

E E C O

Environmental Education Council Of Ohio

Vernal Pools: Nature's Littlest Nurseries

By Jen Dennison, ODNR: Division of Wildlife

Vernal pools are one of the most imperiled types of habitat in the state. To the average person, these spring woodland wet spots might look like just a large puddle after a spring rain. But to those of us that know and love vernal pools, these wonderful little wetlands hold the key to the continued diversity of Ohio's forests and scrublands.

Vernal pools are the primary breeding grounds for many of Ohio's salamanders. They include the rare Four-toed salamander, the beautiful Blue-spotted salamander, and are the destination for the massive migrations of Spotted salamanders seen on most any warm, rainy night in late February through April. One can also find Spring peepers, wood frogs, Fowler's toads, and other species of frogs and toads flocking to these wet areas to breed and lay their eggs.

Amphibians prefer vernal pools because there are no fish in them to eat their eggs. But that doesn't mean that there aren't other predators around. Water snakes, garter snakes, and ribbon snakes will often haunt these pools for a quick meal in the spring. Blanding's and spotted turtles can often be seen sunning on the wood debris found in a vernal pool. They will eat the tadpoles and smaller species of frogs if given the chance.

Fairy shrimp are the hallmark invertebrate of vernal pools. Their ability to survive the extreme conditions in temperature and water levels of a vernal pool are truly remarkable. They can live out their entire lifecycle in as little as 16 days, while their embryonic cysts can survive inside the digestive tract of animals and can be blown around by wind to find homes and develop in other wet areas. Once conditions are right, they develop into the adults and the cycle starts all over again.

Exploration of these unique habitats is encouraged, but care should be taken not to "love them to death." This means that occasional visits to monitor populations can be tolerated each spring, but it's best to explore the edges and not traipse through the middle of pools. Be sure to clean your equipment and shoes very well before and after exploring these fragile areas so as not to introduce pathogens and chemicals to the water and the inhabitants.



For more information about Ohio's Vernal Pools, see page 4 and visit the Ohio Environmental Council's website to find field guides, exploration protocols, and how to become a vernal pool monitor www.theoec.org/VernalPools

Also see www.vernalpool.org for more information about vernal pools.

Issue Focus:
**.. Vernal
Pools &
Wetlands
Spring 2013**

46th Annual Conference April 11-14, 2013 Mohican State Park

Discover the many facets of environmental education, from traditional outdoor education and field studies, to the integration of STEM and mobile technology, and focus on sustainability.

Strands are:

- Discoveries
- Responsibilities
- Traditions
- Technologies

Thursday- Forum: The Economy of Local Foods

Friday- Field trips, workshops & Keynote from Steve McKee

Saturday- Concurrent Sessions and Keynotes with Herb Broda & Bill Dawson

Sunday- Field trips

Find out full details and register at www.eeco-online.org

Forum – The Economy of Local Foods

Ashland University

April 11, 2013 9:00 am – 4:00 pm
Cost: \$40 includes lunch, all forum sessions, & morning refreshments.

Approved by the Ohio State Board of Sanitarian Registration

The EECO 2013 Annual Conference is currently approved for up to 18 contact hours.

Ohio Environmental Education Fund



OEEF grant guidelines and funding priorities have undergone substantial revision. Please read the guidelines carefully before beginning an application. The requests for OEEF general grant and mini grant proposals are now open in the eBusiness Center. The Letter of Intent to Apply must be submitted no later than 5:00 p.m. on March 26, 2013 and applications must be completed and submitted by 5:00 p.m. on April 2, 2013.



The Ohio Environmental Education Fund grant program is administered by Ohio EPA and awards general grants of up to \$50,000 and mini-grants between \$500 and \$5,000. The grants are funded by half of the civil penalties OEPA collects for air and water pollution control violations. Eligible recipients include environmental groups, public and private schools, colleges, local governments, among others.

