

Runoff and Filter Strips

By Heather Lauer, Southeastern Ohio, Ohio EPA

In Ohio, silt is the most common form of pollution in rivers and lakes. Soil running off the land causes the bottoms of waterways to become blanketed with sediment. If the sediment gets too thick, it can smother the tiny creatures at the bottom of the food chain.



Scioto River and the Ohio River mixing zone at Portsmouth, Ohio

Soil particles get picked up by rain water and snow melt as they run downhill toward rivers. Once in the stream, the heavier soil drops to the bed onto rocks, mollusks and macroinvertebrates.

While some soil brings with it nutrients that are valuable to the stream, too much creates problems. People contribute to soil runoff and sedimentation when they remove plants from the soil and expose soil to the elements.

Soil exposed to the elements allows for increased runoff from uncovered areas.

Farmers and developers have industry-specific best management practices that help keep soil on their work sites. In addition, vegetation along waterways can

help trap excess mud and stop trapped dirt particles from reaching streams.

The riparian zone along stream banks is an area whose condition immediately affects that of the water that flows through it. Allowing trees, bushes and grasses to grow along stream banks, wider areas for larger streams, also helps filter water running off the land. In addition, trees and bushes that shade the water help keep it cool and provide a better home for the creatures that live in the stream.

Have you seen what looks like grass in a lower area of a farm field? That's a grassed waterway. These areas are intermittently wet and allow plants to trap or slow water that has flowed over farm fields.

To explore this topic with students, check out "Sum of the Parts" in, Project WET (p. 283), or "Turbidity or Not Turbidity" in Healthy Water, Healthy People (p. 83). Find out about upcoming workshop at www.epa.ohio.gov/calendar/oe.aspx



Save the Date

Find out more at
www.eeco-online.org

OEEF Grant

Letter of Intent due early Jan, 2017
Grant Due Mid- Jan, 2017

<http://epa.ohio.gov/oe/EnvironmentalEducation.aspx>

Wetlands Summit!

"Life on the Edge: Where Humans Meet Wetlands"

September 10, Richfield, Ohio

www.ohwetlands.org/wetlands-summit.html

Grant Writing 101/102

October 12, ODNR, Wildlife District 1, Columbus, Ohio 43215.

<http://epa.ohio.gov/oe/EnvironmentalEducation.aspx>

The 101 Alternatives to Chalkboard Conference

October 7-9 Camp Kern

See inside for details

Teachers, Industry and Environment (TIE) Conference

October 12-14, Columbus, Ohio

See inside for more details

Inquiry-Based Environmental Ed Conference

November 1-3, Burr Oak State Park

See page 3 inside

Project WET and Wonders of Wetlands

Nov 5, 2016, Cincinnati, OH

www.epa.ohio.gov/calendar/oe.aspx

2016 Hands on the Land Mini-Grants Program



Hands
on the
Land

The National Environmental Education Foundation (NEEF) in partnership with Partners in Resource Education (PRE) just released a request for proposals (RFP). Through this RFP, a total of \$90,000 in mini-grants will be awarded to Hands on the Land (HOL) sites to support their efforts in delivering place-based environmental education and STEM programming that is aligned with national K-12 education standards.

HOL sites are public land sites (think outdoor classrooms) with a school partnership involving sustained K-12 education programming that meets the site's need and the school partner's curriculum needs; other partners may be involved.

Funds are available to HOL member sites and public land sites that become HOL members in time for the grant application deadline

Funding support for these grants comes from the Environmental Protection Agency (EPA) and NEEF.

Application Deadline: 11:59pm CT Thursday, October 13, 2016. All applications must be submitted through NEEF's online grants management system.

Webinar: NEEF will be hosting a webinar on August 30th at 2pm EST to answer any questions about the grant, including the application process and eligibility. Please [register for the webinar here](#).

Please review the RFP for more information. You will find that the application and timeline have been streamlined in order to ensure that grantees will have their awards early enough to plan and implement activities (November 2016 through July 2017). If you have any questions about the process, please contact us at grantsadmin@neefusa.org or 202-261-6468.

www.handsontheland.org/data/documents/HOL_2016_mini_grant_RFP.pdf

101 Alternatives to Chalkboard Conference

Saturday, October 8, 2016
At YMCA Camp Kern

The "101" Conference is THE weekend outdoor education experience designed to inspire teachers and outdoor educators with creative ways to provide exciting learning experiences. Enjoy meaningful large and small group sessions, excellent company, and fine eating.

