



Environmental Education Council of Ohio



Spring 2022

Theme: Plastic Pollution

Plastic Pollution: A Big Problem with a Simple Solution

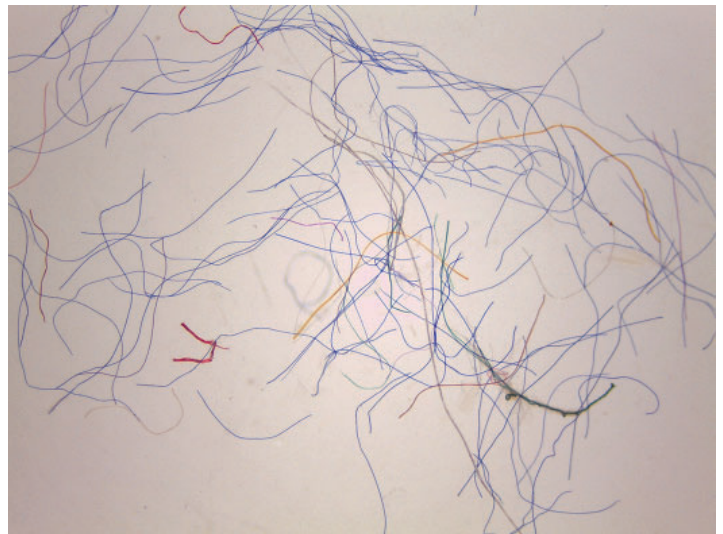
By Jill Bartolotta, Extension Educator, Ohio Sea Grant and Stone Laboratory

The Problem with Plastic Pollution

Plastic...a magical material that will last forever. From a production and materials standpoint, it is perfect. From an environmental standpoint, it is deadly and wreaking havoc at an alarming rate. The characteristics making plastic this magical material...malleable, durable, low production costs, lightweight...have allowed it to become the most commonly used material on this planet with 350 million metric tons produced each year (Geyer et al., 2017) and subsequently the most common material found during litter cleanup events. Plastic accounts for 90% percent of the litter profile on beaches (Alliance for the Great Lakes, 2019) with 22 million pounds of plastic entering the Great Lakes each year, with half entering Lake Erie alone (Hoffman and Hittinger, 2017).

Plastic is everywhere — from the deepest depths of the ocean to the tallest mountains, in the air we breathe and the water we drink. Scientists have found plastic in every living organism they have studied from our largest creatures — whales — to the smallest — zooplankton. Large pieces of plastic frequently entangle animals like snakes, birds, and marine and land mammals. In Ohio, the most common items entangling our wildlife are monofilament fishing line,

Continues on page 3



Plastic microfibers from synthetic fabrics like polypropylene. Fibers are the number one plastic item found in living organisms. Photo Credit: Dr. Sam Mason, Director of Sustainability, Penn State Erie, The Behrend College.

Save the Date

Annual Student Wildlife Research Symposium

March 31, Hueston Woods State Park

<https://eeco.wildapricot.org/event-4721965>

EECO Annual Conference

March 31 - April 3, Hueston Woods State Park

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

Vernal Poolooza: Wetland Science Conference

March 24-26, Salt Fork State Park

<https://www.ohiovernalpoolnetwork.org/>

OEEF Letter of Intent Deadline

July 8

www.epa.ohio.gov/oee

OEEF Grant Submission Deadline

July 15

www.epa.ohio.gov/oee

Nature-Based Early Learning Virtual Conference

July 27-30, Cincinnati

<https://conference.naturalstart.org/>



The 55th Anniversary of the
EECO Annual Conference

March 31-April 3, 2022
at Hueston Woods State
Park Lodge

Register online by March 30th. Early
bird registration ends March 11th

*Please join us for a fun, hands-on, and outstanding
professional development opportunity!*

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

Graduate credit is available

Thursday Student Wildlife Research Symposium

Join high school students and teachers from around Ohio as they present their wildlife and habitat research projects in this fourth annual research symposium. There are half and full day registration options.

Friday Educational Workshops on CLIMATE with Project WET, WILD, and Learning Tree; and My Backyard Stream (field trip and workshop)

Friday Field Trips: Miami Museums and Ecological Center; Spring Flowers; and Fossil Field Trip exploring the rocks of Hueston Woods.

Friday evening Open Space: Have you ever had a topic that you would like to discuss at an EECO Conference? Great! Bring your topic ideas and your expertise to the EECO Open Space! A great place for people to share issues and solutions around Environmental Education, Outdoor Education, and Nonprofit/small organizations.

Friday evening Earthrise to Racing Extinction: Nature Photography & the Environmental Movement

Saturday Sessions: Natural History; STEM; Population; Climate and Outdoor Education; and Inclusive World of EE.

Saturday Keynote: Shawn Connor, Into the Big Woods. Join Shawn Connor to learn about the history and importance of "The Big Woods". This 200-acre remnant beech-maple forest towering over a carpet of ferns and wildflowers has been recognized as a national natural landmark.

Saturday EECO Kids Conference: On Saturday, while you are attending EECO conference sessions, your child/children can, too! 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!