Ohio EPA also invites public comment on the OEEF's funding priorities for the coming state fiscal year. The OEEF Annual Agenda is posted at <http://www.epa.ohio.gov/oeef> and comments may be submitted by email to oeef@epa.state.oh.us, mail to Ohio EPA Office of Environmental Education, PO Box 1049, Columbus, OH 43216-1049, or in person at a public hearing on March 26th at 10:30 a.m. at Ohio EPA headquarters, 50 W. Town Street, Suite 700, Columbus, OH 43215, in conference room A. Comments may be submitted and will be considered at any time, but only those received by 5:00 p.m. on March 28, 2013 can be included in the official record.

The Annual Agenda includes continuation of the partnership between EECO and Ohio EPA's Office of Environmental Education, now entering its nineteenth year. This year we welcome a new partner, the Ohio State University School of Environment and Natural Resources, and a new initiative linking environmental scientists and engineers with high schools and career centers to help students explore careers in these fields. More about this in the next issue!

For more information, please contact the Ohio EPA Office of Environmental Education

Phone: 614-644-2873

Email: oeef@epa.state.oh.us

Web: www.epa.ohio.gov/oeef

The Cincinnati Zoo's 24 Acre Wetland Reclamation Project!

By Fia Cifuentes, Sustainability Coordinator, Cincinnati Zoo & Botanical Garden

The Cincinnati Zoo has been dedicated to sustainability not only on-grounds within its Avondale location, but at its properties as well. In 1995, a 529-acre farm in Warren County called Bowyer Farm was willed to the Cincinnati Zoo & Botanical Garden with the guideline that it could never be developed unless it is to further the mission of the Zoo. The property has grown to 600+ acres, and is connecting with the Zoo's mission of Adventure, Conservation, Education and Community in various ways. It has become EcOhio, a project that encompasses local food, sustainable farming, land stewardship and wildlife.

Part of the farm is 24-acres of land that was once a natural wetland. Overtime, this portion of land has been used as farmland producing soybeans and corn. Through support and funding from the U.S. Department of Agriculture, the Zoo is now able to take that 24 acres and reclaim it as its original state of a wet sedge meadow, or wetland, eventually returning the floral and faunal diversity that once was there. To date, it is the largest wetland reclamation project funded by the Conservation Reserve Program (CRP).

To get started, we conducted a tile search as well as completed dike work and excavation during the summer of 2012. A "bioblitz" was organized to establish a baseline for current species residing in the area, and determine what species could be attracted to return. During the winter of 2012-2013, bird boxes are being built by an Eagle Scout and vernal pools are being constructed. In the spring of 2013, tree plantings and warm season grass seeding will occur. Establishment of the prairie buffer may take up to 3-4 years, allowing time for these perennial plants to root themselves and grow against the annual weeds.

Long term, the possibilities are endless. The main goal is to return this area to its original state, bringing back its wildlife, with a rich array of plant and animal species that historically occurred in Warren County. Some of these species include, but are not

limited to, upland passerines, bobwhite quail, tree swallows, bluebirds, prothonotary warblers, American kestrels, purple martins, screech owls, saw whet owls, various waterfowl, snakes, salamanders and butterflies.. Eventually, as the wetlands become established, walking trails and an education center may be implemented, along with special events that offer educational programs and demonstrations, give aways, opportunities to explore the wetland, and much more. Ideally, EcOhio will become a green oasis in a sea of suburbia.

Anyone wishing to volunteer for the EcOhio Wetland project, please contact Brian Jorg at brian.jorg@cincinnati-zoo.org. Please include any special abilities, such as planting/gardening, birding, carpentry (able to construct bird boxes), etc.