Location: At YMCA Camp Kern, 5291 St Rt 350 Oregonia, Ohio 45054
(32 miles northeast of Cincinnati)

Cost: \$30

Includes all sessions, programs, meals, and overnight accommodations. You have the option to stay on the Friday and/or Saturday nights.

Scholarships and discounts available

For more information, contact: Dave Moran

Outdoor Education Director

YMCA CAMP KERN

5291 St Rt 350 Oregonia, OH 45054

513-932-3756 x1527

dmoran@daytonymca.org

This event made possible by YMCA Camp Kern, the Environmental Education Council of Ohio, and the Ohio Environmental Education Fund



Milkweed Seed Pod Collection for Monarch Butterflies

*By Marci Lininger,
Biologist with the U.S. Fish and Wildlife Service*



Due to the drastic decline in the population of the Monarch butterfly, the Ohio Pollinator Habitat Initiative (OPHI) is seeking public involvement to collect and drop off common and swamp milkweed seed pods from established plants, Sept. 1 through Oct. 30 at collection stations around the state. The seeds will be used to establish new plantings and create additional habitat for the Monarch butterfly throughout Ohio in the coming years.

“Most Ohio counties have a Milkweed Pod Collection Station – most of them being located at the local Soil and Water Conservation District office,” said Lori Stevenson, Ohio Private Lands coordinator with the U.S. Fish and Wildlife Service. To find the location of your local SWCD office: <http://www.agri.ohio.gov/divs/SWC/SearchLocalSWCD.aspx> or for a list of participating Soil and Water Conservation Districts click [here](#).

“Common and swamp milkweed is essential to the survival of Monarch Butterflies in Ohio,” said Marci Lininger, biologist with the U.S. Fish and Wildlife Service. “Ohio is a priority area for Monarchs. This generation of Monarchs are also responsible for starting the life cycle all over again in the spring, and laying the following year’s first generation of Monarchs in late summer”.

Seed pods from common or swamp milkweed should be collected when the pods are dry and gray or brown in color. If the center seam pops with gentle pressure, they can be picked. It is best to collect pods into paper bags or paper grocery sacks. Avoid using plastic bags because they can attract moisture and allow mold to develop. Store seeds in a cool, dry area until you can deliver them to Butler SWCD. It is recommended to wear disposable gloves when picking and handling pods. Harvesting seed pods from milkweed plants will not have any effect on the population of milkweed in established areas.

OPHI was formed in response to the 2014 petition to list the Monarch butterfly as federally endangered. Its partners include state of Ohio agencies, universities, corporations, and non-profit organizations.



OPHI’s mission is to inform citizens, landowners, farmers, and government agencies of the importance of pollinators and the habitat they need to survive. Members of the initiative are a core group of professionals that provide education, outreach, and technical assistance to all that have an interest in pollinators and protecting our food supply.

For more information on OPHI or the seed pod collection, contact OPHI at (614) 416-8993.

2016 Inquiry-Based Environmental Ed Conference

*November 1-3, 2016
Burr Oak State Park*

Rural Action and Camp Oty’Okwa are hosting the third annual Inquiry-Based Learning Conference. Our keynote speaker will be Herb Broda from Ashland University. The goals of this conference are to:

- 1) Model the integration of inquiry-based learning and environmental education into preK-12 classes;
- 2) Provide field-based experiences for teachers and non-formal educators to better inform inquiry-based learning and environmental education across the region;
- 3) Better connect Appalachian Ohio schools with environmental education providers careers related to sciences and the environment

In 2016 we plan to structure the conference as follows:

- November 1st will focus on hands-on inquiry lessons and presentations in 2-hour blocks;
- November 2nd will feature primarily field experiences in two 3-hour blocks with potential for full-day field trips;
- November 3rd will focus on round tables, interactive discussions, presentations, and hands-on activities focused on environmental issues and careers.

