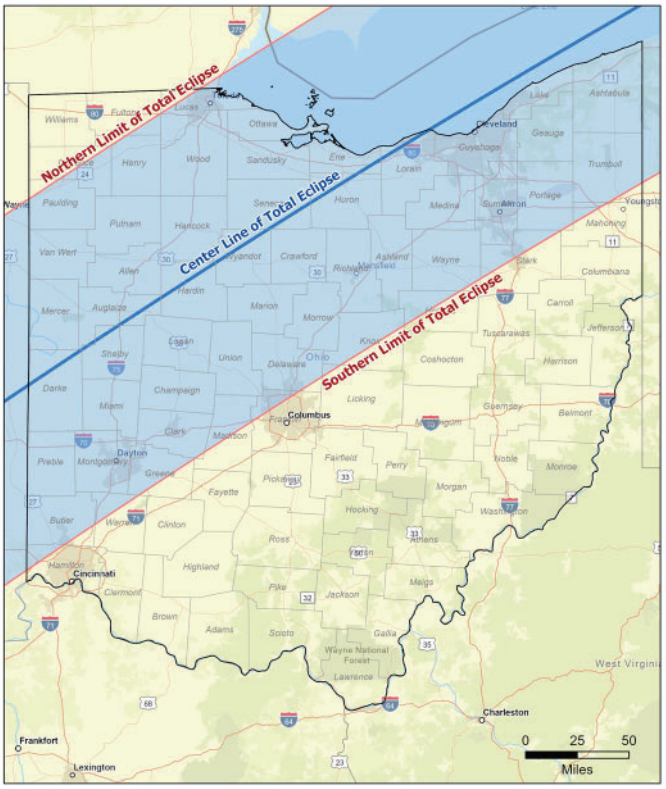
EECO

Environmental Education Council of Ohio

Preparing for the Eclipse *Winter 2023*



Total Solar Eclipse Path through Ohio
April 8, 2024

September 30, 2021

What is Happening April 8th & Why is It So Special?

By: Lydia Hunter, Ohio Department of Education and Workforce

Much of Ohio has an opportunity April 8, 2024, to experience something which has not occurred anywhere in our state since 1806. I am talking, of course, about the much-publicized total solar eclipse. This article will provide some basic background about the types of solar eclipses, how they occur and why "once-in-a-lifetime" doesn't even come close to their actual frequency for a location.

How does a solar eclipse occur?

Quite simply an eclipse happens when the moon passes in front of the sun and blocks some or all of the sun's light from reaching Earth's surface. Although the moon is A LOT smaller than our sun, the equal proportional relationship of their sizes and their distances from Earth make them appear to be the same size as viewed from our vantage point. We are lucky enough to be living on Earth at a time when total solar eclipses are possible. Because the moon is gradually moving further from our planet, at some point in

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Save the Date

Taste of Nature
Novemeber 17, Lancaster, Ohio
https://eeco.wildapricot.org/event-5446634

OEEF Grant deadlines
Letter of intent, January 10, 2024
Grant application, January 17, 2024
For grant writing workshops, please see page 6.

WINTER Snow Conference
January 26-27, Camp Nuhop: Hemlock Campus, Butler, Ohio
www.eeco-online.org

39th annual Wildlife Diversity Conference
March 14, 2024
At the Ohio State University's Ohio Union in Columbus

Student Wildlife Research Symposium
April 11, Salt Fork State Park, Ohio
https://ohiodnr.gov/discover-and-learn/education-training/environmental-education/student-wildlife-research-symposium

EECO Annual Conference
April 12-14, Salt Fork State Park, Ohio
www.eeco-online.org

the future it will be too far from Earth to completely cover the sun. Total eclipses will no longer take place.

Why are eclipses so rare?

The moon orbits the Earth once every 29.5 days so one might think an eclipse would be monthly. However, the moon's orbit is tilted about 5 degrees so the Earth, moon and sun only actually line up about twice a year. Also, the moon is not always the same distance from Earth throughout its orbit. When it is slightly further from Earth its shadow is not large enough to completely cover the sun.

What are the types of solar eclipses?

• Total eclipse: The moon completely covers the main part of the sun. A total solar eclipse happens somewhere every year or two, but the path of totality is very small and often passes over oceans, polar regions or other areas that aren't convenient for viewing. A total eclipse shadow crosses the same spot on Earth's surface only once every 360-410 years.

• Annular eclipse: This is just like a total eclipse but happens when the moon is slightly further from Earth so it appears smaller and cannot quite cover the entire sun. It results in a bright ring, or annulus, with the dark moon covering the center of the sun. An annular eclipse crossed the southern United States October 14, 2023.

• Partial eclipse: It's not quite as special as the other two but more frequent. The moon's path does not center exactly on the sun and only part of the sun is blocked. Areas outside the main path of a total or annular eclipse will also experience a partial eclipse. The closer to the path of totality the greater percentage of the sun will be eclipsed. Areas as far as 2000-3000 miles from totality can still see a partial eclipse. This is why all of North America had two eclipse opportunities this school year. Sadly, most of Ohio was cloudy during the October annular eclipse. Hopefully April 8th will be clear!

What makes a total eclipse special?

Partial eclipses are viewed but total eclipses are experienced! The difference between partial phases and totality is literally day and night. The sun is so bright that an eclipse does not even make a noticeable change in daylight until more than 90% of the sun is covered. And even when 99% of the sun is eclipsed it's just like twilight. It's only during totality that the "day becomes night". At that time the sun's atmosphere, the corona, is visible. This is the best opportunity researchers have to study the sun's corona, so lots of data collection happens during the few minutes of totality. The corona is amazing for everyday viewers too. During the brief totality you can safely remove your solar viewing device and look directly at the corona.

As you experience the various phases of the total eclipse be on the lookout for various phenomena such as the shadow approaching from the distance, shadow bands on the ground, Bailey's beads, diamond ring and more. Humans are not the only animals to respond to eclipses so be sure to check what the mammals, birds and insects around you are doing. You can read more about these effects and when to expect them in the many resources listed later in this newsletter.

Taste of Nature Fundraiser

This exciting event is to support the Environmental Education Council of Ohio paid internship program.

We are thrilled to have The View host us for the FUNdraiser. There will be live music by the Dan Neeley Project, a cash bar, local foods for tasting and a wine tasting option. In addition to the food, drink and music, we will also have a silent auction. Some items available in the auction include pottery, a four-night stay at a cabin in a gorgeous natural area in Athens or beautiful Lake Norman, North Carolina, a two-night stay at a state park lodge of your choice, wine, crafts, andmany, many more!

Plese register online at *https://eeco.wildapricot.org/event-5446634*

Wildlife during the Total Solar Eclipse Join our Research Project!

By Abby Ditomassi,
Wildlife Education Coordinator,
Division of Wildlife

On April 8, 2024, a total solar eclipse will sweep over Ohio for the first time since 1806. There has been a lot of hype over this once-in-a-lifetime event since the next total solar eclipse in Ohio will be in 2099. While people all over the country may be looking up to the sky to experience the eclipse, I encourage you to look around and observe how wildlife reacts to this rare spectacle.

I experienced my first solar eclipse when I traveled to Tennessee with friends in August of 2017 to be in the path of totality. While I didn't think to observe wildlife during the eclipse, the noticeable temperature drop as the moon blocked the sun's light is hard to forget. During those few minutes of total darkness, swarms of mosquitoes came out to snack on me and my friends. This was quite unexpected! Thankfully, Ohio's 2024 eclipse will occur in early April when mosquitoes are less active.