Photo: Brian Jorg, Cincinnati Zoo

Floating Treatment Wetlands

by Amy Cameron, Butler Soil and Water Conservation District

Any aquatic ecosystem, whether wetlands, rivers, or even the ocean, can be negatively affected by excess nutrients. These nutrients can be picked up when water comes into contact with potential pollutants such as fertilizers and animal waste. These nutrients, such as nitrogen (N) and phosphorus (P), can lead to an algal bloom. As this short-lived algae dies, it results in a high concentration of dead organic matter which starts to decay. The decay process consumes dissolved oxygen in the water. Without sufficient dissolved oxygen in the water, animals and plants may die off in large numbers.

Aquatic vegetation aids in the removal of nutrients from water, helping to create a balance in nutrient levels. In ponds, most aquatic vegetation growth is located on the bank, which limits the nutrient uptake to that part of the water body. By creating a structure, such as a floating treatment wetland (FTW), aquatic plants can be spread across the surface of the pond, increasing possible nutrient uptake.

FTW's consist of a buoyant structure, or raft, which supports perennial wetland plants. Unlike in a traditional wetland, the plants will not take root in the soil. The roots remain suspended in the water column allowing the plants to adjust to any fluctuations in water level without harming the plants. Even though aquatic plants that naturally grow on the banks take up nutrients, the amount of N and P uptake is limited. Due to the placement of the FTW toward the center of the water body, an increase in nutrient uptake can be achieved.



Root structure

In southwestern Ohio, Butler Soil and Water Conservation District (SWCD) is partnering with Miami University, a doctoral student at the University of Cincinnati, Grassroots Ecological Design LLC., and Yellow Springs Instruments to implement a FTW project. These partnerships between government, business, and education provide a great avenue for research as well as student involvement. Throughout the duration of the project, Butler SWCD staff and Miami University professors will be collecting and analyzing water samples from the FTW water bodies. Research during this project is very important to determine if FTWs can be used as a viable best management practice (BMP) for the treatment of water bodies. By partnering with local universities, the project will be readily accessible to researchers in order to determine the effectiveness of FTWs as a water quality BMP.



Launching the floating wetland at Twin Creek Preserve in Sharonville

Butler SWCD will be hosting workshops for interested land stewards during the summer of 2013. These workshops will provide information on the benefits, construction, and maintenance of FTWs. Please continue to check our website, www.butlerswcd.org, for further information on the dates and times of these workshops.

You can also find out more about floating treatment wetlands at www.ButlerSWCD.org and see research at www.clemson.edu/extension/horticulture/nursery/remediation_technology/floating_wetlands/

Summer Workshop for MS & HS Teachers *Watersheds & Computer Modeling of the Hydrologic Cycle*

Are you a middle or high school science or mathematics teacher who wants to...

- learn about the movement of water through soils and watersheds?
- understand how mathematics and science content can support one another?
- experience inquiry instruction within the Earth sciences?
- see how computer models are used to understand and represent complex situations?
- realize how knowledge in the Earth science applies to everyday decisions made by citizens and landowners?

Dates: Summer Session – 9 am to 4 pm July 8-12 with a half day on July 13 at a watershed site; Follow Up Sessions – TBA

Location: The Ohio State University Columbus Campus

Apply Online: http://bprc.osu.edu/education/courses/workshop_2013_water/

Deadline: April 1, 2013

Participating teachers will be expected to attend all five and a half days, attend two followup sessions during the school year, implement science lessons (where appropriate) in their classrooms, and participate fully in activities and discussions. Teachers will be exposed to rigorous science content and interact with scientists and engineers. CEUs will be available. Teachers will be compensated \$100 for completion of the summer session and \$100 for participation in the follow up activities.

Understanding Vernal Pools

By *Samantha Catella, Geauga SWCD*

Though winter has declared her reign, it will only be a few more weeks until these silent, dormant spaces tucked away on the forest floor will awaken to announce that spring has arrived! Melted snow, spring rains, and leaf litter will fill these once barren depressions. Hundreds of amphibians will emerge and migrate to them to secretly breed in the night. Algae, bacteria, and thousands of organisms will gather here, weaving a lush and complex web of life. Somewhere just beyond our back doorsteps exist these mysterious and magical vernal pools!