For more information, contact: Cathy Knoop, 740-603-3911, cathy.h.knoop@gmail.com

19772 Keifel Road, Laurelville, Ohio 43135

Ohio Environmental Education Fund



The OEEF grant program is administered by Ohio EPA and awards general grants up to \$50,000 and mini grants between \$500 and \$5,000, with application deadlines every January 15 and July 15. Grants are funded from civil penalties collected by Ohio EPA for violations of air and water pollution control laws. Eligible recipients include local governments, non-profit organizations, public and private schools.

The Request for Proposals for the July 2016 grant cycle is expected to be opened in early May in Ohio EPA's eBusiness Center, <https://ebiz.epa.ohio.gov/>.

Application information is available at <http://epa.ohio.gov/oeef/EnvironmentalEducation.aspx>.

Applicants are invited to contact the OEEF staff at oeef@epa.ohio.gov or 614-644-2873 to discuss project ideas.

Grant Writing Workshops

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

Grant Writing 101/102: Finding the Right Funder Writing a Winning Proposal

Wednesday, October 12, 2016, 9:30 AM - 3:30 PM, ODNR, Wildlife District 1, 1500 Dublin Road, Columbus, Ohio 43215.

- **Grant Writing 101: Finding the Right Funder** (format: half-day interactive workshop) 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** (format: half-day interactive workshop) How to avoid common mistakes applicants make, and develop realistic objectives, activities and budgets. OEEF will be referred to during this session.

If your organization would be interested in hosting a local workshop, please contact oeef@epa.ohio.gov.

Outstanding K-12 Projects

Periodically, the Ohio Environmental Education Fund (OEEF) contracts with EECO for independent evaluation of the success of completed grant projects targeting pre-school through university-level learners. Through the effort of Pat Barron, a team of formal and non-formal educators and representatives was assembled to select the best completed grant projects to honor with OEEF Outstanding Project Awards.

The team reviews current scholarship on adult learning, and publications such as EECO's Best Practices Guidelines for Environmental Education: Guidelines for Success, online at eeco.wildapricot.org/Resources/Documents/bestpractices.pdf, and the North American Association for Environmental Education's Guidelines for Excellence series, available online at <https://naaee.org/our-work/programs/naaee-publications>.

Because OEEF grant projects are quite diverse and grant products are often similar in format to portfolios, the team decided to use a holistic instrument for the grant evaluation process. For the pre-school through university audience, the team developed paragraph rubrics for three categories: curriculum development, student activity and professional development for K-12 educators. These instruments have been refined several times over the years as new award winners have been selected. A tool for website evaluation has also been added. The instruments and the award winners are posted at <http://epa.ohio.gov/oeef/EnvironmentalEducation.aspx#135377994-outstanding-projects>

Action for Children, "Nurturing Nature Through the Foods We Eat"

\$49,634, Audience: Pre-Kindergarten and Elementary, seven central Ohio counties

Contact: Gwen Moman, actionforchildren.org, (614) 224-0222, ext. 114

Afterschool-age educators were provided with standards-based professional development focused on environmental and agricultural education. The professional development program consisted of four major areas: a 10 hour curriculum module linking food and the environment; technical assistance to support implementation within the afterschool settings; field experiences bringing the educators, children and parents to environmental/agricultural education sites; and a statewide train the trainer for dissemination of the curriculum throughout Ohio.





Antioch College Corporation – Glen Helen Ecology Institute “Glen Helen Residential Environmental Education Program” \$49,918

Audience: Pre-Kindergarten-University, Greene County

Contact: Nikos Boutis, nboutis@glenhelen.org, (937) 769-1902, ext. 105

The Glen Helen Outdoor Education Center is the oldest residential environmental learning facility in the Midwest. This project transformed the academic internships of the center into professional practica, to enable the center to continue to provide environmental education instruction to schoolchildren, and professional preparation for outdoor and environmental educators.

BrightPath Active Learning, LLC, “Outdoor Education for Kindergarten Enrichment” \$3,775.73

Audience: Early Childhood, Franklin County

Contact: Colleen Sharkey, colleen@brightpathactivelearning.com, (614) 839-0780.

BrightPath Active Learning is a half-day program that uses outdoor education to provide enrichment for kindergartners who are ready for more than the half-day classroom programs offered by many public and private schools. The grant provided supplies for a stream study, gardening and worm composting activities during all four seasons.