Since total solar eclipses are rare, most of what we know about wildlife behavior during the eclipses is anecdotal, like my mosquito observation. These anecdotal observations have, however, been supported by a few studies. According to a study conducted in Nebraska during the 2017 eclipse, which lasted for a total of three hours with 2.5 minutes of totality, light levels dropped by 67%, leading to a temperature drop of 6.7 degrees Celsius and a 12% increase in humidity. In the order Orthoptera, which includes crickets and katydids, it is known that the call frequencies lower when temperature drops and increase when temperatures rise. Field and tree crickets, normally nocturnal callers, increased their calls during totality, whereas cicadas and ground crickets, which call during the day, became quiet at totality. Birds also reported lower levels of call volume during totality for four different prairie and woodland sites, since most species call during daylight hours. The volume of bird calls then resumed to pre-eclipse levels after totality. Although bats and owls have been observed anecdotally during total solar eclipses, this study found no evidence of activity from these nocturnal animals. Other species have also been observed by researchers in other countries, such as honeybees returning to their hive during totality and orb-weaving spiders taking down their webs during totality, only to rebuild after the sun returned.

A very limited amount of data is available on fish, reptiles, and frogs during the eclipse. This is not surprising given the difficulty of tracing around the world to research wildlife during these rare total eclipses. Perhaps we should assist scientists by making sound scientific observations for them since millions of people will gather in the path of totality. Even if you don't take your eyes off the eclipse, listen for animals that are (or aren't) singing, such as songbirds, insects, frogs, and owls. You can use the Merlin Bird app or iNaturalist to record audio clips before, during, and after totality to make the data official. A project has been created on iNaturalist to collect observations on eclipse day. If you are interested in contributing to citizen science data through photos or audio, you can join the Ohio Wildlife Observations: Solar Eclipse 2024 project here. I hope to observe frogs and hypothesize that spring peepers will increase call rates as totality approaches and decrease rates to pre-eclipse levels after totality passes since they are usually nocturnal singers. What type of animal will you observe during the 2024 solar eclipse?

Experience the solar eclipse with your senses!

Focus specifically on your sight, touch, and hearing. Enjoy the magic!

By Annika Moore, math specialist, Ohio Dept of Education and Workforce

Plan time for the experience.

USE SPECIAL ECLIPSE GLASSES TO PROTECT YOUR EYES!

Start around 1:30p.m. on April 8, 2024 and plan to stay until around 4:30p.m..

Find a space where you have nature around you, a field with trees and bushes around the perimeter, a yard with some trees and bushes or by a lake, all these places will be perfect. Make sure you can see the sun from where you are.

Bring a blanket or a chair to sit on. Make sure you have water to drink if it is a hot day. Bring some snacks as well. Make it an Eclipse Picnic.

Make sure that the people you are with will be fine with you asking them to be silent at certain times.

Around 1:30-1:45

Feel the temperature in the air.

What does it feel like? Try really describing the warmth on your body, don't forget about describing the humidity, the wind and anything else you experience.

Listen to the sounds around you. This is when you want to listen to nature, not the people you are with. Ask them to be silent and listen with you. Talk about what you hear. Are there birds making sounds, are there other animals making sounds, does the wind make any sounds going through the trees and bushes?

Wearing your special, protective glasses – what does the sun look like? Are there clouds (I hope not) covering the sun? Will there be a risk for clouds to cover the sun in the next hour or so?

Around 2:00

The moon will start to slowly, slowly cover the sun. You probably won't notice it in the beginning.

Can you figure out which of the three astronomical bodies are moving, the sun, the moon, and/or Earth? If they are moving, in which direction are they moving?

Around 2:45 – 3:15

Focus on the eclipse and be silent.

WEAR YOUR PROTECTIVE GLASSES ALL THE TIME! If you in the band of totality, you can take the glasses off for totality, but only while the sun is completely eclipsed. Be sure to put them back on before the first speck of the sun reappears.

Watch how the sun gets more and more covered.

When the sun is totally covered – is it just a black spot in the sky? Try to remember what it looks like (because it will take another 400 years before you can see it again from the same spot!).

Watch as the sun slowly starts to appear again.

At the same time

Feel the temperature in the air. What does it feel like? Try really describing the warmth on your body, don't forget about describing the humidity, the wind and anything else you experience.

Listen to the sounds around you. This is when you want to listen to nature, not the people you are with. Ask them to be silent and listen with you. Talk about what you hear. Are there birds making sounds, are there other animals making sounds, does the wind make any sounds going through the trees and bushes? Is this different from what you heard earlier in the afternoon?

After totality ends

Watch as the moon slowly moves past the sun. What changes do you notice as things return to "normal". I hope you enjoy your eclipse experience.

2017 Solar Eclipse from Cleveland, Ohio. Photo by Nicholas Eckhart

Winter Snow Conference
Creative Ways to Teach STEAM in the Winter

January 26-27, 2024

Camp Nuhop, Hemlock Campus

5370 Bunkerhill North Rd., Butler, OH 44822

Presentation topics are diverse and if possible relate to winter, but typically relate to one of the following: STEM, Arts, Environmental Literacy, 21st Century Skills or Careers and the Environment.

Full schedule and session information will be posted soon on the EECO website alongside the registration information at *https://eeco.wildapricot.org/*

Questions: Contact Amanda Kriner at *akriner12@gmail.com*

EECO 2024 Annual Conference
Call for Presenters

April 12-14 • Salt Fork State Park

More information including registration will be made available later in the year at *https://eeco.wildapricot.org/*

Proposal Deadline: Please submit your session proposal by returning the application by November 27, 2023. *https://eeco.wildapricot.org/resources/Call%20for%20Presenters%202024%20updated.docx*

Electronic submissions are preferred and greatly appreciated. Submissions and questions should be submitted to Denise Natoli Brooks at *dbrooks@centralstate.edu*. You will be notified of the status of your proposal in December.

Conference Strands

We Believe in Honoring Natural and Cultural History in Environmental Education – Presentations can span different disciplines that cover Ohio waterways, animals, fungi and plants interacting with their natural environment, each other, and people past and present.

We Believe in the Future of Environmental Education – Presentations should focus on programs and projects that implement the use of technology and other STEAM disciplines in nature, encourage the pursuit of environmental career paths, and feature resources available that make connections to existing and future careers, including those that address climate change.

We Believe in the Business of Environmental Education -Presentations should focus on strengthening, improving and sustaining organizations including financial solvency, talent acquisition and retention, and strategic program development. What works for your organization and how can that be translated to others?**We Believe in Inclusion in Environmental Education** - Presentations should focus on EE opportunities that encourage justice, equity, diversity, inclusion and accessibility.

Explore NASA Resources for the Total Solar Eclipse

By Janet Struble, NASA CAN: Mission Earth, The University of Toledo

It is not often that the public can experience a phenomenon in real-time as spectacular as a total solar eclipse. NASA and the Global Learning and Observation to Benefit the Environment (GLOBE) Programs have joined forces to inform the public about this phenomenon. The NASA sites mentioned below is just a short list of what NASA has to offer.

National Informal STEM Education Network (NISE)

This is a website designed for informal educators: *https://nisenet.org/solareclipse*. If you are hosting an event on April 8, 2024, start here. A great site to search for resources across most NASA websites is *https://www.nasa.gov/eclipse*. Type in "eclipse" in search bar and a list of resources will appear. NASA projects, NASA eClips and NASA HEAT, teamed up to create a LiveBinder which consolidates all NASA online resources: *https://www.livebinders.com/b/3438227*. Some NASA resources may not be listed in the binder since more online materials are launched every month.

