with wildlife every day, the CZBG also is very involved with wildlife research. The Animal Behavior internship involved research on animal behavior through the Animal Excellence Coordinator at the Cincinnati Zoo. This department is concerned with implementing an evidence-based approach to animal care, excellence, and management. Zoological institutions place an emphasis on animal welfare

in order to provide their animals with the best possible environment. I was able to participate in many different research projects happening at the zoo which involved animal behavior observations on Asian elephants, manatees, and many of the zoo's mega fauna.

Find out more about internships at the Cincinnati Zoo at <http://cincinnati-zoo.org/about-us/job-opportunities/>



Red Wolf Sanctuary and Raptor Rehabilitation Center Internship

By Erin Dodd, Graduate Student,

Institute for the Environment and Sustainability at Miami University

This past summer I spent several weeks learning about wildlife rehabilitation and animal care at the Red Wolf Sanctuary in Rising Sun, Indiana. This property contains over 450 acres of land, most of which is set aside for conservation purposes. On the remaining 100 acres or so of land the owner, Paul Strasser, has set up enclosures for permanent animal residents (otherwise known as the sanctuary animals) and temporary animal residents that will be released back into the wild. Some of the sanctuary animals on the property are gray wolves, red foxes, skunks, bobcats, black bears, coyotes, and a variety of raptors. When this nonprofit was established in 1979 there were red wolves in the sanctuary, but today the sanctuary does not have any on the property. The population of red wolves has been declining both in the wild and in captivity.

While I was working at Red Wolf Sanctuary I completed a variety of animal care tasks. The most important, and fun, part of the day was feeding the animals. Diets consisted of donated food (after we checked that it was safe for the animals to eat) as well as food that the animal would consume in nature. For example, the wolves and coyotes frequently ate deer that was found dead by the road near Rising Sun. Cleaning the enclosures and filling up water containers also took up a large portion of the day. Cleanliness was extremely important to prevent the spread of disease and to keep the animals comfortable.



As my internship progressed I learned how important education and outreach are to the survival of the sanctuary. During the summer the staff gave tours to people every single day--often multiple times a day. These tours raise money for the sanctuary and help create a connection between people and wildlife. The best tours were with school groups because I got to watch them try to howl with the wolves. Occasionally throughout the year there are some big events to attract a lot of people. My favorite of which was the Bald Eagle release on Veterans Day. It was very satisfying to watch the bird I fed and took care of go back into the wild.

The red fox in this picture was placed into a new, more spacious, enclosure with another red fox. I spent about 30 minutes immediately after the release by the enclosure to monitor the foxes' reactions to each other. Throughout the day I, along the rest of the interns and staff, would periodically check in with the foxes to observe their behavior.

For almost all of the animals at Red Wolf Sanctuary, contact is kept at a minimum. I learned from the staff that animals undergoing rehabilitation should not be in prolonged contact with people because it can alter their behavior and cause them stress. Limiting contact the interns have with the sanctuary and temporary animals is also important for safety reasons, since these are wild animals that can behave unpredictably. For the four black bears at Red Wolf Sanctuary, there is absolutely no contact allowed due to these safety concerns. The picture on the left shows Pocahontas, affectionately called Poke by the staff, and the feeding tube we use so that we do not have to enter the enclosure.

Find out more about the Red Wolf Sanctuary at www.redwolf.org. Tours are by appointment only.

Miami University's Institute for the Environment and Sustainability
<http://miamioh.edu/cas/academics/programs/ies/>



Citizen Science – Reptile and Amphibian Study

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I offered multiple platforms to submit records including e-mail, iNaturalist App, Facebook, and hard copy, and all materials were approved by the scientists who would be using the data. All the materials were free and available to anyone else who wanted to duplicate the project elsewhere in the state.



Northern leopard frog (iNaturalist)

library branches, and anyone else who would let me speak to their group. I worked with our local TV station, radio stations, newspaper, and District staff created a page on the District website. I also utilized multiple social media platforms, mainly Facebook, asked people to share the information, and the survey had its own Facebook page, which was updated at least weekly. I asked everyone to participate in the survey and to share the information. Then I waited.

In the first year, I received 305 records of individual animals, 39 different species, 9 of which had never been recorded in the county before. More than 250 people submitted photos and data for the survey. These numbers indicate a much higher level of reptile and amphibian diversity that what was previously thought to be in this area, and the records included a Species of Special Concern (Four-toed Salamander) and two State Endangered Species



Eastern box turtle (iNaturalist)

Next, I needed to get people involved. I started an aggressive outreach program where I presented programs featuring live animal including information about the survey to schools, civic groups, community organizations, all local

(Eastern Hellbender and Eastern Spadefoot).