Formed from indentations left by the glaciers, vernal pools are small, shallow pools of water. Most pools in Ohio are located either within woodlands or adjacent to them. Also known as temporary ponds, ephemeral ponds, or seasonal pools, vernal pools can be distinguished from rainwater puddles because they remain inundated longer, usually more than a couple of months. Unlike ponds and lakes, the water in a vernal pool will eventually dry up.

Vernal Pool Hydrology

The hydrology of vernal pools (i.e., the source of water, change in water levels, and timing and duration of flooding) varies greatly. Some vernal pools fill with water in the spring and gradually dry up during the summer, while others might be fed periodically throughout the year by the upwelling of groundwater or by small springs. However, the most defining feature of a vernal pool is that they must fill with water seasonally and then dry up annually or every few years.

Adaptations to a Vernal Pool's Hydrology

Since water is not a permanent feature in vernal pools, the aquatic inhabitants must be able to adapt to temporary inundation and drawdown (i.e., lowering of the water). Both flooding and the start of drawdown can serve as cues that trigger developmental changes in animals. For example, the shallower the pool gets, the warmer the water becomes. This is important to species which rely on thermal cues to hatch from eggs or to continue metamorphosis. Flexible life history strategies are imperative for survival in vernal pools due to the unpredictability of water.



Predator Prevention

The filling and drying of vernal pools accommodates the life cycle changes of some species of frogs, salamanders, and bugs. For example, most critters will be able to complete their life cycles in a vernal pool, unlike in a rainwater puddle, because the pools will retain water for months rather than days. At the same time, seasonal drying prevents fish from inhabiting vernal pools. Fish are a prime aquatic predator and they eat nearly everything. Many amphibians would normally have a hard time maintaining a local population if their young were being picked off by hungry fish. Similarly bullfrogs, also hungry predators, will not normally use vernal pools since their tadpoles need to overwinter in water for one or two years before becoming adults. Being abundant in food and void of these predators, vernal pools are essential breeding grounds and safe habitats for salamanders, frogs, and macroinvertebrates.

Protecting Vernal Pools

Ohio has lost 90% of its original wetlands and a large percentage of these were vernal pools. The crucial role vernal pools play in the success of many species makes their potential for conservation and environmental stewardship significant. The habitat variability exhibited from pool to pool, as well as the great diversity of species that use them, make vernal pools an indispensable ecological link within the network of surrounding woods, lakes, ponds, and wetlands. In Geauga County, the Soil and Water Conservation District (SWCD) has taken on the responsibility of monitoring and maintaining a complex of vernal pools created at the Pope Home site, a mitigation area owned by the Geauga Board of County Commissioners. As part of the mitigation banking effort undertaken by the County, the Pope Home site is available to offset the effects of development within the Cuyahoga River Watershed. In other words, when a developer is given permission to fill in or impact a wetland by the Army Corps of Engineers, they may have to pay for that right by purchasing credits at a mitigation site, such as the Pope Home site.

The vernal pools at the Pope Home site are considered high quality wetlands, due in part to the presence of breeding wood frogs in the pools. Also present in the vernal pools are a diverse array of aquatic insects like water beetles, dragonflies, and caddisflies who help break down leaf litter and serve as a vital part of the food chain.



By summer's end, when the glorious frog chorus becomes a soft woodland whisper, these secretive places called vernal pools will once again start to vanish.

Now, grab your flashlights and boots... the amphibians are about to return!

Photos: Vernal Pool and Wood Frog by Colleen Sharp, Geauga SWCD and the Wood Duck by Brian Jorg, Cincinnati Zoo

Life on a Sandy Delta

June 9 – 15, 2013 at BBBS Camp Oty'Okwa



Join us as we spend the week experiencing the natural history of Ohio at Camp Oty'Okwa. The 700 acre camp is under conservation easement and includes a dedicated state nature preserve, beautiful woodlands, hiking trails, and wonderful rock outcrops. Participants will be encouraged to broaden their knowledge and learn techniques that will help them improve their skills as an educator.