Sunday EECO Tour- Preble County Historical Society & Nature Preserve - Visit the prairie and wetlands, view the restoration projects, and tour the historic farmstead.

Many thanks to our Conference Sponsors,
which include:



**Northeast Ohio
Regional Sewer District**

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Plastic Pollution continued....

nets, and landscape mesh. The smaller pieces of plastic known as microplastics — a plastic piece that is 5mm (size of a pencil eraser) or smaller- are being found in the gut contents of birds, fish, and mammals. The most commonly found microplastics in organisms are plastic fibers from our synthetic clothing such as fleece jackets or other polypropylene materials —think workout and wicking fabric type clothing.

We have also found plastics in humans — in our blood, our gut, and our poop. We are breathing, drinking, and eating plastic fibers every day. Preliminary research from the medical community potentially attributes the increase in gut disorders such as IBS and Crohn's disease to our intestine's exposure to plastics and plastic chemicals (Lu et al., 2019). Disruptions to our endocrine systems, which controls our hormones that regulate every process in an organism, are also a result of our increased exposure to plastic chemicals and other chemicals such as pesticides, leading to a reproduction and fertility crisis (Swan and Colino, 2021). Overexposure to plastics and plastic chemicals is not good news. However, you can significantly reduce your exposure through a reduced use of plastic items.

The Solution is Simple

A plastic littered planet does not need to be the norm. Plastic is everywhere because we buy it. If we use less plastic, demand pro-environmental policies, and an economy (i.e. circular economy) that places value on reusable items instead of disposable items, plastics, and more importantly, single-use plastics, will be replaced by more sustainable alternatives. We are the solution to plastic pollution. It is time we work together to move away from single-use plastics and a throwaway society and move towards sustainable living and improved waste management practices. The health of all living organisms and the planet depends on our swift action to clean up our mess. Below are some tips and resources to start your sustainability journey.

5 Free Things You Can Do to Prevent Plastic Pollution

1. Make sure the lid on your garbage can is on tight and your trash is placed inside a plastic bag and not loosely placed in the bin. Loose trash and tipped over trash bins are a common cause of accidental littering.
2. Bring your own containers with you when you go out to eat to store your leftovers. This simple trick prevents you from needing to take home those pesky Styrofoam or non-recyclable containers.
3. Switch from body wash in a plastic bottle to a bar of soap...soap bars last just as long and they are usually cheaper than body wash! A win for you and your wallet.
4. Give experiences instead of things as gifts. If you still want to give a gift, wrap your gift in newspaper, cloth, or reuse a gift bag. Another win for you and your wallet.
5. Phase out single-use plastics you use often:
 - Bring a reusable bag when you shop or hand carry items if you are only buying a few things.
 - Refuse a straw when out to eat. If you need or want to use a straw, no worries, remember to bring your own.
 - Get a lot of takeout? Skip the plastic bag, utensils, and condiment packets. We typically end up using the utensils and condiments we already have at home.



Balloons in the water at Mentor Marsh State Nature Preserve.

Balloons are another item commonly found to entangle Ohio's wildlife. Thank you to Connie Murzyn for rescuing these balloons.

Photo credit: Connie Murzyn, Ohio Sea Grant volunteer.



90% of what is found on cleanups is plastic, mostly single-use plastics like bottles and bottle caps, food wrappers, cigarette butts, and straws. Beach cleanups are a great tool to remove plastic pollution, but we must stop at the source and reduce our use of plastics. Photo Credit: Jill Bartolotta, Ohio Sea Grant and Stone Laboratory, Extension Educator.

See next page for some great resources

Plastic Pollution: A Big Problem with a Simple Solution Resources

Tip sheets and videos Interested in living a more sustainable life? Created by The Ohio State University Extension Sustainability Team: <https://fcs.osu.edu/programs/resources/sustainability>

Working with 4-H youth? Here is the newest Idea Starter educating youth about sustainable living: <https://ohio4h.org/selfdetermined> (scroll down to the bottom and choose “Going Green: Learning to Lead a Sustainable Life”).

Interested in doing a beach cleanup? Check out the Alliance for the Great Lakes Adopt-a-Beach™ Program: <https://greatlakes.org/get-involved/adopt-a-beach/>

Webinar: Interested in learning more about impacts to Great Lakes and fish, check out this webinar with Ohio Sea Grant and University of Toronto:

<https://ohioseagrant.osu.edu/news/calendar/2021/04/09/5ptr5/plastic-pollution-webinar>

Contacts and information about plastics in the Great Lakes developed by Ohio Sea Grant (click the Permalink button to download a PDF):

<https://ohioseagrant.osu.edu/products/l4gr6/resources-for-marine-debris-amp-plastic-pollution-in-the-gl>

NOAA Marine Debris Program to learn more about this issue: <https://marinedebris.noaa.gov/>

US EPA's Trash Free Waters Program to learn more: www.epa.gov/trash-free-waters

Article References

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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 <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](https://www.goodshop.com/), purchases will benefit EECO.