In 2017, we continued the survey and received a total of 89 individual animals, including the first Northern Copperhead recorded in the county in nearly 50 years. Many of the participants in the survey had submitted records the previous year. In 2018, we received 44 records, including a second Eastern Hellbender record. Although I have since left the District to take another position, the survey left with me and I plan to continue collecting data in 2019 via the survey Facebook page.

I often reflect on the success of this project. This was the first Citizen Science project I had ever attempted and I had no idea what to expect. What I learned both inspired

me, and gave me hope for the future of conservation. I was humbled by the community support for this project, and met some amazing people. I learned you don't have to have a huge budget to make a project succeed, but you need passion and people. There has been some debate as to the scientific accuracy of Citizen Science project data. Personally, data collection was a small part of my decision to start the survey, more important is the opportunity to educate people about these animals, and interest them in conservation. We all know it takes just one positive experience to get people interested in nature. In our passion to save the world, I feel like we often forget that for conservation to be successful on any level, you have to involve people. Citizen Science projects achieve that goal.

iNaturalist

<https://www.inaturalist.org/projects/muskingum-county-reptile-and-amphibian-survey>

Facebook

<https://www.facebook.com/muskingumreptilian-amphibiansurvey/>



Ringneck snake (iNaturalist)

Help EECO Grow

Would you like to help further environmental education in Ohio? Consider contributing to EECO. All donations are tax-deductible and will help increase awareness of environmental issues in Ohio.

Find out more at <https://eeco.wildapricot.org/support>

Other ways to support EECO:

- **Amazon Smile.** Select the “Environmental Education Council of Ohio” as your charity. Log into Amazon Smile every time you shop at Amazon.
- **Goodshop.** You can also shop hundreds of popular retailers at Goodshop, purchases will benefit EECO.
- **Direct Donation.** You can make a direct donation through your Google account. Your full donation goes directly to EECO.
- **Legacy Donation.** Consider making a legacy donation to EECO’s endowment fund at The Columbus Foundation.



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.

This career initiative was created to address various needs in Ohio. For instance, there is an emerging need to prepare students in fields emphasizing Science, Technology, Engineering and Mathematics (STEM) for careers in today’s high-tech economy. This initiative will also aid employers looking to hire professionals in environmental science and engineering as there is a reported shortage of qualified applicants.

Teachers. If you are interested in finding out about the Career Ambassadors available in your area, please contact us at director@eeco-online.org.

New Career Ambassadors Needed. If you would like to be more involved by volunteering to be a Career Ambassador you can fill out this form and email back to us at director@eeco-online.org.

The Environmental Career Ambassador (ECA) Initiative was created by the Environmental Education Council of Ohio (EECO) and the Ohio Environmental Protection Agency with the assistance of the Ohio State University School of Environmental and Natural Resources. Find out more at <https://eeco.wildapricot.org/eca>

How the Monarch Butterfly Population is Measured

The recent announcement that the overwintering monarch butterfly population has increased 144 percent since last year is great news, but might be a bit confusing. Aren’t monarch butterflies still in trouble? How many actual butterflies are there?

Find out more https://blog.nwf.org/2019/02/how-the-monarch-butterfly-population-is-measured/?s_email_id=220190224_MEM_ENG_WLO_February_Edition/MTMemHab



The North American Model and the Role of Hunting and Fishing in Wildlife Conservation in Ohio

By Jen Dennison, ODNR Division of Wildlife

Wildlife in North America belong to the public and are a natural resource. This is a unique philosophy around the world. In most other countries, fish and wildlife are the property and resource of the land owner or the wealthy. When Europeans first settled this continent, fish and wildlife were critical to their survival and were hunted and fished without regard to the impact on species populations, habitat conservation, local Native American populations, or general environmental im-



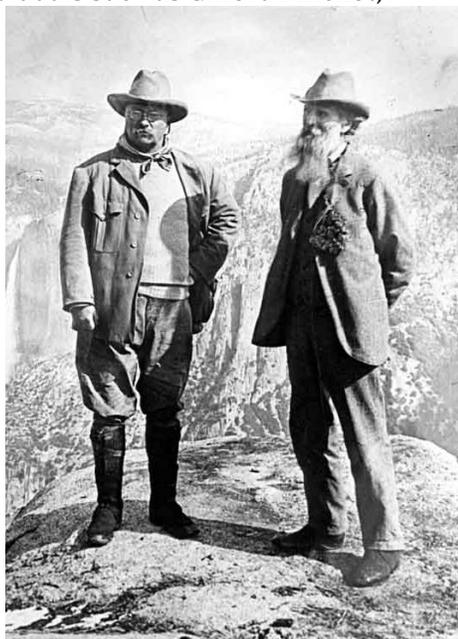
Passenger Pigeon

As human populations increased, so did the impact on the land and the overuse of wildlife for food, clothing, and sale to markets around the country. Several species, such as the passenger pigeon and the

Carolina parakeet, were lost entirely due to a lack of regulations and destruction of habitat.