The Science behind the Total Solar Eclipse

Do you need a refresher on the science of eclipses? On April 8, 2024, the moon will cover the sun entirely in a total solar eclipse; the sky is totally darkened in the path of totality. To find out more on the science behind this phenomenon, check out these websites: animations, *https://svs.gsfc.nasa.gov/5093/*; and 3D interactive, *https://science.nasa.gov/eclipses/*.

Most of the public does not realize that solar sclipses occur every year in different locations on Earth. Two to five eclipses can happen in one year, but the next total solar eclipse to be seen from the contiguous United States occurs on Aug. 23, 2044. The following sites lists the past and/or upcoming eclipses: *https://science.nasa.gov/eclipses/future-eclipses/* (NASA HEAT) and *https://eclipse.gsfc.nasa.gov/solar.html* (NASA Goddard).

The View at your Location

A map showing the path of the April eclipse is located at *https://solarsystem.nasa.gov/eclipses/2024/apr-8-total/where-when/*. To see what will happen in your area, go to h*ttps://eclipse2024.org/eclipse_cities/*. Type in your location, an animation will begin; your local time appears in the upper right corner. With the animation, you will see the beginning and end times for total coverage of the sun. NASA suggests pausing all activities at total coverage and just enjoy the beauty of the total solar eclipse.

Safety

Remind your nature enthusiasts to protect their vision by wearing solar eclipse glasses. The only time you can view the sun without solar glasses is in 100% totality that is when the moon blocks out the whole sun. Be aware not all solar glasses follow the same safety standard. To avoid "fake" glasses, look for glasses labeled with the ISO 12312-2 safety standard label. Old solar glasses can be used as long as there are no scratches on them. Check out this website on safety: *https://science.nasa.gov/eclipses/safety/*

For younger students, my recommendation is to attach the solar glasses to large cardboard plates to totally block their vision. This example is the easiest to make: *https://mynasadata.larc.nasa.gov/lesson-plans/solar-eclipse-safety-activity*. Also, this lesson offers another option by cutting out a narrow triangle for the nose and mouth.

Other methods to observe the eclipse indirectly is using pinhole projectors by punching a hole in cardboard or paper (*https://mynasadata.larc.nasa.gov/lesson-plans/how-safely-observe-eclipse*) or using objects containing holes such as a colander. NASA projects that held public viewing events on the October 14, 2023, reported that their attendees rated the activity "using a colander with circle holes" as the best activity. Look at The Exploratorium for more ways to observe the total eclipse indirectly: *https://www.exploratorium.edu/eclipse/how-to-view-eclipse*.

Planning Activities

The best resource for activities in informal settings is the NISE website (mentioned earlier): *https://nisenet.org/solareclipse*. My NASA Data website (*https://mynasadata.larc.nasa.gov/phenomenon/solar-eclipse*), designed for educators, houses lesson plans and activities which you can adapt to fit your event.

GLOBE and Soundscapes: Collecting data during the Eclipse

Global Learning and Observation to Benefit the Environment (GLOBE) Program, partially funded by NASA, works to help citizens

understand the phenomenon of eclipses by looking at data that citizens collect and submit. You may be interested in contributing to the research being done on solar eclipses. Scientists used the GLOBE data sets from the 2017 Total Eclipse to study the changes in clouds and air temperature (*https://observer.globe.gov/hidden/science-connections/eclipse2017*).

In GLOBE, you create an account as a "citizen scientist" to submit data on clouds, air temperature, and land cover in the GLOBE Observer Eclipse App. The tool tracks the eclipse at your location and prompts you to collect data at certain time intervals. You can pick what protocol and data you would like to enter. Clouds is the easiest to do; the App guides you through the data collecting. You can learn more about the tool on the GLOBE Observer Eclipse App (*https://observer.globe.gov/do-globe-observer/eclipse*) website. Here is the link to create a citizen scientist account in GLOBE: *https://www.globe.gov/about/ready-to-join/create-an-account*. Note: The GLOBE Observer Eclipse App is only open 48 hours before and after the occurrence of solar eclipses. You can practice collecting and entering data by using the GLOBE Observer App.

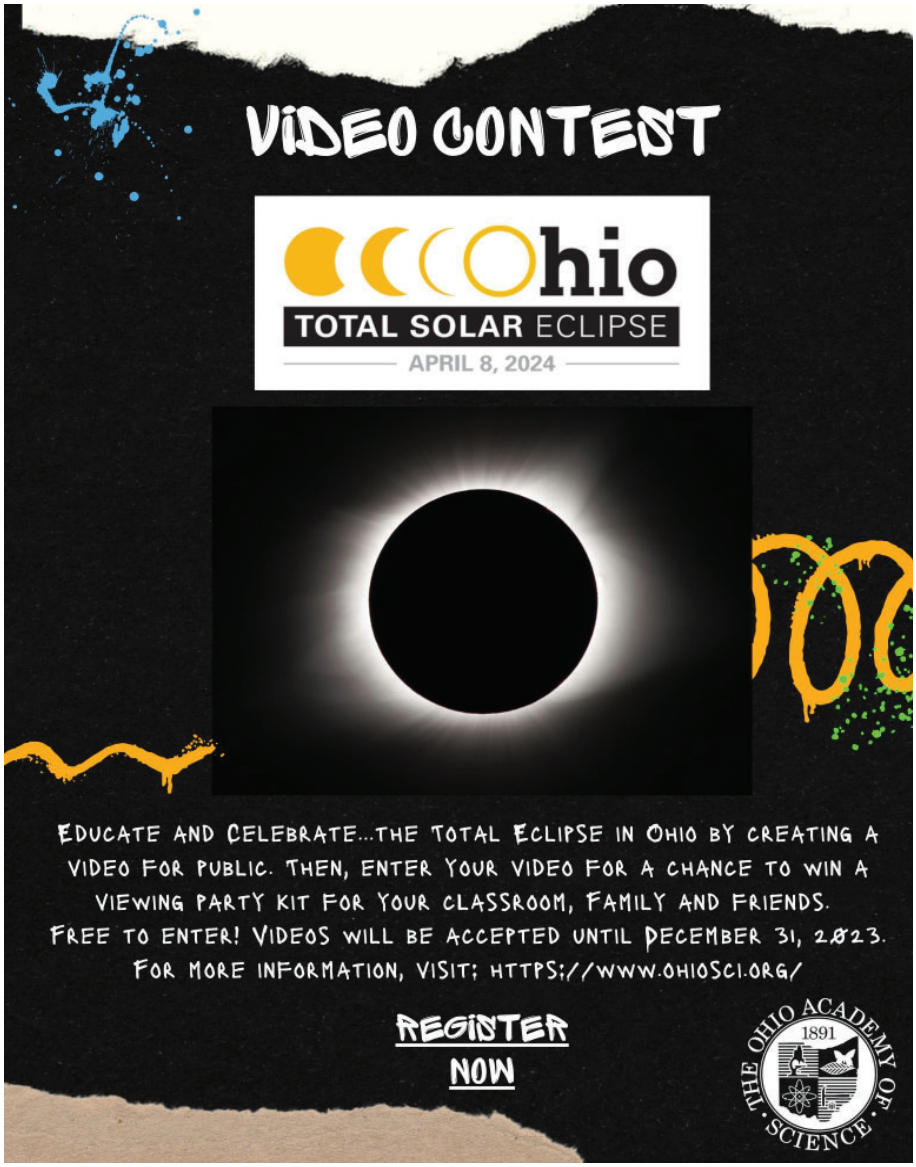
Soundscapes, a newly funded NASA citizen project (*https://eclipsesoundscapes.org*), researches the sounds in nature as a solar eclipse occurs. The project sends you an AudioMoth device equipped with micro-SD card to collect the sounds of nature in your area during the solar eclipse. After the eclipse, you send the SD card to the project. Soundscapes created roles of participation: Group Leaders, Individuals, Library Staff, Park Staff, Scientists, and Educators. Click on a "Role" and you will see Programming Ideas, Facilitator Training and Facilitator Resources.