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



Ohio Environmental Education Fund

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

Grant Applications

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

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

Electronic Letter of Intent Deadline is due 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. If interested in finding out more, please contact Dennis Clement at 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.

Upcoming Grant Writing Workshops

Registration is required for these FREE workshops at dennis.clement@epa.ohio.gov or call 614-644-2048 for additional information. **Registration is by e-mail only.** When registering, please include your name and contact information (e.g., phone number) where you can best be reached.

The deadline to register will be the Friday before each workshop or until the workshop is full at 30 participants.

Lunch will not be provided.

Wednesday, March 16, 2022 from 10a - 4p

At the Butler Soil & Water Conservation District
1802 Princeton Road, Suite 300, Hamilton, Ohio 45011 (sponsor and local host only), EECO Region 5, and Ohio EPA, Office of Environmental Education.
Registration deadline is March 11, 2022.

Thursday, June 16, 2022 from 10a - 4p

At the Locke Branch Library
703 Miami Street, Toledo, Ohio 43605 (local host only), EECO Region 2, and Ohio EPA, Office of Environmental Education. Our local sponsor will be the Lucas Soil & Water Conservation District.
Registration Deadline is June 10, 2022.

Tuesday, August 16, 2022 from 10a - 4p

At the OSU Extension, Mahoning County
490 S. Broad Street, Canfield, Ohio 44406 (local host only), EECO Region 3, and Ohio EPA, Office of Environmental Education. Our local sponsor will be Shelia Cubick, EECO Region 3 Regional Director.
Registration deadline is August 12, 2022.

Thursday, October 6, 2022 from 10a - 4p

At the Rolling Plains UMC
3350 Moxahala Park Rd., Zanesville, Ohio 43701 (local host only), EECO Region 6, and Ohio EPA, Office of Environmental Education. Our local sponsor will be the Muskingum Soil and Water Conservation District.
Registration deadline is September 30, 2022.

When Foxes Become Neighbors

By Sheila Cubick, Region 3 Director

Walking along my driveway on the way to get the mail a couple of years ago, I sensed I was being stalked. I could feel the intent eyes of a predator on me. Stopping, turning, slowly looking into the trees and underbrush, I spotted them! Four young red foxes practicing their hunting skills on the neighboring human walking past their den.

My house is in the woods with open fields and farmland nearby creating great habitat for foxes which feed mainly on mice, rats, rabbits, groundhogs, and fruit. Transitional habitats like mine fulfill their needs for food and shelter and groundhog holes provide dens for the kits.

Foxes are relatives of dogs and coyotes (family Canidae). Both Red Fox (*Vulpes vulpes*) and Gray Fox (*Urocyon cinereoargenteus*) live in Ohio, which supports substantial populations of both species. Foxes are small dog-like canines that grow to about 14 – 16 inches long, have narrow faces, and long fluffy tails. They leap and pounce on their prey holding it down with their paws.

While I enjoyed watching the kits grow, I was aware that they also were decreasing our resident wildlife. The groundhog, rabbit, and chipmunk populations were severely depleted around my house thus fulfilling their ecosystem role of reducing rodent and rabbit populations. My neighbor began to miss some chickens and one turned up dead in my driveway!

My fox family entertained my human and feline family for about a month before mom ushered everyone across the creek over the fallen tree we now call the “fox bridge” and didn’t return to the den. While I missed their antics and their barking voices, I did not miss their large appetites or their skunk-like smell!

Recently, I began noticing the smell again, but assumed it was the skunk I would see patrolling under my feeders at night. Then I noticed some new excavations in an abandoned groundhog burrow on the hill behind the house. Mounds of fresh soil built up around the hole. Once it snowed, I began to see tracks that looked like fox, but they were not distinct enough to make a positive ID. So, I set up my trail camera to see who was using the burrow. Over the course of a week, I found a bunny, opossum, house cat, and a fox! Luckily for them, these mammals arrived when the fox was gone from the den during the night.

Rural people aren’t the only ones with fox problems, however. In some parts of the state, foxes are found in more populated areas as they feel territorial pressure from both human and coyote population expansion. Foxes have been seen in neighborhoods and have raised families under sheds as they find territories which suit their needs for food and shelter.

According to, Joseph Farrera, ODNR Division of Wildlife Officer, “Overall, foxes shouldn’t be feared.” They may attack livestock like chickens or small pets like cats and can be protective of kits, so stay away from dens during this time. Quite often, foxes will move their families to a new den site after several weeks due to food shortages or too much human activity.

If you don’t like having foxes living so close to your home and don’t feel you can wait for them to move, you can try to discourage them from your yard by harassing them with loud noises such as clapping and shouting when



Red Fox (*Vulpes vulpes*)



Gray Fox (*Urocyon cinereoargenteus*)

you encounter them in your yard. Also, eliminate attractants such as areas where they may hide, like piles of brush, and bird feeders, which attract their prey. And as with any wild animal, DO NOT feed the foxes! "If the person does not want to attempt this [removal] themselves, they can call and hire a Commercial Nuisance Wild Animal Control Operator (CNWACO) who will come trap and euthanize the animals as by law foxes cannot be relocated," says Farrera. Eliminating den sites and food sources from your yard before they move in is the best method of controlling them.