Around the turn of the 20th century, some forward-thinking individuals such as Gifford Pinchot, George Bird Grinnell, Teddy Roosevelt, John Muir, and others began to call for limits on the destruction of habitat and the overtaking of fish and wildlife. These individuals paved the way for the North American Model of Wildlife Conservation.

This model has seven tenets. The following summary is from the 2018 edition of



Teddy Roosevelt and John Muir, Courtesy of The Bancroft Library, University of California, Berkeley.

Project WILD's K-12 Curriculum and Activity Guide:

- 1) Wildlife Resources are a Public Trust. The government manages wildlife on behalf of the public today and for future generations. States or provinces make and enforce most management regulations.
- 2) Elimination of Markets for Game. Laws prevent selling certain wild game meat or animal parts to unregulated markets. There are a number of cases in which wildlife products (fish, fur bearers, and certain game animals) may be sold; however, these markets are monitored and heavily regulated to ensure that harvest is sustainable. Laws prohibit the sale of certain nongame, threatened, or rare species.
- 3) Allocation of Wildlife is by Law. Governments use a process of public rulemaking to decide which species may be hunted or controlled in the public interest, and which species may be collected, hunted, or possessed by people. These rules are based on the needs of people and the impact on wildlife.
- 4) Wildlife is Killed Only for Legitimate Purpose. This tenet is subject to local, state, and regional needs, but its primary intention is to avoid the wasteful and indiscriminate killing of wildlife without purpose. Legitimate purposes typically include food, fur, and defending a person or property.
- 5) Wildlife Is an International Resource. Many wildlife species regularly move across national borders, such as waterfowl and songbirds. International agreements, agencies, and organizations help protect and manage these species. Federal agencies, in cooperation with state agencies, are legally responsible for managing wildlife that affects national interests, such as most threatened and endangered species and migratory wildlife.
- 6) Science-based Wildlife Policy. Science informs decision-makers when making wildlife policy and structuring management plans.
- 7) Democracy of Hunting. Laws offer the opportunity to hunt and fish to all people, not just those who are privileged.

These seven tenets are what wildlife management agencies in North America strive to follow to guide their decisions, practices, rules and regulations, laws, and policies regarding fish and wildlife populations in their state or region.

In Ohio, the ODNR-Division of Wildlife oversees fish and wildlife management. Part of that role includes setting regulations for hunting, trapping, and fishing in Ohio. Fees from licenses and permits make up most



of the agency's funding. There are federal excise taxes on hunting and fishing equipment and motor boat fuel that also support conservation efforts. And finally, donations and contributions to the Wildlife Diversity Fund

make up the rest of the Division of Wildlife's budget. Funds are shared with schools, universities, park districts, conservation organizations, and other groups interested in the conservation and protection of wildlife for research, habitat purchases, conservation education, wildlife rehabilitation, and more.

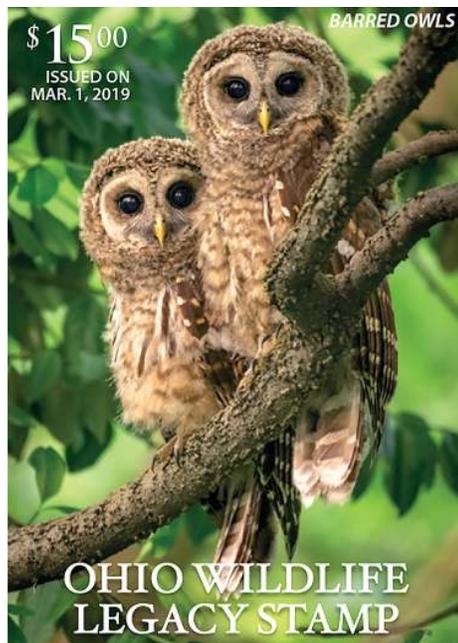
The Division of Wildlife receives no general revenue tax dollars to support its mission. Without hunters, trappers, anglers, and wildlife enthusiasts, conservation of Ohio's fish and wildlife species would not be possible. These conservation efforts include not only those animals that are hunted, trapped, and fished, but also Ohio's endangered and threatened species and their habitats.

This funding model has its limitations. As with other forms of outdoor recreation, there has been a significant decline in participation in fishing, hunting, and trapping. While wildlife observation and photography have increased at the same time, law does not compel those participants to contribute financially to the management of fish and wildlife. Without those revenues, the Division of Wildlife's ability to manage Ohio's fish and wildlife is more limited. This problem is occurring across the country. State and federal agencies are trying to increase participation in hunting, trapping, and fishing through recruitment, retention, and reactivation of hunters and anglers, as well as searching for other sources of funding such as sales tax initiatives, lottery funds, and fuel extraction taxes to boost funding levels in fish and wildlife agencies. Without a change in the funding model and/or an increase in participation revenues, fish and wildlife management has a murky future.