The delicate balance of people, natural resource use, and technological advances is at the heart of many local, national, and global news stories. Throughout the week, participants will explore hands-on best practice strategies for introducing people to the natural world and these issues. Using their professional expertise and experience, top naturalists and educators from around the state will facilitate sessions using the camp and local resources. Sessions will provide opportunities to gain an understanding of topics related to state standards by immersing the participants in a natural setting and a stimulating learning environment.

Credit: Participants can earn up to 3 semester hours of graduate credit or 50+ contact hours.

Cost: Workshop fee for all participants (50 contact hours, lodging, meals, sessions, and materials): \$400
Additional fee for graduate credit (3 semester hours): \$525.00 fee to Ashland University
(2 semester hours): \$350.00 fee to Ashland University

To register: Visit www.eeco-online.org for the registration form

Trailfest

The Buckeye Trail Association's 2nd Annual Buckeye TrailFest, April 25-28, 2013 will be held at Red Oak Camp in Kirtland, OH. Buckeye TrailFest is a long weekend packed full of hikes, workshops, speakers and social opportunities celebrating Ohio's Buckeye Trail. It's the largest fun filled trail gathering of hikers, volunteers and outdoor enthusiasts from all over Ohio! Check out buckeyetrailfest.org for more details.

The Importance of Getting Kids Outside

Classes and Workshops to Encourage and Support Nature Play for Young Children

The Holden Arboretum and Cleveland Botanical Garden are collaborating to offer a series of lectures, workshops and classes. These offerings are for parents, teachers, informal educators and anyone else who has an interest in young children. They are designed to inspire, educate and give first hand experiences about the importance of nature play and how to encourage it and plan for it.

Registration is required for all events. To register, or to find out more information, visit holdenarb.org/home/NaturePlayandEarlyChildhoodPrograms.asp

Go Outside and Play! — Why Our Parents Had it Right: Lecture for parents and educators

Thursday, April 18, 7pm, The Andrews Osborne Academy, Willoughby, Ohio
Free event, but registration is required.

Creating a Nature Play Space: Big or Small: Workshop for parents and educators
Friday, April 19, 8:30am - 3pm, The Holden Arboretum, Kirtland, Ohio
Cost \$30

The Science of Play Based Education: Symposium and Workshop
Friday, May 17, 9am – 4:30pm, Cleveland Botanical Garden, Cleveland, Ohio
The morning symposium is free and open to the public (registration is required, parking not included. Full-day participation (registration required - includes lunch, parking and educational materials) is \$35 for members, \$42 nonmembers.

Learn How to Play in Nature: Hands-on activity sessions for educators and parents
9am – noon
\$15 members, \$20 nonmembers per session

Play on Land – Friday, June 28 or Saturday, June 29 - Holden
Play in Water – Friday, July 26 or Saturday, July 27 - Holden
Play in the Garden – Friday, Aug. 9 or Saturday, Aug. 10 - CBG



Greening Your Cleaning To Protect Our Water!

By Fia Cifuentes, Sustainability Coordinator, Cincinnati Zoo & Botanical Garden

Spring, with its welcoming warm air and shining sun, is traditionally a great time to throw open the windows and let your house air out. Most homeowners take the opportunity to scrub the house from head to toe. While spring cleaning is a great way to make our homes shine, it could also have an effect on our watersheds, including wetlands. Every time you clean and rinse suds down the drain, that product could potentially have a harmful effect on water quality, and the environment in general.

Let's look at a few ingredients, shall we?