So, check your yard, school, or neighborhood for signs of fox. Act early to scare them away if you don't want them living close. Otherwise, enjoy the sights, sounds, and smells of your new neighbor, but from a distance!

(updated from The Youngstown Vindicator, Valley Grows page, March 2, 2017)

Foxy Resources

Red Fox

- <https://ohiodnr.gov/discover-and-learn/animals/mammals/red-fox>
- http://animaldiversity.org/accounts/Vulpes_vulpes/

Gray Fox

- <https://ohiodnr.gov/discover-and-learn/animals/mammals/gray-fox>
- http://animaldiversity.org/accounts/Urocyon_cinereoargenteus/

Red Fox Cam

- <https://explore.org/livecams/zen-den/squam-lakes-fox-den>

Skull Loaner Kit

ODNR Division of Wildlife has loaner kits filled with materials to enhance classroom exploration of Ohio's wildlife and wildlife habitats. These kits may contain hides, skulls, a supplemental guide, and more that are designed to help students actively learn more about Ohio's wildlife. The skulls kit contains various skulls that your students can compare, many include a fox skull. Contact your district office for topics and availability of kits. <https://ohiodnr.gov/discover-and-learn/safety-conservation/about-odnr/wildlife/wildlife-contacts/district-offices-wildlife>

ODNR Conservation Teen Advisory Council

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 ODNR's youth outreach and program efforts.

What we do:

- Develop innovative and practical ideas that empower youth to be wise stewards of Ohio's natural resources
- Provide feedback on youth-focused strategies, resources, campaigns and programs, and make recommendations to enhance outdoor outreach
- Enact conservation-focused initiatives in our communities
- Explore careers in the natural resources sector
- Develop valuable networking and leadership skills
- Make a difference!

Find Out More: <https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/education-training/contac> or contact Alyssa Yaple Alyssa.Yaple@dnr.ohio.gov

Plastics: Impacts and Actions Online Course

March 14 - April 10

This course, from Cornell University, explores our social and environmental relationships with plastics and uses plastics to help understand the complex dynamic systems shaping our planet and our lives. During the course we will use critical and systems thinking while learning about everything from the plastic lifecycle, to plastic's social and environmental impacts, to NGO and government plastics policies.

Workload: 4 weeks (4-5 hours of work per week). The course is largely asynchronous--meaning you can access the short lectures, readings, and other materials when it's convenient for you. Weekly assignments include watching lectures, completing readings, and responding to discussion questions. Participants are required to participate in a minimum of one course webinar. The required course project is a 1-2 page report on a plastic pollution intervention you designed and, if possible within the course time frame, implemented in your community.

Find out more and register: <https://www.civicecology.org/plastics1>



The Climates of Wine

April 21, 8 pm

Virtual event with real wine!

Did you know that there are three major types of climates for wine growing around the world? And are you able to tell which climate a wine came from by tasting it? You'll learn all this and more in our A Taste of Nature virtual wine-tasting fundraiser event.

You will receive three different wines (one from each of the three major wine-growing climates in the world), all wrapped to keep the labels hidden. Then, we'll gather on Zoom with a professional sommelier to learn how to taste wine and try to discern which wine comes from which climate. We'll also discover a bit about the geography and weather in each of our three different climates.

Registration: For \$150, here is what all you will receive:

- **Wine:** We will ship you three full-size 750ml bottles of wine (one from each of the three major wine-growing climates), wrapped to keep their labels hidden. Enough for up to 6 people to enjoy the event. So, make it a fun evening with friends!
- **Information:** A guide to blind tasting of wines, a guide to wine varieties, and a brief guide to wine climates.
- **Pairing Recommendations** – We won't be sending you food, but if you want to have some fun bites to go with your wine for this event, we'll include some recommended nibbles to have along with your tasting.
- **The Virtual Gathering** – We'll all gather on Zoom on April 21st at 8pm until about 9:30pm to taste the wines together and learn more about the climates that wines come from.

The Experts: We are thrilled that Kendeigh Worden, sommelier and owner of thegrapegrind.com will be guiding us through the evening. And the wines will be curated by Kendeigh and Lifetime Vintage to be shipped right to your doorstep!

Deadline April 2: The event is on April 21st at 8pm, but we need time to package and ship the wines to all attendees, so registration will close on April 2nd. Sign up now with the following registration link:

<https://eeco.wildapricot.org/event-4682117>

Project Wild Climate and Wildlife Workshop

May 7, 9:00 am – 3:00 pm
Cortland, Ohio 44410

Cost: FREE; Seating is limited

Register: Contact Amy Reeher, Trumbull SWCD
amy@trumbullohswcd.org or (330- 637-2056, ex. 3)

The Climate and Wildlife module helps students examine ecological phenomena relating to a warming planet, explore social and political aspects of climate adaption strategies, and engage in actions to help sustain natural resources.

Water Quality Monitoring Level 1

May 18, 8:00 am – 4:30 pm
Hamilton, Ohio 45011

Cost: FREE; Seating is limited

Register: Contact Dennis Clement, Ohio EPA Office of EE
dennis.clement@epa.ohio.gov or 614-644-2048.