2017 Wildlife Legacy Stamp

Contact the ODNR-Division of Wildlife for more information about Project WILD and our other education and outreach programs and for further information at 1-800-WILDLIFE or outdoor.education@dnr.state.oh.us



Ohio Wildlife Legacy Stamp

The Ohio Wildlife Legacy Stamp is celebrating its 10th year of supporting native habitats and the species that depend on them in 2019. Buying a legacy stamp from the ODNR Division of Wildlife allows enthusiasts the opportunity to directly impact the future of Ohio conservation. For \$15 you'll receive a collectible stamp, window cling, and commemorative card. The 2019 Ohio Wildlife Legacy Stamp image is a pair of juvenile barred owls. This is the first time in its 10-year history that more than a single animal has appeared on the stamp. Of the \$15 purchase price, \$14 goes to the Wildlife Diversity Fund. Stamp proceeds support activities aimed at protecting and increasing native species through wildlife and habitat management. This includes habitat restoration, land purchases, and conservation easements. Funds facilitate conservation easements along riparian corridors, help purchase critical pieces of property to complement existing high-quality habitat, and add contiguous pieces of land to existing wildlife areas. Funds are also used to produce educational products for students and wildlife enthusiasts, such as the ODNR Division of Wildlife's award-winning booklets and field guides, as well as additional materials for teachers. Purchasing the

stamp helps to ensure that wildlife areas continue to be properly managed for native species and that new lands can be purchased and protected from development. The new stamp went on sale March 1 at wildohio.gov and all hunting and fishing license vendors. Get yours today!

Ohio Environmental Education Fund

The Ohio Environmental Education Fund (OEEF) invites applications for mini grants (\$500 - \$5000) and general grants (\$5,000 - \$50,000) for environmental education projects targeting pre-school through university students and teachers, the general public and the regulated community. The Request for Proposals for the July 2018 grant cycle is now open and the application guidelines are posted at <http://www.epa.ohio.gov/oee>. Please review the application guidelines, and the OEEF Grant Preferred Characteristics for projects targeting the three different audiences before completing an application.

Prospective applicants can start the application process by opening an account in Ohio EPA's eBusiness Center at <https://ebiz.epa.ohio.gov/>. Electronic letters of intent to apply must be submitted in the OEEF online grant service no later than 5:00 p.m. on July 9, 2019. Completed proposals must be submitted in the OEEF online grant service no later than 5:00 p.m. on July 16, 2019.

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.



Letter of Intent Deadline is July 9, 2019 at 5:00 PM

Application Deadline is July 16, 2019 at 5:00 PM

Grant Writing Workshops

The Ohio EPA Office of Environmental Education 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.

Upcoming 101/102 Workshops

To Register: Registration is free and limited to 30 participants. To register, email your name and the contact information where you can best be reached to dennis.clement@epa.ohio.gov. Please specify which workshop you want to attend. Visit <https://www.epa.ohio.gov/calendar/oee> for additional workshops.

Tuesday, April 9, 10:00 a.m. - 4:00 p.m. at the Clermont County Engineer's Office, 2381 Clermont Center Drive, Batavia, OH 45103,

Free, lunch will be on your own.

Registration by email is required, contact dennis.clement@epa.ohio.gov or call 614-644-2048 for more info.

Sponsored by the Clermont Soil and Water Conservation District and Engineer's Office, EECO Region 5, and Ohio EPA Office of Environmental Education.

Thursday September 5 in Oak Harbor, at the Ottawa Soil and Water Conservation District

Times TBA, email Dennis.Clement@epa.ohio.gov to register.

Co-sponsored by EECO Region 2.

Thursday October 3 at Belmont College

Times TBA, email Dennis.Clement@epa.ohio.gov to register.

Co-sponsored by the Belmont Soil and Water Conservation District and EECO Region 3.

OEEF Spending Priorities

Ohio EPA invites comments on proposed funding priorities for the Ohio Environmental Education Fund, for the fiscal year beginning in July, 2019. OEEF provides grants that target pre-school through university students and teachers, Ohio adults, and the regulated community. This year's agenda proposes to continue a 24-year partnership with the Environmental Education Council of Ohio (EECO) encouraging K-12 students to explore careers in environmental science and engineering. Partnership funds support a statewide network of Environmental Career Ambassadors, professionals who make classroom presentations, host field trips, provide mentoring and shadowing opportunities, and participate in career exploration days. Last year the Ambassadors spoke with more than 39,600 middle, high school and college students and more than 6,700 teachers.

Other focus areas include education about the need to:

- Improve air quality by reducing emissions;
- Improve water quality by managing storm water and reducing nutrient loadings into streams and lakes that can result in Harmful Algal Blooms (HABs); and
- Encourage habitat restoration to increase biodiversity and improve air and water quality.