Darke County Educational Service Center, “Producing Ohio’s Renewable Energies (PORE)” \$22,389.66

Audience: High School, seven western Ohio counties

Contact: Dave Shellhaas, dshellhaas@mresc.org, (937) 498-1354

This pilot project targeted 27 teachers and approximately 2,378 high school students from 19 school districts in Ohio. The goal of the project was to increase high school students’ skills at making evidence-based decisions about renewable energies that are found or produced in Ohio. A series of workshops, online follow-up, a teacher’s guide that provides lessons and instructional ideas, and a student booklet with content on biomass (ethanol, biodiesel and methane), wind and geothermal energy sources currently being developed in Ohio, provides a dynamic program that leads students in learning to make decisions about energy options without creating bias themselves.

Ohio University - Civil Engineering, “Virtual Boat for Environmental Education in Ohio” \$45,253

Audience: High School, Undergraduate and Graduate, Athens County

Contact: Tiao J Chang, chang@ohio.edu, (740) 593-1462

This project created a Virtual Boat iPad and desktop computer game whereby students conduct two- and three-dimensional water sampling along a virtual river using an existing GIS database to simulate the current conditions along the Ohio River from Marietta to Gallipolis. Structured lesson plans include a Water Quality Index and Fish Kill and Pollutant Locator using GPS. Students tested for dissolved oxygen, fecal coliform, biochemical oxygen demand, temperature change, total phosphate, nitrate, turbidity and total solids, with results based on real data collected by the University and the Ohio River Sanitation Commission (ORSANCO). The game was field-tested with students and teachers at two high schools in Athens and Meigs counties.



Ohio State University College of Nursing, “Healthy Homes Education for Nursing Students” \$48,675

Audience: Undergraduate, Franklin County

Contact: Barbara Polivka, barbara.polivka@louisville.edu (502) 852-3949

Provided web-based standardized teaching modules to educate at least 300 undergraduate and graduate pre-licensure nursing students per year to U.S. EPA’s Healthy Homes assessment process to identify threats such as radon, lead, pesticides and asthma triggers during their home visits. These students participated in standardized simulation lab exercises to practice Healthy Homes assessments, and at least 20 students piloted actual in-home clinical/experiential Healthy Homes assessments. The project is also described in the following publication: Polivka, B.J., Chaudry, R., Crawford, J. (2012) Home Environmental Hazard Education for Undergraduate and Pre-Licensure Nursing Students. Journal of Nursing

Education. 51(10), 577-581.



The Ohio State University Extension, Butler County, “Youth Scientist; Creating Environmental Stewards” \$46,522.23

Audience: High School, Ashland, Clinton, Fayette, Morgan, Ottawa, Trumbull and Van Wert counties

Contact: Cindy Meyer, meyer.842@osu.edu, (513) 785-6654

The grant provided eight workshops statewide, curriculum kits, website and blog to introduce 261 school teachers to a new curriculum on the emerald ash borer, an invasive insect predicted to eliminate five different species of trees in Ohio and the 44 arthropods that rely on these trees for survival. At least 31,349 students learned about the health of Ohio forests and urban trees, using hands-on scientific research methods.





New Albany – Plain Local Schools, “Tracking is Science” \$4,934

Audience: High School, Franklin and Licking counties

Contact: Sandy Willmore, swillmore@napls.us, (614) 582-9948

Created a Wildlife Tracking Expedition as a week-long summer STEM opportunity for 15 students, which was incorporated into the curriculum of five classrooms to reach at least 150 students in the fall of 2012. An evening “What is in Your Back Yard?” program was also offered to 30 local residents. Participants learned the basics of reading animal tracks and signs to understand animal behavior, and documented their findings using CyberTracker technology, to gain awareness of the presence of wildlife around them, and a better understanding of how human activity is impacting

wildlife and habitat. Lessons included the use of animal tracks in forensic anthropology. By blending outdoor learning experiences with hand-held GPS and videoconferencing technology, students were able to gather, sort, analyze, report and share their findings with others, using discussion, debate and research to draw connections and conclusions.