This training will be hands-on with all participants getting in the water to learn techniques for biological, physical, and chemical water quality monitoring. Level 1 was designed with educators in mind. Healthy Water, Healthy People Curriculum will be used in this training.



NOAA Resources

Preventing Plastic in the Great Lakes | OR&R's Marine Debris Program (noaa.gov) (2021) <https://blog.marinedebris.noaa.gov/index.php/preventing-plastic-great-lakes>

Ocean pollution and marine debris | National Oceanic and Atmospheric Administration (noaa.gov) <https://www.noaa.gov/education/resource-collections/ocean-coasts/ocean-pollution>

Great Lakes Circular Economy Partnership and Plastics Cleanup | OR&R's Marine Debris Program (noaa.gov) <https://marinedebris.noaa.gov/prevention/great-lakes-circular-economy-partnership-and-plastics-cleanup>

Great Resources

Debris Tracker App

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

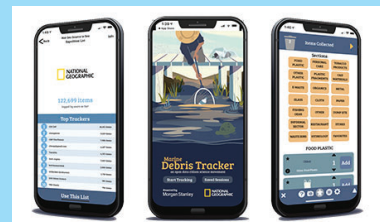
Help create a bigger picture of the plastic pollution crisis, by reporting litter wherever you find it, from our oceans to your backyard. Debris Tracker is designed to help citizen scientists, like you and your students, make a difference by contributing data on plastic pollution in your community.

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/>



Plastics are the most common form of marine debris. They can come from a variety of land- and ocean-based **SOURCES**, **ENTER THE WATER** in many ways, and **IMPACT** the ocean and Great Lakes. Once in the water, plastic debris never fully biodegrades.

COMMONLY FOUND PLASTICS

- Cigarettes Butts
- Food Wrappers
- Beverage Bottles
- Straws
- Cups & Plates
- Bottle Caps
- Single Use Bags

HOW TO HELP?

- Reduce
- Reuse
- Recycle
- DISPOSE OF WASTE PROPERLY no matter where you are.
- GET INVOLVED and participate in local cleanups in your area.
- REMEMBER that our land and sea are connected.

Teaching With i-Tree's Many Benefits!

By Sue Wintering & Stephanie Foster Miller, ODNR Division of Forestry

Project Learning Tree's Teaching with i-Tree unit, designed for middle and high school students, includes three practical, fun, hands-on activity lessons. The goal is to engage youth and adults to discover and analyze the many ecosystem services trees provide. The free, online i-Tree Design software was developed by the U.S. Forest Service and its partners. It allows a user to apply STEM skills and calculate dollar values of benefits provided by a tree or groups of trees around their home, school grounds, or community.

The i-Tree activities are Tree Benefits and Identification, Tree Value, and Land Manager Role Play. Whether in a formal classroom setting or with informal groups like scouts, after-school or alternative programs, and nature center/park visitors, i-Tree can be used just about anywhere with any audience.

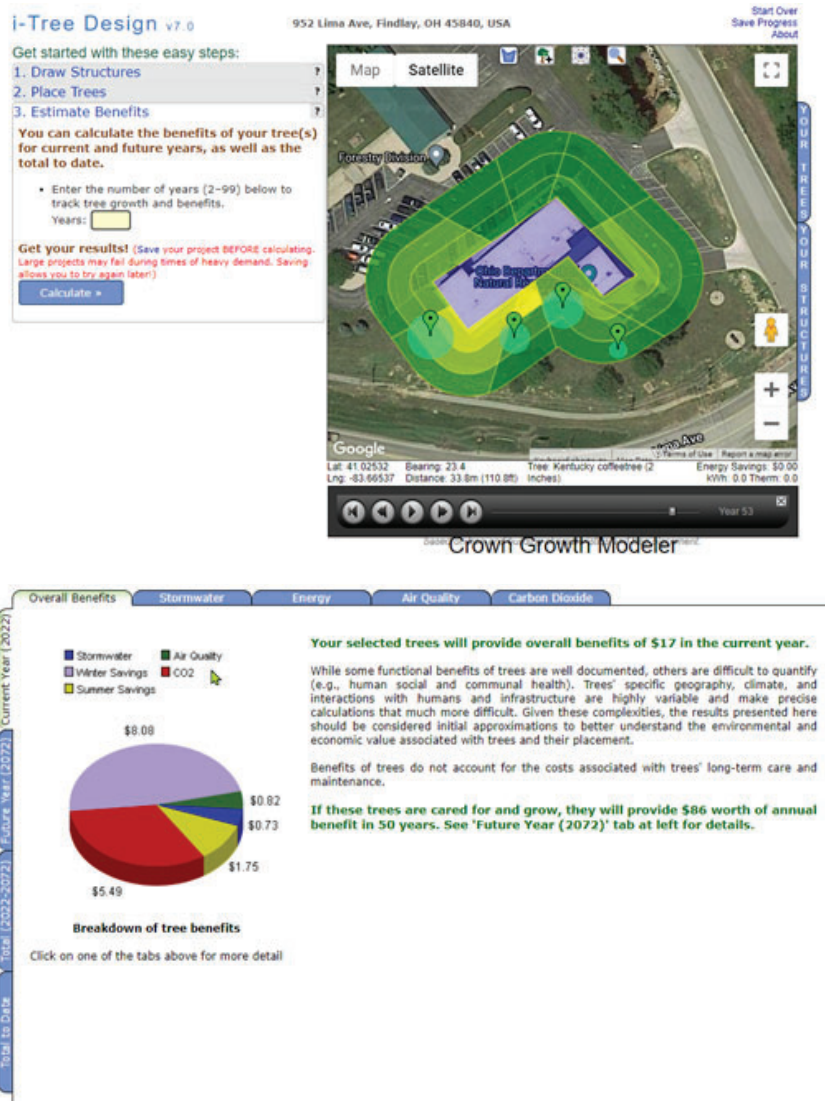
i-Tree activities offer practical experience for future foresters, natural resource managers, and homeowners, too. Users learn to measure trees, begin developing tree identification skills, and evaluate tree conditions – is it in good shape or does it have problems?