A fact sheet on the 2020 agenda is available at <https://epa.ohio.gov/Portals/42/documents/SFY2020Agenda.pdf>. Comments can be send to oeef@epa.ohio.gov, faxed to (614) 752-1727 or mailed to Carolyn Watkins, Ohio EPA-OEE, PO Box 1049, Columbus, OH 43216-1049.

Deadline: Comments received by 5:00 p.m. March 29 will be included in the official record.

OEEF Scholarship

Application deadline is April 15

Who is eligible? Up to \$2,500 is available for students entering their final year in four-year and five-year programs. Up to \$1,250 is available to second year students in two-year degree programs at public or private technical and community colleges in Ohio.

Majors we look for:

environmental science	biology	botany
chemistry	forestry	geology
laboratory sciences	natural resource conservation	wildlife management
zoology	chemical, civil and environmental engineering	
environmental health and safety	and related fields	

Scholarship goal: Merit-based, non-renewable scholarships are offered to encourage students to complete degrees and enter careers in environmental science and engineering fields.

Requirements: Applicants must have an overall GPA of at least 3.0 plus recommendation letters and evidence of career motivation.

Find out more and apply: www.ohiosci.org/oeef-scholarship and <https://epa.ohio.gov/oeef/>

National Environmental Education Week

April 22-26

The National Environmental Education Foundation encourages everyone to celebrate the ways EE improves our communities during National Environmental Education Week.

Their website includes resources and tips for your celebration.

www.neefusa.org/environmental-education-week

Nature in the City: A Guide to Leading Nature Activities with Young People

by Renee Boronka, The Cleveland Museum of Natural History

The Cleveland Museum of Natural History is pleased to present the second edition of *Nature in the City: A Guide to Leading Nature Activities with Young People*, in a beautiful, new print format. Originally produced in black and white with minimal illustrations, this colorful, perfect-bound edition will help open the eyes of a new generation of children to the natural diversity around them wherever they live – city or suburb.

Nature in the City provides 21 updated lessons (called “adventures”) for educators and their students to take together, covering topics including developing site mapping skills, improving nature observation skills, understanding the importance of resources that plants and animals need to survive, and ethics in studying and observing live specimens. Each adventure includes activity guides to promote student engagement in the environment around them, discussion prompts and opportunities for journaling observations.

The original book was created in 1973 by longtime Museum trustee and educator, Mary Lou Ferbert, and CMNH Curator of Botany and Director of Natural Areas, Jim Bissell. So much about the guidebook remains relevant. In particular, the need for more direct experiences with nature.

In the 1970s, they already realized that nature was being cut out of kids’ lives. These days, it’s even worse—kids are spending very little time outside, less than 30 minutes a day on average, when being out in nature has been shown to be so beneficial to mental health in general and kids with attention issues specifically.

The guide has been used for many excursions to sites in the city and suburbs. It is most successful, Ferbert says, when adults encourage learning through the act of describing -- shape, color, texture -- and journaling. “You don’t have to know the names or identity,” Ferbert says. “You want it to be fun.”

Adult leaders can turn students’ questions into learning opportunities. “If students ask the name of something, ask them, ‘Well, what name do you think it should have?’” Ferbert says.

Rose Marie D’Amico has followed that advice in leading elementary school kids through adventures. Her go-to adventure is “Lunch,” which teaches kids about the food chain. “Hands-on learning is so important,” says D’Amico, a retired teacher who still uses the book as a volunteer instructor at St. Mark Catholic School on

Cleveland’s west side.

When D’Amico first started teaching, in 1973 at Case Elementary, the guide book had just come out. It was produced against the backdrop of the space race between the U.S. and The Soviet Union and the birth of the modern environmental movement, two developments that led to more emphasis on science in the schools.

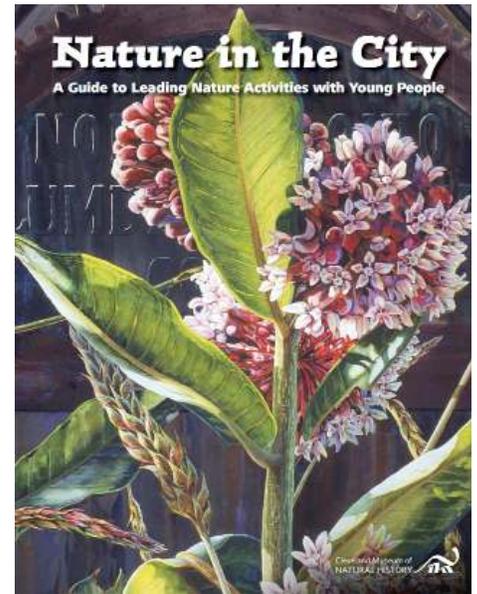
It meant more homeroom teachers were being promoted to teach science, including D’Amico, who recalls leading students on excursions to a vacant lot near the school. The students would bundle up to do “Signs of Seasons,” an adventure focusing on seasonal change. Trips to the same site are made each season where students are prompted to make their observations about the same living thing through the change of seasons. “You can show kids a picture of an amoeba,” she explains, “but, science stays with them when they use skills such as collecting data and reaching conclusions.”