More Information is Coming!

NASA has stated that the agency will continue to roll out more information on the "Total Solar Eclipse" in the year 2024. Look for new information. NASA Goddard is releasing new eclipse resources monthly, so check their website: *https://www.nasa.gov/feature/goddard/2023/sun/nasa-releases-new-solar-eclipse-educational-materials*.

There is a wealth of information out there! Start your research journey today by looking at what NASA has to offer. Remember to take time to enjoy the total solar eclipse on April 8, 2024.

Janet Struble is project manager for GLOBE Mission Earth, a project supported by NASA under grant award No. NNX16AC54A, housed at The University of Toledo. Contact information for Janet Struble, *janet.struble2@utoledo.edu*



So, You Want to Host a Solar Eclipse Viewing Event?

By Don Stevens, Director of Perkins Observatory, Ohio Wesleyan University

Total solar eclipses are rare celestial events that capture the imagination of people worldwide. The opportunity to witness the moon completely covering the sun, plunging the world into brief darkness, is a captivating experience. If you're considering hosting a total solar eclipse viewing event, you're in for a truly unforgettable experience. In this article, I'll guide you through the process of organizing an event that will allow your community or guests to witness this awe-inspiring phenomenon.

Do's

• Be organized. Solar eclipses occur infrequently, so it's crucial to plan well in advance. There are no second chances if something goes wrong in your planning.

• Probably the most important first step is to check local regulations and obtain any necessary permits for hosting large gatherings. Some communities have limits on large public gatherings because of limited resources in case of unexpected emergencies, limited infrastructure, and limited public services.

• Choose a location with a clear, unobstructed view of the sky. A parking lot or an open field can be ideal locations for setting up telescopes and equipment. Make sure the equipment is safe and in working order. This is essential to ensure a safe and successful event.

• Make sure that the venue is easily accessible and has amenities like restrooms, sufficient parking, shelter, and safety provisions.

• Consider providing food trucks or concessions for attendees to purchase snacks and beverages. Keep in mind dietary restrictions and provide options for all preferences. Again, check local regulations/permits.

• Enhance the event experience by including live music, entertainment, or other activities during the eclipse's waiting period. This can help create a festive atmosphere.

• Offer eclipse-themed educational materials, souvenirs and merchandise that includes t-shirts, posters, and memorabilia. This can be an excellent way to fundraise for the event and give attendees something to remember. NASA and many other publicly funded organizations often offer free materials on request. Be sure to reach out to them sooner rather than later because demand for such things will only increase at it nears time for the eclipse.

• Educate and set expectations. Invite knowledgeable guest speakers or local astronomers to educate the attendees about the eclipse, its significance, and the science behind it. They can also guide viewers during the event. Ensure there are knowledgeable volunteers or amateur astronomers available to guide viewers during the eclipse. They can explain what's happening and answer questions. Local universities, observatories, and astronomy clubs are good resources for speakers. Some do charge so be sure to budget for it. Offering honorariums are the way to attract good speakers.

• Inform attendees about the timing of the eclipse and when it will reach totality. Provide a schedule or a countdown to help everyone prepare for the main event.

• You can organize workshops and interactive exhibits related to astronomy and space science before the eclipse. This can engage and educate the audience, excite them, and help make the eclipse more enriching.

• Ensure that first-aid facilities are available, and security measures are in place to manage the crowd and keep everyone safe.

Don’ts

• Don’t be careless about safety. Emphasize it! Use the proper equipment for solar viewing. Provide eclipse glasses, solar filters for telescopes and cameras, and binoculars if possible. Safety is paramount when viewing the sun. Eclipse glasses should meet international

Total solar eclipse 2017.
Photo by Yellowstone National Park

safety standards to protect the eyes from harmful solar radiation. Verify that eclipse glasses have the correct ISO number.

• Don't allow others outside the organization to handle equipment. Make sure you always have staff or volunteers manning telescopes.

Promoting Your Event

There are lots of ways to promote your event. It can be done through social media, local newspapers, community bulletin boards, and relevant organizations. Utilize websites, forums, and mailing lists dedicated to astronomy and space enthusiasts. How much and where you promote it can influence the amount of interest or excitement for the event. If you have limited space and resources, then you might want to be conservative in promoting it. Consider making your event accessible by reservation only. Give a cutoff date and time to sign up for it and stick to it.

Accessibility

Accessibility is also an important consideration. Unfortunately, most telescopes are difficult or impossible to use from a wheelchair. Consider having a digital camera hooked up to a solar telescope to make it easy to see. Eclipses are often livestreamed by NASA and many observatories in the eclipse path. These can be shown on a large screen that all participants can enjoy.

Other Advice and Considerations

• Keep attendees informed about the weather conditions, as cloudy skies can affect eclipse visibility. Have a contingency plan in case of adverse weather.

• As mentioned above, it might be necessary to have plenty of parking available for your visitors. You should also have enough volunteers or staff on hand to help direct guests where and how to park. Reserve plenty of extra spaces for those with mobility issues.

• In the last decade or so, large public gatherings have often been the targets of criminal activity and terrorism. Make sure you have alerted local authorities about your event and budget for any security you might need for it.

What to do Post Eclipse

Even after the eclipse, there are ways to continue your outreach efforts. Encourage attendees to share their eclipse photos and experiences on social media. Consider organizing a photo contest to engage the community. You can also plan follow-up events, such as astronomy lectures or stargazing nights, to keep the interest alive within your community.

Conclusion

Hosting a total solar eclipse viewing event can be a remarkable experience that brings people together to witness a celestial spectacle. Proper planning, safety measures, educational activities, and entertainment can make your event a memorable and enriching experience for all attendees. Don't forget to promote your event effectively to attract a broad audience and share the wonder of a total solar eclipse with your community. By following the outlined steps, you can ensure that your eclipse viewing event is a resounding success.

Additional Resources

http://owu.edu/perkins

https://ema.ohio.gov/media-publications/ohio-total-solar-eclipse

Save the Date

February 27, 2024

4:15 p.m.

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

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

Register at https://bit.ly/Eclipsetalk

Navajo (Diné) Eclipse Traditions

Navajo star knowledge is based on a world view and cosmology significantly different from western academic astronomy. Navajo astronomy can best be understood within a much larger context of Navajo philosophy. The San Fransicso Expolaratorium has great information on the Navajo knowledge of the Cosmos.

www.exploratorium.edu

Youtube Channel: Navajo traditional Teachings

Wally talks about what the eclipse means to Navajo people

https://www.youtube.com/watch?v=tRyQelKn-70

Resources for the 2024 Solar Eclipse

There are a wealth of resources available to help you prepare for the upcoming eclipse. Here are some places to start exploring.