Two specific applications are available for these lessons. i-Tree Design utilizes a tree benefits calculator coupled with Google Earth to identify existing structures and strategically place trees to measure their impact on heating and cooling bills. The result is a satellite photo with projected tree crown growth over time and a summary of the benefits each tree provides, including stormwater mitigation, air quality, and carbon sequestration.

The data students collect and analyze can even be used for service-learning projects. The Land Management Plan Worksheet guides young people through a goal-oriented process, which can be used to make recommendations to their school, residents, or community about where strategically placed tree plantings can increase ecosystem services and decrease energy use. It's very impressive and simple to use.

i-Tree Species guides students to the best tree species to meet the land management goals. Students rank what's important and the program develops a report listing the top tree species that best meet their goals. Of course, it's still important to match the correct species to the soil type and other growing conditions, but it can be a powerful tool for young people, classes, and groups to narrow down planting lists to implement their management recommendations.

Teaching with i-Tree is a wonderful tool to illustrate the importance of trees and planning in our everyday lives. There's so much more to consider than just placing trees in the ground. What a great way to cultivate an interest and appreciation for conservation and natural resource careers in young people!



Teaching with iTree

<https://www.plt.org/curriculum/teaching-with-itree/>

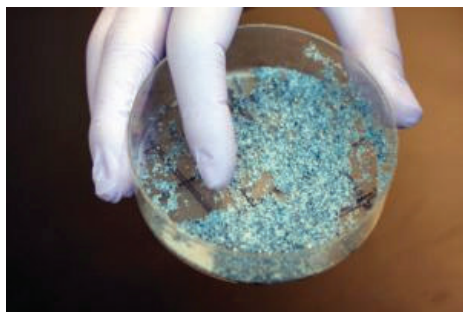
iTree Tool

<https://www.itreetools.org/>

Pollution Prevention Explorer

from Sea Grant: Illinois-Indiana

Explore a sortable list of external resources on the topics of water pollution and pollution prevention. Pollution prevention is broadly defined as any action that reduces, eliminates or prevents pollution at its source, and Illinois-Indiana Sea Grant focuses its pollution prevention outreach efforts to protect our shared water resources.



Microbeads filtered from facewash, in the lab. These small plastic particles are a type of microplastic pollution impacting the Great Lakes.

To easily find what you need, the following filters have been provided:

Age Group
Location
Topic
Learning Mode
Time Required to Complete

Many of these resources require an internet connection. However, portions of some activities may be completed offline, as indicated in the description of the resource. Several activities and many standardized

lessons may require additional supplies to fully complete. All resources categorized as standardized lessons are either already aligned or can be adapted to K-12 science standards.

<https://iiseagrant.org/education/pollution-prevention-explorer/>

Groundwater Emerging Issues

Resources from the Groundwater Foundation

Microplastics are small plastic particles in the environment. They are of particular concern in marine environments, where they have the potential to impact aquatic life through ingestion and the plastic's ability to attract and absorb certain pollutants. Sources of microplastics include "microbeads" in various cosmetics and soaps and the breakdown of larger plastic materials.

- New York Times: Scientists Turn Their Gaze Toward Tiny Threats to Great Lakes
- University of Washington Research: Sources and Distribution of Marine Microplastics
- Plastics News: Momentum Building for Plastic Microbead Bans
- NPR: Why Those Tiny Microbeads in Soap May Pose Problem
- The Atlantic: How Face Wash Pollutes Water
- Water Online: Disturbingly Little Known about Microbeads and Plastics in the Great Lakes

www.groundwater.org/get-informed/groundwater/emerging.html

Resources for Educators

www.groundwater.org/kids/resources-for-educators.html

Contact your county Soil and Water Conservation District to find out if they can bring a groundwater model into your classroom. <https://agri.ohio.gov/divisions/soil-and-water-conservation/find-a-local-swcd>

LitteratiED

<https://edu.litterati.org/>

Free STEM based lesson plans to bring engaging, practical, and eco-friendly content to your curriculum.