In 1984, *Nature in the City* won the Award for Excellence in Science Education in a Non-School Setting for the State of Ohio from the National Science Teachers Association.

Updating the text and illustrations has enlivened *Nature in the City* for the next generation of educators, home-schooling parents, or play groups to use on their own adventures.

“You don’t have to go to a Metropark,” Ferbert concludes. “Nature is everywhere. The city we live in is a marvelous laboratory.”

You can purchase a book directly from the Museum, please send a check made out to “CMNH” for \$15 (\$9.99 + shipping) to: Natural Areas Program, Attn: Renee Boronka, 1 Wade Oval Drive, Cleveland, OH 44106. It is also available for purchase on Amazon.com.



Turtles and Telemetry

By Jon Souders, West Clermont High School

Ever wonder where Box Turtles go when they are not trying to cross the road? That is what the students



from Milford Jr. High, Clermont Northeastern High School, and Sycamore High School intend to find out. Their teachers have committed to helping them discover this

information for themselves. As recipients of three \$4,500.00 OEEF grants, teachers Rachelle Rapp, Jennifer Scheidler, Scott Wells, and their students will join the students from West Clermont High School (WCHS) to replicate an ongoing study of the Eastern Box Turtles (*Terrapene carolina carolina*).

Students will attach radio Transmitters to box turtles and then track them once a week from April till November. Students will record location, habitat



specifics, and health metrics for each turtle. This information will be combined with 15 years of data that has been collected by students from WCHS (formerly Glen Este and Amelia High Schools) at the Cincinnati Nature Center. The research project began in 2003 as part of a OEEF open-grant funded project. The project is designed by Kurt Whitford and Jon Souders with the goal of having students collect field data and then use the data in the classroom to allow them to create knowledge and understanding on a level never before possible in the middle and or high school classroom.

The students will use GIS mapping software to analyze the turtle data to determine what is included in and how turtles use their habitat. The inclusion of the three additional schools, each with their own unique study sites, will allow students to collaborate with students from other school to compare the behaviors and habitats of Eastern Box Turtles from different areas.

Student collaborators will work with Paul Schaeffer and Admin Parlin from Miami University, and conservation

specialists such as Matt Cross from the Toledo Zoo to learn how to ask scientifically sound questions that can be answered using the data that has been collected. Students will also have the opportunity to design additional studies that can be executed in the future.



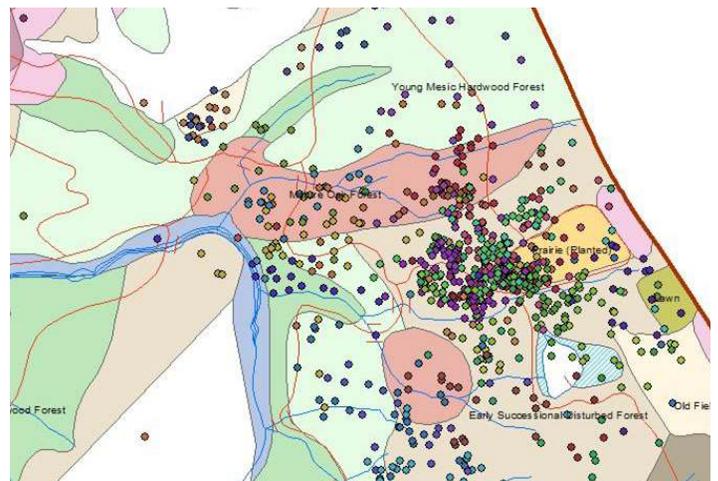
Students will work with GIS analyst Joey O'Brien and Kelly Perry from the Clermont County GIS Office to learn how they can use GIS software to analyze the data that has

been and will be collected. By learning to use the ArcGIS software (that is free to all school in the country) from ESRI, students will have a head start on their peers as the move into the postsecondary world. With a 43% share of the GIS marketplace, ArcGIS is likely to be part of any geographic analysis project that might be part of students' scientific, marketing, or business professional future. GIS analysis is a skill worth learning regardless of a student's future plans.

OEEF funds will be used to purchase the equipment needed for each school to participate in this exciting and innovative project.

Look for presentations of the findings from student research projects at future EECO Student Research Summits.

If you would like to become involved in the project contact Jon Souders via email tatdagwchs@gmail.com



Data with streams, trails, and vegetation types

Scat Cookie Recipe!