The statewide task force has an **Ohio Statewide Eclipse Website** which contains general information and interactive maps of things to do in Ohio. *https://ema.ohio.gov/media-publications/ohio-total-solar-eclipse*

The Department of Education and Workforce eclipse website has resources and information geared more specifically to schools and K-12 students. *https://education.ohio.gov/Topics/Learning-in-Ohio/Science/Resources-for-Science/2024-Solar-Eclipse*

The National Science Teaching Association has a wealth of ideas and materials on the NSTA eclipse website. *https://www.nsta.org/eclipse*

This video for principals and administrators prepared by the Fiske Planetarium could be useful if you have people in your organization that feel it would be unsafe to allow students to view the eclipse. It explains what a wonderful educational opportunity the eclipse provides. *https://www.youtube.com/watch?v=sz3F4Kg6rSY*

Dr. Gordon Telepun, an amateur astronomer, gave an extensive talk covering many aspects of eclipses, including his personal experience during five different total solar eclipses, along with tips for viewing and photography. *https://www.youtube.com/watch?v=wsTqS-DCnQPk*

Many science centers and other organizations have eclipse 2024 materials on their websites. Check with the ones near you. One example is the **Exploratorium in San Francisco**. *https://www.exploratorium.edu/eclipse*

Join the Environmental Education Council Of Ohio

By joining EECO, you will receive:

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

EECO

Environmental Education Council of Ohio

2023 Project WET Coordinator Conference

By Dennis Clement, Ohio Project WET Coordinator

Water Rocks! Was the theme for this year's coordinators conference held in Cleveland, Ohio August 7-11. Coordinators from across the country and Canada enjoyed a week in Cleveland where the weather cooperated for workshops, networking, tours, and a Lake Erie Boat Tour on the Goodtime II.

Monday, 24 new facilitators went through training to eventually hold local educator workshops in their local areas across Ohio. New state coordinator training was held in conjunctions with the facilitator training. Bill Zawiski, Manager NE Ohio EPA Surface Water provided a lively presentation on 50 Years of the Clean Water Act. The audience loved Bill's presentation and had many questions afterward.

Tuesday through Thursday had coordinators attending advanced trainings, tours, and hearing from Ohio EPA Director, Anne Vogel on education and outreach by the Ohio EPA. Carolyn Watkins, Chief of the Office of Environmental Education (EE) concluded the conference at the Rock and Roll Hall of Fame with her presentation of Earth Rise to Racing Extinction: Nature Photography and the Environmental Movement. Friday involved an excursion to Put-In-Bay with a tour of Stone Laboratory.

Thank you to our conference sponsors, Water Management Association of Ohio, Ohio EPA, Office of EE, Northeast Ohio Regional Sewer District, Project WET Foundation, Ohio Federation of Soil and Water Conservation Districts, Dutch Heritage Restaurant, and Case Western Reserve University, Leonard Gelfand STEM Center.

Support EE for the world we IMAGINE

...by making a donation to EECO

Would you like to help further environmental education in Ohio? Consider contributing an amount of your choice to EECO. All donations are tax-deductible and will help increase awareness of environmental issues in Ohio. You can donate through our annual campaign *https://givingtuesday.mightycause.com/story/J7ag1g*. Or you can send a check made payable to the Environmental Education Council of Ohio to PO Box 1004, Lancaster, OH 43130. Or you can donate through the website *https://eeco.wildapricot.org/support*.

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

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/oee/

Grant Applications

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

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

Electronic Letter of Intent Deadline is due in early January

Application Deadline is due mid January

Grant Writing Workshops

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

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

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

Upcoming Grant Writing Workshop

December 2, Dayton Ohio

Ohio EPA will be offering one last grant writing training for 2023 on December 2 at Central State University's west campus, 840 Germantown St., Dayton. The training will go from 9:30 until 4. Lunch is not provided.

Registration is required for these FREE workshops. https://www.eventbrite.com/e/748478829327?aff=oddtdtcreator

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

EPN Evening Event: Hemlock-ed In!

Dec 5, 2023, 5:00pm - 7:30pm

Nationwide and Ohio Farm Bureau 4H Center

Join the EPN, the Ohio Department of Natural Resources (ODNR) Division of Forestry, and a well-rounded team of Ohio leaders to celebrate one of our most beloved evergreens and how we can advance hemlock conservation and protect these trees and the unique ecosystems that they foster on public and private lands across the region.

Cost: $25 for non-students, $5 for students, and free for virtual participants

Contact: Callia Téllez, (614) 293-3069, *tellez.13@osu.edu*

Register: *https://cvent.me/DkOBZA?RefId=EPN+Webpage*

Ohio Environmental Education Fund
New General Grant Awards, Fall 2023

For the fall 2023 grant cycle,
Ohio EPA awarded six general grants for a total of $217,868.27.

Girl Scouts of Northeast Ohio, "Education Encouraging Habitat Restoration," F24G-006.
$31,175, Summit County, Audience: Pre-school to University (Primary), General Public (Secondary)
Contact: Katie Brenckle, *kbrenckle@gsneo.org,* 330-430-9605.

The Girl Scouts of Northeast Ohio (GSNEO) would create a nutrient/storm water and habitat restoration educational pilot program, with complete playbooks, equipment lending library for Girl Scout volunteer leaders, and online resources would bridge a gap between non-professionals and existing quality educational curricula and their on-the-ground activities. GSNEO also would create new Girl Scout badges and patches and along with other Girl Scout resources. The project maximizes the 7,700 GSNEO STEM Center of Excellence facility, its three regional camps that include natural wetlands and wetland development projects, and its built-in connections with 18,000 girls and hundreds of volunteers.

Activities include, but are not limited to:
• Modification of instructional playbooks based on experience and feedback from pilot programs;
• Publishing playbooks on Girl Scouts of the United States' troop leader resource website; and
• Updating existing bridged curricula from Project Learning Tree and Project Wet to Girl Scout badges and create bridges for additional curricula to badges.

Clermont Soil & Water Conservation District, "Fostering Sustainable Behavior Trainings and Nutrient Runoff Load Reduction Campaign," F24G-009.
$20,000, Clermont and Hamilton counties, Audience: Regulated Community (Primary), General Public (Secondary) Contact: Sara Fehring, *sara.fehring@hamilton-co.org,* 513-772-7645.

The Regional Storm Water Collaborative would host two one and a half-day training led by noted environmental psychologist Dr. Doug McKenzie-Mohr on how to foster sustainable behavior and achieve desired changes in behavior. These workshops would teach organizations how to develop education programs that overcome barriers while emphasizing the benefits of the activity and achieve true and sustainable changes in behavior. In addition, the Clermont Soil & Water Conservation District would consult with Dr. McKenzie-Mohr to develop a campaign targeting the reduction of nutrient load in stormwater runoff from residential lawns. Resources developed as part of this campaign will be distributed to MS4s throughout Ohio

Activities include, but are not limited to:
• Workshop planning;
• Creating promotional activities; and
• Hosting two separate "Fostering Sustainable Behavior" workshops in the summer of 2024.

Cincinnati Chapter - Izaak Walton League, "Restart SSS Program to Educate about Nutrient Loading in Little Miami River," F24G-010.
$39,758, Clermont and Hamilton counties, Audience: General Public (Primary), Regulated Community (Secondary).
Contact: Alison Lang-Hickey, *alanghickey@gmail.com*, 513-608-2469.

Cincinnati Izaak Walton League of America (Cinci-IWLA) proposes to re-start the Saturday Stream Snapshot (SSS) Citizen Water Quality Monitoring Program on the Lower Little Miami River (LLMI). Data generated would be used to educate the public about impacts nutrients have on LLMR; identify nutrient pollution sources; and educate the public about best management practices to reduce nutrients. Data presentations will be shared with local governments, soil and water conservation districts, the Metropolitan Sewer District of Greater Cincinnati, and the general public.

Activities include, but are not limited to:
• Delivering hands-on homeowner BMP education programs;
• Sharing BMP info on Cinci-IWLA, collaborator websites, social media, and printed/electronic materials; and
• Training up to 50 volunteers will monitor average of 25-40 LLMR sites March-November.