These active, tech enabled lessons help students learn more about their local environment & possibly even make a lasting impact from the results of their work

Browse LitteratiED Content:

One Day Lesson Plans
One Week Lesson Plans
Full Unit or Year Lesson Plans
TED-Ed Educational Content
LitteratiED FAQs

Litterati App

Photograph a piece of litter
Discard properly the tag the photo
Invite or challenge others
View LitterData



Our Beautiful Planet, from the National Science Teaching Association, is a series of compelling 5-7 minute science films highlighting the cutting-edge research that climate scientists are doing to solve some of the world's most pressing issues.

NSTA, The Climate Initiative, and Kikim Media have partnered to launch these films and this collection of classroom-ready lesson plans that highlight the science and engineering practices scientists use to explain the phenomenon of climate change.

www.nsta.org/our-beautiful-planet

The Diversity in Water Speaker Series

...invites leaders in Ohio's water industry from diverse backgrounds to discuss their careers, lend us their life lessons, and help lead the discussion on championing diversity within the water industry and in our day-to-day lives.



Thursday, March 10, 2022 at 5:30 PM

Speaker: Cathy Bailey, Great Cincinnati Waterworks

Cathy Bernardino Bailey is the Executive Director of the Greater Cincinnati Water Works Department (GCWW). In over 200 years, Cathy is the first woman and first African American to lead Cincinnati's major, independent, municipal water utility. Cathy leads a drinking water and stormwater team that ensures safe drinking water for a regional population of more than 1.1 million citizens and protects the city from overland flooding. She supervises a team of 600 full-time employees and oversees a \$110 million operating budget and a \$70 million annual capital budget.

Cathy is a strong champion and key visionary behind Greater Cincinnati Water Works' award-winning Lead Service Line Replacement Program. Cathy has distinguished herself as a leader throughout her career, focusing on communications, strategic thinking, innovation, technical excellence, outreach, and teamwork. Cathy actively serves as a board member for the Water Research Foundation and the US Water Alliance and is the Policy Committee Chair for the Association of Metropolitan Water Agencies.

Cathy was recognized as one of the 2018 Greater Cincinnati YWCA's Career Women of Achievement, one of the Cincinnati Venue Magazine's 2018 Women of Influence, and is one of the 2021 American Water Works Association Diversity and Inclusion Award Recipients. Locally, Cathy also enjoys serving in the community as a member of Delta Sigma Theta Sorority Inc. Cincinnati Alumnae Chapter. She continues to be active as a board member of The Children's Home and Woman's City Club.

Please RSVP: The event will be held virtually via Zoom; to receive the meeting link, please RSVP here: <https://www.eventbrite.com/e/diversity-in-water-cathy-bailey-march-2022-registration-200925151537>.

YouTube: We have a YouTube channel where you can see any talks you missed! <https://www.youtube.com/channel/UC3G0bz3nV4GzAFvgTZbpCrA>

Future events: To sign up for notifications about our future events, please go here: https://docs.google.com/forms/d/e/1FAIpQLSdZp-6b0tLPYear5gbjZSPJ1_p7JMUHU2j5iMvptjK2kAhN0Q/viewform.

Earthrise to Racing Extinction: Nature Photography & the Environmental Movement Special Session at the EECO Annual Conference

Friday April 1, 2022

7:15 pm

Ohioami Room



*Photo courtesy of Steve Naanum and C.L.I.C.K
(Conservation Lessons Involving Cameras and Kids)*



The Discontent of Our Winter

.....thought provoking article

Orion Magazine published a great article nearly a decade ago about children's winter experiences. The author Sandra Steingraber shared the changed experience for today's children when it comes to winter fun.

We hope you enjoy this article as much as we did.

https://orionmagazine.org/article/the-discontent-of-our-winter/?mc_cid=327e1c93d6&mc_eid=e97837be3f

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>

Educators' Week 2022: The Same, but Different!

June 5-10, 2022

Shawnee Lodge and Conference Center

Are you an educator? Do you want to connect with other educators who have a passion for their work? Join formal and non-formal educators in their quest for new knowledge and teaching techniques during Educators' Week in beautiful Scioto County, Ohio. Educators' Week provides opportunities to gain an understanding of topics related to state academic standards by being immersive in a natural setting and creating a supportive learning environment. Attend sessions that will explore hands-on best practice strategies for introducing people to the natural world. Learn from top experts on a wide range of cross curricular topics and explore new methods that will enhance your skills as an educator. By the conclusion of this unique, retreat-like conference, you will come away with a renewed sense of wonder, a feeling of community and kinship and the confidence to share your new knowledge with others.

Hosted by Cincinnati Museum Center's Edge of Appalachia Preserve System and supported by the Miami County Park District, Educators' Week will be celebrating its 13th year at Shawnee State Park located in the rugged and rolling foothills of the Appalachian Mountains. Adjacent to the 63,000-acre Shawnee Forest, this area of Southern Ohio is a wonderful example of the Eastern Forest. High quality streams along with a high diversity of plants and animals make it a perfect outdoor learning lab. In addition, on-site facilities will allow people to gather for meals, large group learning sessions and fellowship.