- **Phosphates**, found in dishwasher and laundry detergents, cause algae bloom, which kills fish and aquatic plants, and produces chemicals that are toxic to animals and people who drink the water.
- **Trisodium nitrilotriacetate** is a possible carcinogen in laundry detergents. It can disrupt the elimination of metals in wastewater treatment facilities.
- **Chlorine bleach (sodium hypochlorite)**, available alone and in detergents and other products, is toxic to fish and can bind with organic compounds in water to form organochlorines, which break down slowly in the environment and accumulate in the fatty tissues of wildlife. Chlorine is especially toxic to organisms that live in water and soil.
- **Naphthas and mineral spirits**, found in furniture polishes, are neurotoxins and considered hazardous waste. Mineral spirits break down very slowly and contaminate air and water.
- **Formaldehyde**, an ingredient in furniture polish and various cleaning products, is a potential human carcinogen and a known cancer-causing agent in animals.
- **Phthalates**, found in furniture polish, disrupt hormone function and can cause genetic defects in both animals and humans.
- **Ether-type solvents**, methylene chloride, butyl cellosive, and petroleum distillates, found in oven cleaners are hazardous waste and can contaminate the air, water, and soil.
- **Sulfuric acid and sodium hydroxide**, in drain cleaners, can change the pH of water and cause fish kills.

Ingredients sourced from <http://www.charityguide.org/volunteer/fifteen/natural-cleaning-products.htm>

Rather than sending these disrupting chemicals down the drain and into our watersheds, wetlands, rivers and lakes, consider making your own products using healthy, natural ingredients.

- **Baking soda** – great deodorizer; can be used to scrub surfaces like most commercial abrasive cleaners can
- **Lemon** – dissolves soap scum and hard water deposits; cleans and shines brass and copper
- **White vinegar** – safe on most surfaces; naturally cuts grease, removes mildew, odors, some stains and wax buildup
- **Isopropyl Alcohol** – provides the base for an evaporating cleaner to rival commercial window and glass cleaning solutions

Don't have the time to make your own? Invest in products made from natural ingredients such as cleaners from Seventh Generation®, Green Works®, Mrs. Meyers®, Method®, and more. Whatever you do to make your home sparkle and shine this spring, consider how your cleaning will affect the environment.

All Purpose Cleansers

- Mix in a spray bottle 1 cup white vinegar and 1 cup water.
- OR, mix ½ cup vinegar and ¼ cup baking soda into ½ gallon (2 liters) of water
- Use for removal of water deposit stains on shower stall panels, bathroom chrome fixtures, windows, bathroom mirrors, etc.

Furniture Polish

- Mix 1 cup olive oil and ½ cup lemon juice.
- Shake well and apply a small amount of a flannel cleaning rag or cloth.
- Spread evenly over furniture surface. Turn cloth to a dry side and polish dry.

Glass Cleaner

- Mix 1 cup rubbing alcohol, 1 cup water and 1 Tbsp white vinegar

Toilet Bowl Cleanser

- NEVER add vinegar to the toilet bowl if you are using a bleach tab or some other bleach product that is released when you flush
- Pour straight white vinegar into the toilet bowl and leave it to soak for a half hour.
- Then scrub clean as you would with a commercial cleanser

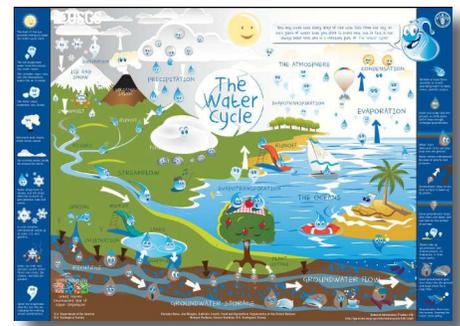
Drain Cleanser

- Put a whole lemon peel or orange peel through the garbage disposal. It refreshes the drain and the kitchen.
- Pour ½ cup of baking soda down the drain followed by 1 cup of white vinegar (slowly). Stop adding vinegar when fizzing ends.
- Rinse it down with hot tap water, allowing it to flow down the drain for a couple of minutes.

The Water Cycle for Kids

The U.S. Geological Survey (USGS) and the Food and Agriculture Organization of the United Nations (FAO) have teamed up to create a water-cycle diagram for kids and elementary and middle schools. It is also available in Spanish and a number of other languages.