Talawanda School District – Talawanda High School, “Healthy Water, Healthy People Project – Erik Sustainability Initiative” \$22,065.41

Audience: High School, Butler County

Contact: Adriane Ruther, ruthera@talawanda.org, (513) 273-3559

Students investigated the impact of agricultural chemicals on the watershed of the 100-acre Erik Outdoor Education Area at the newly constructed LEED Gold-certified Talawanda High School. Students explored the stream, wetlands and woods on the property, measuring and monitoring the flow of agricultural chemicals through the wetlands to determine the effectiveness of the wetland ecosystem in mitigating these chemicals. Students then made recommendations to the Board of Education regarding the future use of the agricultural land. Budget included monitoring equipment and hand-held GPS units for the students to use, and certification of the teachers in Project WET’s secondary water monitoring curriculum, “Healthy Water, Healthy People.”



ThinkTV – Public Media Connect, “Growing Up Wild in the Outdoor Classroom”

\$49,853

21 southwest and central Ohio counties

“Nature as the Outdoor Classroom” \$49,853

Audience: Pre-school, Montgomery County,

Contact: Tina Spaulding, tspaulding@thinktv.org (937) 220-1670

Three public television stations trained 1,680 child care providers and parents in central and southwest Ohio to use the outdoors as a classroom for teaching young children about nature and science.

Half-day workshops presented eight units from Project WILD’s “Growing Up WILD” curriculum,

reinforced with a monthly e-newsletter with enrichment ideas for all attendees. Activities included What’s Wild, Tracks, Bird Beak Buffet, Seed Need, Spider Web Wonders, The Deep Blue Sea, Wiggling Worms, and Wildlife is Everywhere.



Ohio Chemistry Technology Council’s

“Teachers, Industry and the Environment” Conference

October 13-14

Dublin, Ohio

The Ohio Chemistry Technology Council’s Teachers, Industry and Environment (TIE) Conference is an exciting “hands on” experience for Ohio’s 3rd through 8th grade science educators and is completely free through the support from the chemical manufacturing industry. The TIE Conference provides educators with a wide-range of science experiments and classroom tools that create interesting and entertaining lessons for students.

- The TIE Conference is aligned with state science teaching standards for STEM curriculums.
- Participating educators have the opportunity to visit a working facility that produces sophisticated chemicals for the health care and personal products industries.
- Provides educators with an abundance of information on the resources available to them, most at no cost.
- Hands-on demos and experiments provide educators with interesting and exciting tools that are easily adaptable to the classroom.
- Provides networking opportunities for educators to share experiences and ideas with other educators.
- Educators have direct interaction with the Ohio Environmental Protection Agency and representatives from the chemical manufacturing industry.
- Graduate credits from Ashland University available (optional for all participants).

www.ohiochemistry.org/aws/OCTC/pt/sp/tieconference



The Future is Green Infrastructure

*By Zach Bollheimer and Denise Natoli Brooks,
Licking County Soil & Water Conservation District*

The world of new construction and redevelopment is changing. As new subdivisions or businesses are built, or older properties are given new life, these developments are required to meet building codes, zoning requirements, and in more recent times, water quality standards for stormwater. Since the onset of the Ohio EPA's National Pollutant Discharge Elimination System (NPDES) Stormwater program in 1990, the typical practice for treating stormwater has been to install

retention or detention basins. These basins are common sites near big-box stores, industrial areas, and residential subdivisions. But over the past few years, innovative stormwater management practices have emerged.

One of these changes has been a push towards what has come to be called green infrastructure. This includes everything from pervious asphalts, cements, and pavers that allow water to flow through them and into the soil, to vegetated green roofs that allow plants to soak up and use water that would otherwise have been sent through a stormwater system via a roadside rain drain or ditch and into a stream.

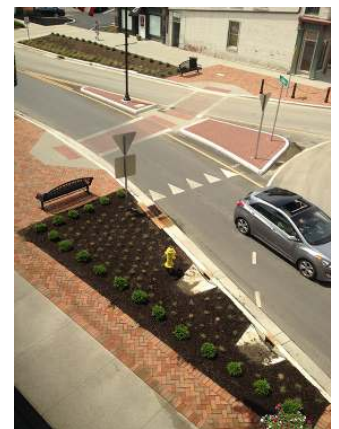
An excellent example of innovative green infrastructure in Ohio is in Licking County. Downtown Newark is close to completing a massive Utility Upgrade and Streetscape Project. Under the roadways and sidewalks, the storm sewer system is being separated from the sanitary sewer system. On the surface, rain water runoff from nearby rooftops, roads, and sidewalks is directed into tree boxes and bioswales. Bioswales are storm sewer alternatives that improve



water quality by absorbing the first flush of storm water runoff and filtering the large storm flows. They also reduce the amount of untreated runoff flowing into nearby rivers and streams.