Educators' Week will take place June 5-10, 2022 at Shawnee Lodge and Conference Center which is located approx. 15 miles west of Portsmouth, Ohio.

Lodging and meals are included in the cost of registration as well as electronic copies of all session materials, a set of ODNR Field Guides, t-shirt, notebook and other helpful items.

Please go to <https://educatorsweek.com/> for more information.



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.

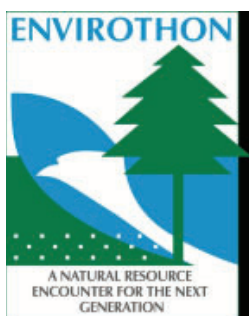
For Environmental Professionals - If you would like to be more involved by volunteering to be a Career Ambassador, please contact the EECO Executive Director director@eeco-online.org. You can also check out the the Environmental Professionals Network (EPN) hosted by the School of Environment and Natural Resources at The Ohio State University. <https://epn.osu.edu/>.

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

EECO is also seeking volunteers to assist at the Annual Conference, March 13 - April 3. If you are interested in helping at the check -in, being a driver for a fieldtrip, or assisting in the silent auction, please contact Lynn White whitelr@butlercountyohio.org.

Ohio is hosting the NCF Envirothon!

North America's Largest High School Environmental Education Competition



The National Conservation Foundation (NCF) Envirothon is an environmental and natural resource conservation problem-solving, teambuilding and leadership experience and competition for high school students (grades 9-12 or ages 14-19) across the United States, Canada, and China. Incorporating STEM (Science, Technology, Engineering, and Math) principles, experiential learning, and hands-on outdoor field experiences, the Envirothon fosters student learning in the areas of aquatic ecology, forestry soils, wildlife, and a current environmental issue.

Each year over 25,000 high school students across the United States, Canada and China embark on a journey to offer solutions to this critical question through the NCF-Envirothon! This year, Ohio will be hosting the North American competition at Miami University in Oxford, Ohio. To compete at this event, Ohio students must first compete in an area contest this Spring. The top four teams from each area advance to a state competition in June. The best team in Ohio will then advance to this international competition.



If you and your students are interested in competing, please contact your local Soil and Water Conservation District. <https://agri.ohio.gov/divisions/soil-and-water-conservation/find-a-local-swcd>

Learn more about the NCF Envirothon <https://envirothon.org/>



Contact EECO

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

Regional Directors

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Linda Pettit, Franklin SWCD
lpettit@franklinswcd.org

Region 2 - NW Ohio

Jennifer Elsworth, Metro Parks of the Toledo Area
jennifer.elsworth@metroparkstoledo.com

Region 3 - NE Central Ohio

Sheila Cubick
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Region 4 - SW Central Ohio

Donna Lewis, Clark County Park District
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Region 5 - SW Ohio

Errin Howard, Riverworks Discovery
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Region 5 - SW Ohio

Gia Giammarinaro, Cincinnati Parks
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Region 6 - N Central Ohio

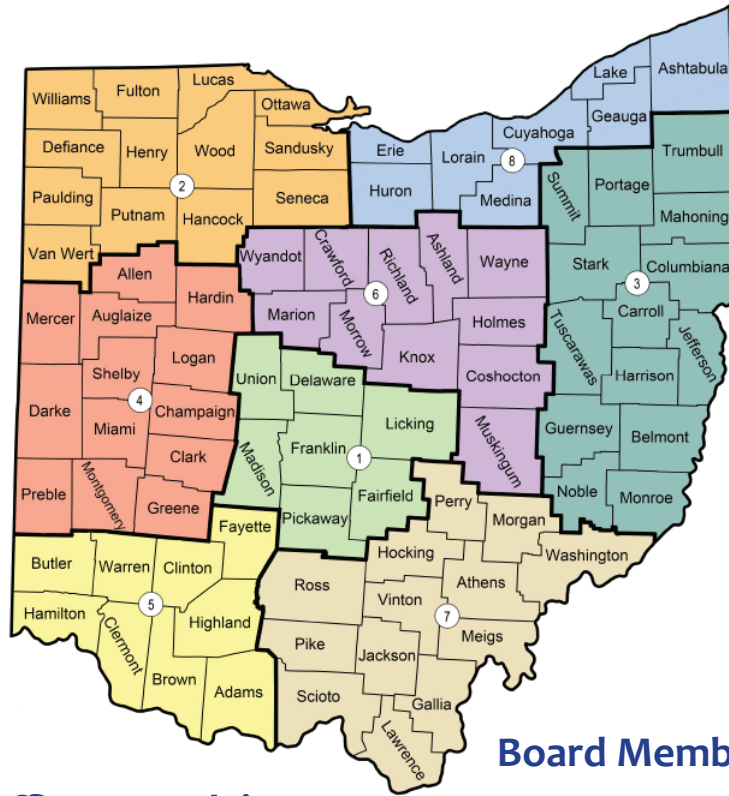
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Region 8 - NE Ohio

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