By Alli Shaw, Columbus and Franklin County Metro Parks

Raccoon Scat

Raccoons are omnivorous, which means they feed on a wide variety of plant and animal foods. What they eat depends on the time of year and what is available, so their scat, which is another word for poop, can vary quite a bit. Their diet can include acorns, corn, wheat and other grains, wild grapes, black cherry, pawpaw, giant ragweed, blackberry, pokeweed, apples, crickets, grasshoppers, earthworms, crayfish, carrion, young turtles, frogs, turtle and bird eggs and, of course, garbage.

Ingredients

- 1/2 cup margarine
- 2 cups sugar
- 1/2 cup milk
- 3/4 cups peanut butter
- 6 tablespoons cocoa
- 1 teaspoon vanilla
- up to 3 cups quick oats (cut oatmeal in half so scat doesn't look like oatmeal cookies).
- Optional: Add sesame seeds, almond slivers or others for interesting texture if desired!

Directions

1. Combine these margarine, sugar, and milk in a saucepan:
2. Boil for 1 minute
3. Remove from heat
4. Add peanut butter, cocoa, and vanilla
5. Stir
6. Slowly add in and stir up to 3 cups quick oats.
7. Spoon bits of the excremental mess onto wax paper.
8. Form the "cookies" into the exact size and shape you want and let goo set up.
9. Carefully remove them from wax paper and keep them in a cool place.

Dairy-free and peanut butter-free recipes for no-bake cookies should work about the same!

From Rancho Alegre

Coyote Scat

Coyotes are usually thought of as carnivores, but they also eat vegetative matter when available. Their diet can include mice, rabbits, ground squirrels, snakes, birds, insects, fruits, berries and carrion.

Ingredients

- 3 tablespoons margarine
- 1 12 oz. bag of marshmallows
- 1 12 oz. pkg. of chocolate morsels
- Approx. 20 wintergreen Lifesavers (represents bones) (or 1 pkg. of white chocolate, or white chocolate covered pretzels)
- 5 large biscuits of Nabisco shredded wheat (represents fur)
- Optional: a few raisins, jelly beans & Rice Krispies (represents berries & insects)

Directions

1. Use a hammer and thick plastic bag to crush Lifesavers or white chocolate into fragments.
2. Crumble up the shredded wheat and mix with crushed Lifesavers. If using white chocolate, put in freezer and wait until later to add to mixture.
3. Melt margarine over low heat in a large saucepan. Add marshmallows and allow to melt, stirring often.
4. Once marshmallows are mostly melted add chocolate morsels and stir until everything is melted.
5. Add the shredded wheat and crushed Lifesavers and mix together. If using white chocolate, you must wait until the mixture is almost completely cool, or the chocolate starts melting.
6. Place your hand inside a plastic bag, pick up a handful of the mixture, and roll it into a scat shape.
7. Place on a cookie sheet or waxed paper

Note: The white chocolate /pretzels work best to roll out on a cookie sheet first and then poke some pieces of chocolate into it.



Short eared owl pellet (above)

raccoon scat (left)



coyote scat (right)

Ohio Student Wildlife Research Symposium

Thursday April 4, 2019

Mohican State Park Lodge in Perrysburg, Ohio



The 3rd Annual Student Wildlife Research Symposium kicks off the annual EECO Conference and highlights wildlife-related research taking place at high schools around Ohio throughout the past year. 2019 presentations and posters include impacts of microplastics on freshwater ecosystems, mammal and bird species diversity in reclaimed mining areas, surveying wildlife with digital cameras, water quality studies, and more. This year's keynote is Jim Reding, Granville High School science teacher, who will talk about the impacts of high school student research on future conservation efforts.

Registration is \$35 for adults, \$25 for students at <https://eco.wildapricot.org/event-3208444>. Registration deadline is March 29th.

For more information: Contact the Division of Wildlife's Education Coordinator at 1-800-WILDLIFE or outdoor.education@dnr.state.oh.us.

Co-sponsored by the ODNR-Division of Wildlife and EECO-the Environmental Education Council of Ohio.

Meet EECO Board Member Spotlight Josh Dyer

Born and raised in rural Crawford County, Ohio, I love to spend any time I can outdoors: hunting, trapping, fishing, gardening, camping, botanizing, birding, looking for reptiles and amphibians, and much more. My 7 and 3 year-old daughters, Chrisha and McKinley, love to tag along outside with their Dad.

While growing up, I was encouraged to go outside (or else I would have to help Mom with inside chores) and this is where my love for the outdoors began. After pulling weeds in the garden during the summer months, my brother and I would venture across the road and romp around in a creek and woods – other times I would venture alone. I also discovered a few natural history wonders. One of my favorites included my siblings, cousins, and I. We found out that groundhogs can climb trees – and then jump out of them! (It gave us a good scare landing amidst a litter of screaming human children.) Another not-so-fond learning experience involved pollution. While playing ice hockey with a smashed can and sticks we found, I got thirsty and found some open water. Yeah, that didn't end well for me!