Mill Creek Alliance, "Mill Creek Alliance Outdoor Environmental Education Program," F24G-013, $48,064.
Hamilton County, Audience: Pre-school to University (Primary), General Public (Secondary).
Contact: John Dwyer, *info@themillcreekalliance.org*, 513-563-8800.

This is a continuation of a previous grant. Students would work at restoration sites within the Mill Creek Watershed which offer multiple activities to assess water quality, bank stability, restoration, and biodiversity data collection. Students would gain a foundation for the basic concepts of the following career pathways: environmental, chemical, and civil engineers; resource managers, environmental consultants, construction contractors, and natural science interpretation and city employees in natural sciences.

Activities include, but are not limited to:
• Conducting assessments for Biological/Chemical parameters and collect data to compare to citizen science data from our monthly WQM sampling,
• Learning and practicing basic, foundational STEM skills such as measuring, analyzing, data tracking, and
• Computing in the field linking career pathways such as biologist, watershed scientist, entomologist, and communication specialist.

University of Akron, "The Nature Inspiration Academy: Biomimicry Exploration Activity Kits (BEAKs) and Affinity Groups," F24G-014.
$50,000, Cuyahoga and Summit counties, Audience: Preschool to University (Primary), General Public (Secondary).
Contact: Gary Holliday, *gh30@uakron.edu*, 330-972-7437.

The University of Akron has existing relationships with organizations which support nature clubs for kids – especially during after school hours. Using existing and new curricula, the applicant seeks to incorporate biomimicry (innovation inspired by nature) with curated exploration kits to help affinity groups improve STEM attitudes, knowledge, and skills in underrepresented groups as a way to broaden participation. The proposed project would assemble 3-5 affinity groups called the "Nature Inspiration Academy" in the Northeast Ohio area at schools, libraries, and nature centers. Applicants would develop and strengthen affinity groups with regular meetings and take-home Biomimicry Exploration Activity Kits (BEAKs), that would introduce natural history topics, scientific equipment, and highlight career and academic connections. Field trips, guest experts, group activities, and individual/family exploration would foster further development of content knowledge and interest.

Activities include, but are not limited to:
• Developing activities and providing organizations with BEAK kits;
• Working with students to strengthen STEM skills; and
• Sending materials home with students to foster those skills.

University of Cincinnati - College of Education, Criminal Justice, and Human Services (CECH), "Learning about Biodiversity and Restoration Through Bats F24G-015.
$28,871.13, Hamilton County, Audience: Preschool to University.
Contact: Joseph Johnson, *john5jp@ucmail.uc.edu*, 859-699-8617.

Students would connect the concepts of habitat restoration and biodiversity through passively recording echolocation calls of bats outside of schools. The applicant aims to create a student-centered learning experience that combines technology (bat detectors), fundamental principles of sound waves (bat echolocation), and critical thinking (forming basic hypotheses and examination of simple datasets) to meet various learning objectives. The applicant plans to work with fifth-grade teachers at 10 schools, each surrounded by varying amounts of wildlife habitat, and virtually bring the schools together to share the number of bat species recorded at each location to allow students to draw their own conclusions about the role of habitat restoration on biodiversity.

Activities include, but are not limited to:
• Designing curriculum in collaboration with fifth grade teachers;
• Helping teach students about bat sounds as entry point to learning about biodiversity; and
• Having students investigate the connection between habitat restoration and biodiversity.

Environmental Career Ambassadors

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

For Schools- To invite aCareer Ambassador 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.

Mini Grant Awards, Fall 2023

For the fall 2023 grant cycle, Ohio EPA awarded seven mini grants for a total of $26,346.

Youngstown City Health District, "Litter League," F-24M-005.
$5,000, Mahoning County, Audience: General Public.
Contact: Robert Burke, *bburke@youngstownohio.gov*, 330-742-8280

Youngstown City will be starting a "Litter League", with a goal of educating residents on the importance of litter control and then holding a citywide cleanup. Our litter control division will hold education session to promote resident and business owner buy-in, as well as educating residents on the actual cleanup event and the safety measures that will be in place. The city will then compete with other cities to see who can collect more litter in their jurisdictions during the cleanup event. With a population of approximately 60,000 in the City of Youngstown, the League hopes to capture 75% of the population through outreach, advertising, media coverage, social media, and other events. Budget: Printing, garbage bags, safety vests, gloves, and litter pickers.

Procter Camp and Conference Center, "Vernal Pool Education Space," F-24M-006.
$5,000, Madison County, Audience: General Public.
Contact: Danielle B. Vogel, *dvogel@proctercenter.org*, 740-490-6025.

Procter Center is a 1,300-acre site that houses 70-acres of woodlands, which include two vernal pools that are critical habitats for several species of frogs, toads, red-spotted newts, dragonflies, fairy shrimp, and crayfish, as well as native grasses, shrubs, and trees. Vernal pools are a sought-after eco-system in the state of Ohio, and we want to encourage our campers and the public to explore and learn about these special habitats. Therefore, we are seeking funding to assist with building a boardwalk, or type of raised paths, to these sites, as well as teaching space and educational placards. Potential to reach over, 1,280 campers from the months of May to August. Budget: Lumber.

Archbishop Carroll High School, "Farm to Table an Interactive Hydroponics and Aquaponics Program," F-24M-009.
$3,442, Montgomery County, Audience: Pre-school to University (Grades 10 and 11).
Contact: Todd Tayloe, *ttayloe@carrollhs.org,* 937-253-8188.

The students in Ecology and Zoology at Archbishop Carroll High School will get an innovative hands-on inquiry-based way to learn about sustainability. They will learn about how food is grown in two crops including vegetables and fish. They will also learn about careers and hopefully gain some interests in sustainable agriculture. There are about 50 students in ecology and 50 students in zoology who will benefit next year with the funds to keep our aquaponics and hydroponics going, but it will also help students in the future as well. Budget: Seeds, growing lamps, meters, and heater.

Friends of the Lower Olentangy (FLOW), "Olentangy Septic Smart," F24M-013.
$5,000, Delaware and Franklin Counties, Audience: General Public.
Contact: Laura Fay, l*fay2311@gmail.com*, 614-580-2656.

The Friends of the Lower Olentangy Watershed (FLOW) want to educate our over 2000 Home Sewage Treatment System owners about the value of regularly maintaining their septic system using USEPA's educational Septic Smart program information by reaching each owner directly via multiple postcards or letters and offering the information on FLOW's web page and via public workshops. The importance of regular maintenance in saving money for a well-functioning system instead of a costly repair or replacement should be compelling to landowners and to all FLOW residents in reducing groundwater and surface water contamination as well as reducing septic smells for a healthy watershed. Using GIS information already obtained from our collaborators, we will directly mail each system owner to send information to ensure everyone knows what is required for compliance. Potential to reach over 4,414 people in both counties. Budget: Salary, printing, postage, and contractual services.

Our Lady of Perpetual Help School, "OLPH Butterfly Conservatory," F-24M-016.
$2,005, Franklin County, Audience: Pre-school to University (Grades K-8).
Contact: Kirsten Harberts, *kharberts@ourladyofperpetualhelp.net*, 614-302-6634.

The Gifted Education Program of OLPH is committed to the installation of the "OLPH Butterfly Conservatory" a monarch habitat with forage plantings within the Central Ohio region, a critical area for the endangered monarch butterflies that migrate south to overwintering

sites in Mexico each fall. The need is prevalent due to habitat degradation, urbanism, shifts in climate, and pollution. The goal of the conservatory is aimed at teaching students the causes behind the monarch population decline and to uncover the complex annual migration cycle of butterfly species through citizen science. This project is centered around problem-solving through the creation of a breeding ground for monarch butterflies that allows for its survival. A review of the educational literature indicated the following evidenced-based practices: monarch butterfly curriculum, using live monarchs in the classroom, encourage building butterfly gardens on school grounds as outlined by the Project Wild Curriculum. Project has potential reaching over 390 staff and students. Budget: Plants, cages, soil, mulch, camera, soil test kits, steppingstones, and gardening tools.