<http://ga.water.usgs.gov/edu/watercycle-kids.html>



Project Learning Tree GreenSchools! Webinars

Project Learning Tree is proud to be a part of the U.S. Department of Education 2013 Green Strides Webinar Series in conjunction with our national partner, the U.S. Forest Service. The Green Strides Webinar Series provides school communities the tools to reduce their schools' environmental impact and costs; improve health and wellness; and teach effective environmental education.

Last year many of you participated in PLT's first GreenSchools! webinar series, which engaged over 800 participants. This year we are building on that success to explore a wider range of compelling and timely topics. Five new webinars will be anchored by dynamic PLT student Green Teams from across the nation, along with education and environmental professionals.

Students and/or teachers can register now to ensure your space in one or more of these informative and inspirational GreenSchools! professional development sessions.



Green Jobs and Careers in Natural Resources

Wednesday, April 10, 4:00-5:00pm EDT

Green jobs and clean energy careers have been growing at a phenomenal pace and analysts project the trend will continue. Join conservation education professionals along with Green Team students who aspire to embrace green jobs as a career pursuit. They will share how greening their schools is helping prepare students for college and careers.

Register at: <https://cc.readytalk.com/cc/s/registrations/new?cid=4a0b708okcxn>

GreenSchools! and STEM

Wednesday, April 24, 4:00-5:00pm EDT

This webinar will demonstrate how STEM (Science, Technology, Engineering, and Math) can be seamlessly integrated into the school curriculum using PLT's GreenSchools! Investigations and grant program as a model for schools.

Register at: <https://cc.readytalk.com/cc/s/registrations/new?cid=rviemzxxjxrc>

Bringing Climate Change Home

Wednesday, May 1, 4:00-5:00pm EDT

Discover an interactive atlas where students can learn about climate change using computer modeling, plus a new interactive online resource, ClimateChangeLIVE, helps answer the question, "What does climate change mean to me?"

Register at: <https://cc.readytalk.com/cc/s/registrations/new?cid=9l7dmyyr1doa>

Authentic Student Voice and Leadership in GreenSchools!

Wednesday, May 29, 4:00-5:00pm EDT

Student voice is the individual and collective perspective and actions of young people within the context of learning and education. This webinar will feature dynamic Green Team student leaders who will share compelling and personal testimonials about the transformative power of student leadership in the Green Schools movement.

Register at: <https://cc.readytalk.com/cc/s/registrations/new?cid=e9q0ge610gkf>

What Can We Learn from Schoolyard Trees?

Wednesday, October 16, 4:00-5:00pm EDT

Students will discuss how they used PLT's GreenSchools! School Site Investigation to critically assess their school yards, and what they have done to improve them. The Smithsonian Museum and Casey Trees Foundation will share tools and resources, for example, how to calculate the "real" value of a tree's services, such as energy savings, clean water and air, and carbon sequestration.

Register at: <https://cc.readytalk.com/cc/s/registrations/new?cid=3gjxi3z3956g>

For more information, contact James McGirt at jmcgirt@plt.org or 202-463-2728.

To find out more about the Green Schools Program you can visit <http://www.plt.org/greenschools>.



Environmental Education Council of Ohio

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Ohio EPA- EECO Partnership

Regional Priorities

- Region 1: urban/multicultural, language arts
- Region 2: high school, environmental careers
- Region 3: social studies, environmental careers
- Region 4: urban/multicultural, environmental careers
- Region 5: pre-service teachers
- Region 6: language arts
- Region 7: adult education
- Region 8: urban/multicultural, environmental careers
- Region 9: pre-service teachers, high school
- Region 10: high school, environmental careers
- Region 11: adult education, environmental careers
- Region 12: early childhood, urban/multicultural

Get in Touch

Contact information for your area's regional director can be found above and online at

www.eeco-online.org