As I grew into adolescence, I joined the Boy Scouts of America and started down my trail of hunting and trapping, all facilitated through the encouragement and participation of my Dad. Through scouting, I found enjoyment of showing younger scouts the necessary skills for advancement, and completed the coveted rank of Eagle

Scout. My adolescent years were formidable ones in developing the passion and drive to learn more about and have a career in natural resources; my



years in Scouting, however, gave me a focus – education.

Upon graduation, I attended Hocking College as it was the only school I could find that was geared toward me becoming a naturalist. These were great years spent meeting excellent people and honing my nature-teacher skills. As a naturalist, and now Director, of the Crawford Park District, I work with children of all ages, engaging them in nature investigation and exploration. I look forward to many more years of engaging the public, especially children, through nature-related programming.

As the incoming President for EECO, I am honored to be the leader of such an exciting and promising organization. The many conferences and meetings that offer many ideas and networking opportunities to educators is an exemplary characteristic that makes EECO a state-wide leader in those areas. As President, I want to assist in enlarging the membership, particularly with organizations that focus on EE. I look forward to meeting many of you in the next two years as together we move this organization forward.

Ohio's Updated Hunter Education Course

Online Course is available for future hunters ages 12 and older

The next generation of outdoorsmen and women are the first to benefit from Ohio's revamped hunter education course. A new course book and enhanced online learning options provide a more current and comprehensive learning experience for potential hunters. A fully-illustrated booklet includes 11 chapters covering firearms safety, preparation, equipment, conservation, and more.

New to the program, anyone who is 12 years or older can complete the course online in the comfort of their own home. The cost is \$15 per person to complete the course online. Hunter education remains free for those who complete the instructor-led course. Go to wildohio.gov to find an instructor-led course near you. Here's a look at Ohio's hunter education course options.

Online hunter education

This is for any Ohio resident 12 years of age or older. The online course takes approximately four hours to complete, but you may stop and pick up where you left off as you please. It can be completed in one sitting, or spread out over several days. The course is compatible with your smartphone, tablet, and personal computer. A \$15 fee is paid to the course vendor once you complete the course and pass the final exam. Sign up at hunter-ed.com/ohio.

Instructor-led course

An instructor-led course lasts eight to 12 hours in a classroom environment. Though it varies by instructor and location, most classes take place over two days. Certified volunteers and ODNR Division of Wildlife staff teach the course. These hunting and firearm safety experts have spent years introducing people to the outdoors. Study materials are provided in the class. Your instructor will cover a range of topics, including conservation, safety, and ethics, as well as the proper handling of shotguns, handguns, bowhunting gear, and more. Do not bring firearms or archery equipment to class, as all necessary equipment will be provided. Once you've completed the coursework, passing a 100-question written test is necessary to satisfy the education requirement.

Home-study course

The home-study course is for Ohio residents. This online course covers important topics for aspiring hunters, such as firearms safety, preparation, equipment, conservation, and more. Once you complete all units of the home-study course, you will need to pass an exam to receive a voucher to attend the final, in-person classroom portion. The cost of this option is \$15 payable once you pass the exam. This fee is collected by the course vendor. The classroom session usually lasts about four hours, and is led by a certified volunteer or ODNR Division of Wildlife employee.

Apprentice license

Don't forget that an Ohio apprentice hunting license is available to those who want to try hunting before first completing a course. Anyone who hunts with an apprentice license must be accompanied by a licensed hunter who is at least 21 years old. Having previously held an apprentice license does not qualify you to purchase a regular hunting license.

The 10 commandments of firearm safety

- Watch that muzzle. Keep it pointed in a safe direction at all times.
- Treat every firearm as if it is loaded. It might be, even if you think it isn't. Open the chamber before handling a firearm.
- Be sure of the target, what is in front of it, and beyond it. Know the identifying features of the game you hunt. Make sure you have an adequate backstop. Do not shoot at a flat, hard surface, or water.
- Keep your finger outside the trigger guard until you are ready to shoot.
- Check your barrel and ammunition. Make sure the barrel and action are clear of obstructions, and carry only the proper ammunition for your firearm.
- Unload a firearm when not in use. Leave the action open, and carry a firearm in a case and unloaded to and from the shooting area.
- Point a firearm only at something you intend to shoot. Avoid all horseplay with a gun.
- Don't run, jump, or climb with a loaded firearm. Unload a firearm before you climb a fence or tree, or jump a ditch. Pull a firearm toward you by the butt, never the muzzle.
- Store firearms and ammunition separately and safely. Store each in secured locations beyond the reach of children and careless adults.
- Avoid alcoholic beverages before and during shooting. Also avoid behavior-altering drugs.

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.

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