Metro Schools – Metro Early College School, "Environmental justice Water Quality," F-24M-018.
$999, Franklin County, Audience: Pre-school to University (Grades 9-12).
Contact: Kevin Cox, *cox@themetroschool.org*, 614-259-6639.

Students will use Vernier probes to measure dissolved ions and molecules including nitrate, ammonium, oxygen gas, calcium in ponds to evaluate the water quality and determine factors that may be negatively impacting the water quality. Students will collect data over the course of each semester in an ongoing project. Project will reach over 100 students. Budget: storage solution, monitoring probes, and storage bottles.

Holden Forests & Gardens, "Resources for Great Council State Park Sustainable Cultivation of Ohio Forest-Grown Products," F-24M-020.
$5,000, Adams, Ashtabula, Athens, Belmont, Coshocton, Cuyahoga, Fairfield, Franklin, Gallia, Guernsey, Hocking, Jackson, Licking, Meigs, Morgan, Muskingum, Noble, Perry, Pickaway, Trumbull, Tuscarawas, Vinton, and Washington Counties, Audience: General Public.
Contact: Jessica Miller, *jmiller@holdenfg.org*, 440-946-4400.

Through the Non-Timber Forest Product Resource Development Project, Holden Forests and Gardens and Rural Action will develop and provide resources to Ohio landowners, small business owners, and the public to encourage sustainable practices in popular and/or pertinent Non-Timber Forest Products that protect forest habitat and natural resources while bolstering communities. In Northeast and Appalachian Ohio alike, forest land is threatened by habitat degradation linked to parcellation, deer over-browse, and pressure from forest health issues such as invasive species, pests, and diseases. Additionally, past land use and current use including overharvesting of timber or sensitive forest herbs for economic gain have detrimental effects on the natural resources and waterways on which all Ohioans depend. This project will create, print, and distribute simple 1-page resources on a couple forest products which can improve forest habitats when cultivated sustainably. Budget: Salary, hammers, logs, drill bit, wax, printing, and contractual services.

Volunteers

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

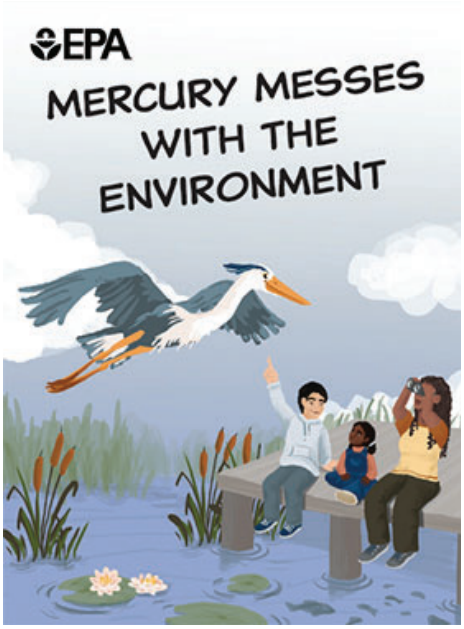
EECO is also seeking volunteers to assist at the Annual Conference, April 12-14 at Salt Fork State Park If you are interested in helping at the check -in, being a driver for a fieldtrip, or assisting in the silent auction, please contact denise Natoli Brooks at *dbrooks@centralstate.edu.*

Free Resource

Children's Activity Book: Mercury Messes with the Environment

This free 20 page download was created by the USEPA. Through games and activities, students will learn about the sources of mercury and the harm it causes. Thereare sections on food webs, watersheds, and even careers.

https://www.epa.gov/system/files/documents/2023-10/tasc-r9-1.0.14-carson-river-mercury-booklet_07-25-2023-final-508.pdf



Project Dragonfly

Miami University's Project Dragonfly is accepting applications for 2024 Earth Expeditions graduate courses that offer extraordinary experiences at global field sites in 15 countries throughout Africa, Asia, Australia, and the Americas. *http://EarthExpeditions.MiamiOH.edu.*

Earth Expeditions can build toward the Global Field Program (GFP), a master's degree that combines summer field courses worldwide with web learning communities so that students can complete the GFP master's part-time from anywhere in the United States or abroad. Applications are now being accepted until January 28. *http://GFP.MiamiOH.edu.*

Project Dragonfly also offers the Advanced Inquiry Program (AIP) master's degree that combines web instruction from Miami University with face-to-face experiential learning and field study through several AIP sites in the U.S. Applications for Miami's 2024 cohorts are being now being accepted until February 28, with place-based experiences provided at eight zoos and botanical gardens, including Cincinnati and Cleveland. *http://AIP.MiamiOH.edu*.

Salt Watch

By Tim McLelland, Hamilton to New Baltimore Groundwater Consortium

What if you were asked to guess the main contributor to salt contamination in water? Your choices are between agriculture and urban inputs in Ohio, you would think it has to be agriculture, right? Let's see which is the answer.

Groundwater is monitored twice a year by collecting water samples from groundwater monitoring wells and analyzing the samples for certain water quality characteristics. Some wells within the Consortium's network are sampled quarterly. Water levels are measured monthly from the network of wells around the region to ensure long-term sustainability of the resource. Quarterly sampling of the Great Miami River also takes place at several locations upgradient of the source water protection areas and within the source water protection areas. This is carried out by one of the founding members of the Consortium, Greater Cincinnati Water Works (GCWW).

A recent study conducted by GCWW was performed to study the impact of salt on groundwater. Increasing sodium and chloride levels can lead to salinization. Concerns associated with groundwater salinization are human health risks, pollution of our aquatic life and environment and corrosion of underground pipes and equipment.

A potential contaminant source inventory was used to identify potential sources of salt in groundwater in the Great Miami Buried Valley Aquifer (GMBVA). The general assumption was that increasing salinization in the aquifer is predominately anthropogenic.

The regional study and groundwater monitoring conducted revealed that sodium and chloride concentrations are increasing in many areas in the GMBVA. The data gathered through the Consortium monitoring well network was used in a binary mixing curve comparing the well data to an established salt source program. Based on this graph and a few others, the chloride/bromide ratios have a consistent increase associated with input from halite most likely from deicers. A conclusion from the research is that communities should holistically balance public safety needs with water quality concerns to properly manage drinking water resources.

As a protector of source water, the Groundwater Consortium started thinking of a plan to act on the recent research. We asked, what is a way for education outreach that is long-term and actively involves the community. Earlier this year, we came up with a plan and our application for the Ohio EPA OEEF Mini Grant was approved for $5,000. The project includes the following:

Educational Signage: First we started by expanding on an already successful project; educational signage. Signage installed in Fairfield's Waterworks Park has been accessible to hundreds of park visitors over the past several years and has remained in great condition. Adding another bike path sign educating about salt application and its risks was decided as the first step but not the last. An educational sign is a good way to provide information to the public but it is equally or more important to actively involve the public and enable them to take action.

Continued on next page.

What is the Groudwater Consortium?

The Hamilton to New Baltimore Groundwater Consortium consists of seven independent public and industrial water suppliers in southern Butler and northern Hamilton Counties, Ohio.

Combined, Consortium Members produce over 61 million gallons of groundwater per day for public and industrial water needs in most of Butler County, southern portions of Preble County, and northern portions of Hamilton County Ohio. The Consortium members pump groundwater from the Great Miami Buried Valley Aquifer (GMBVA). This groundwater resource is sensitive because it is an unconfined sand and gravel aquifer. To keep this water resource safe the Consortium implements a regional Source Water Protection Program.

A portion of this progeam involves education and outreach, and involves activities such asthe Children's Water Festival, 5K Race for Global Water, Great Miami River Clean up, in partnership with Butler Soil and Water Conservation District.

New in the World of EE!

Meet Abby Ditomassi, ODNR Division of Wildlife, Wildlife Education Coordinator

Abby was promoted from the Wildlife Communications Specialist position in District Two. Abby previously worked for the Crawford Park District as a Naturalist and held seasonal positions with the Preservation Parks of Delaware County, The Columbus Zoo, The Wilds, and COSI. She graduated in 2016 with a B.S. in Zoology and a minor in Society and Environmental Problems from The Ohio State University.

As the Wildlife Education Coordinator, Abby will step in as the state Project WILD Coordinator, leading Project WILD workshops and facilitator trainings and managing the Project WILD volunteer facilitator network, managing the WILD School Sites network and the Wildlife Education grants, staffing resource tables at statewide conferences, and developing education materials. She will also be supervising the Outreach Coordinator position.

Abby currently resides in Columbus with her husband Joe, 4 year old son, Vincenzo, and a March 2024 baby on the way. She also owns two cats, a western hognose snake, and an axolotl. In her free time, she enjoys "herping" which is looking for reptiles and amphibians while hiking with her family.

Salt Watch Continued

The educational sign will go into detail what salinization is, what the general causes are, and how to take action to protect source water here locally.

Salt Watch Testing Kits: Izaak Walton League of America has a salt watch program that provides salt watch test kits with 4 chloride testing strips. These strips are used to test chloride levels in waterways and the results can be submitted online to be added to a national database.

Salt Measuring Cups: The City of Greater Sudbury began issuing free plastic cups to residents as a way to educate their community on how much road salt should be used. Each 12 oz cup has printed on the front that it can contain enough salt to cover 10 sidewalk squares or 500 square feet. Using the cups, residents can measure the amount of salt used instead of over-applying. This seemed like such as great idea, we intend to do the same in our area. Homeowners in the residential community near Waterworks Park will be made aware via letter, of the newly placed educational sign at Waterworks Park and will ask if they are interested in receiving more information and participating in a salt watch project. For those who say yes, they will be sent the cup to measure salt and the salt testing kit.

Find out more at *https://gwconsortium.org/.*

EPA Seeks Applications for 2024 President's Environmental Student and Teacher Awards

U.S. Environmental Protection Agency (EPA) Administrator Michael S. Regan recently announced that EPA's Office of Environmental Education is requesting applications for the 2024 President's Environmental Youth Awards (PEYA)and Presidential Innovation Awards for Environmental Educators (PIAEE). The 1990 National Environmental Education Act established PEYA, which recognizes outstanding environmental stewardship projects from students in Grades K–12 that promote environmental awareness and encourage community involvement. The act also established PIAEE, which recognizes outstanding Grade K–12 educators who integrate environmental education and place-based learning into school curricula and school facility management across the country.

Applications are due no later than Monday, January 15, 2024. Projects eligible for the awards can apply to a variety of environmental topics, including (butnot limited to):

- Climate change
- Environmental justice
- Water infrastructure
- Lead in drinking water
- A reduction in contributions to ocean and marine litter
- Recycling solutions
- The use of science, technology, engineering, and math (STEM) to teach environmental education
- Environmental sustainability and agricultural practices
- Healthy school environments
- The reduction of food waste and loss and excess food recovery efforts.

Additional Information on the 2024 Awards, such as how to apply, judging criteria, and past winners can be found at *https://www.epa.gov/education/presidents-environmental-youth-award.*

Free Webinar

Testing Waters and Fish for Pharmaceuticals and PFAS Contamination On-Site

November 29, 2023, 12 p.m. - 12:30 p.m.

Pharmaceuticals and per- and polyfluoroalkyl substances (PFAS) are a growing concern for water quality management,as their presence is increasing while most water treatment plants can't completely remove them from their water output. Fish exposed to contaminated water can take up these chemicals, which are a concern to human health when ingested. Accurate methods forthe detection of these pollutants in waters and fish are needed.

Dr. Emanuela Gionfriddo and a team of researchers from The University of Toledo are developing microextraction protocols that will provide a fast, reliable screening and quantitative approach for the analysis of pharmaceutical and PFAS in fish and environmentalwaters. Their techniques would enable on-site sampling as well as allow for identification of both targeted and new organic compounds.

Register for free at *https://tinyurl.com/PFASandFish*

DriveOhio's New Educator Toolkit

Interested in teaching your students about self-driving cars and package delivery drones? Drive Ohio's new educator toolkit has K-12 activities by grade band and information on grants, teacher professional development, and directing students toward careers in new smart mobility solutions.

https://drive.ohio.gov/workforce/educator-toolkit

Smart City Adventure

includes topics like:

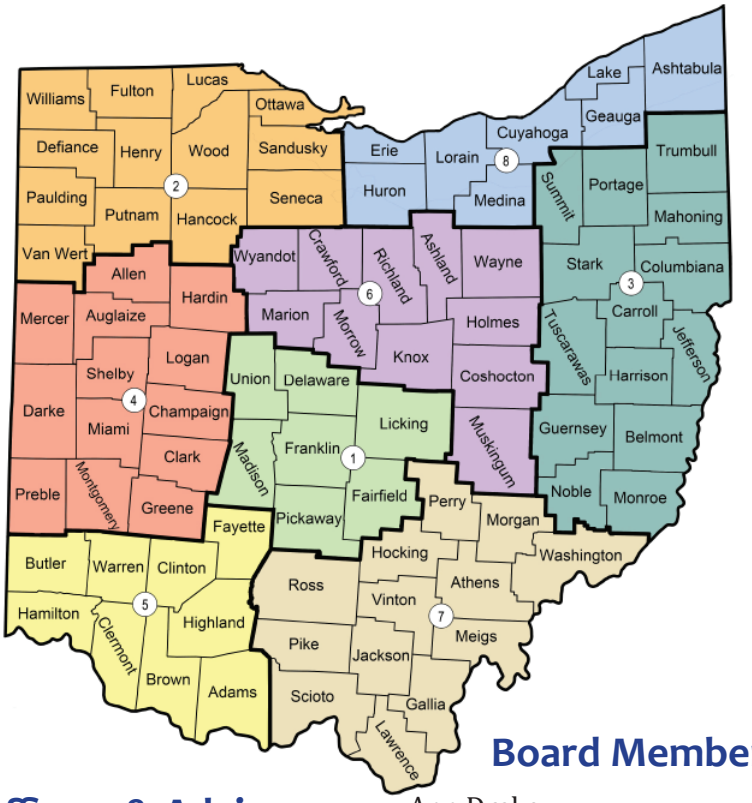
- EV charging stations
- Smart Mobility Hubs
- Vertiports
- Connected Intersections
- Package delivery robots.

https://drive.ohio.gov/wps/wcm/connect/gov/b6f4425d-f3d9-4ac4-a50a-4ba3794e7ecc/DriveOhio+Curriculum+-+Smart+City+Adventure.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JO00QO9DDDDM3000-b6f4425d-f3d9-4ac4-a50a-4ba3794e7ecc-oFCPs8B

EECO
Environmental Education Council of Ohio

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, adivisors, and board members to find out more about becoming a part of EECO.



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