Another recent shift has been the increased popularity of voluntary home stormwater treatment. Inexpensive rain gardens, vegetated swales, and rain barrels manage and clean stormwater on properties of all sizes. Contact your local soil and water conservation district (SWCD) to find out if you have demonstration rain gardens and rain barrels for viewing in your community.

Additionally, many SWCDs employ stormwater experts to help homeowners and businesses considering green infrastructure for reducing flooding and keeping pollution out of our waterways.



To find a local SWCD, visit <http://www.agri.ohio.gov/divs/SWC/SearchLocalSWCD.aspx>.

Resources

New Groundwater Resources

Groundwater Foundation

www.groundwater.org/resources-for-educators.html?blm_aid=2428961

New Climate Change Teaching Resources

NASA Earth Systems, Technology, and Energy Education

<http://esteem.larc.nasa.gov/>

NASA/PBS global Climate Change teaching modules

http://climate.nasa.gov/resources/education/pbs_modules/

North American Association for Environmental Education/Kettering Foundation

Environmental Issue Forum guide "Climate Choices: How should we meet the challenges of a warming planet?"

<https://www.nifi.org/en/issue-guide/climate-choices>

Download middle school teachers guide: <https://naaee.org/eepro/resources/environmental-issues-forums-eif-o>

Download high school teachers guide: <https://naaee.org/eepro/resources/environmental-issues-forums-eif>

Ohio Opportunities

Future City Competition

The Future City Competition is a program developed for students in grades 6-8 to help them foster interest in STEM and explore careers in engineering. Student teams, along with an educator and engineer mentor, research and design a city of the future using SimCity software. Competition components include a virtual map, essay, scale model and oral presentation. This year's essay challenge, The Power of Public Space, asks students to develop a network of innovative indoor and outdoor multiuse public spaces to serve the needs of their Future City's diverse population. Ohio schools should register by October 23 to participate in the Ohio Region competition January 14th in Columbus. Contact Debbie Morgan, Ohio Region Coordinator, ohio@futurecity.org or see <http://futurecity.org> and <http://futurecity.org/ohio>

Professional Development

The Ohio Storm Water Association Free Webinars

Webinars are all held from 1 - 2:30 pm at Butler County Engineers Office, 1921 Fairgrove Avenue, Hamilton, OH 45011. Although the webinars are free, please email Bob Lentz if you plan to attend LentzB@stormwaterdistrict.org

- October 12, Retrofitting Revisited: Forward Into the Past
- November 16, Non-Traditional MS4s

2017 Ohio Stormwater Conference - 10th Anniversary!

May 10-12, 2017, Kalahari Resort and Conference Center, Sandusky, OH

www.ohstormwaterconference.com

Professional Development for Educators

Project WET and Wonders of Wetlands

November 5, 2016, Miami Whitewater Forest Nature Center, Harrison, OH

Workshop will focus on grades 1-8 and will provide lots of hands-on, minds-on activities. Attendees will receive both nationally recognized curricula.

Cost: \$5

Register: Contact Lynn White, whitelr@butlercountyohio.org

NSTA & SECO Area Conference in Columbus

December 1-3, 2016.

The theme of the conference is Champions of Science: A Game Plan for the Future! And it will feature these supporting strands:

1. Training Camp: Strengthening Fundamentals in Elementary Education
2. Game Time: Tackling Scientific Problems and Pitching Engineering Solutions
3. Science Boosters: Taking It to the Next Level

In addition, this highly specialized professional learning event will enable educators to help our students stay globally competitive in terms of innovation and invention. As the need for students to become stronger in science and STEM grows, so does the need for well-qualified science teachers and administrators who understand what is needed to develop relevant and high-quality science and STEM programs. This NSTA area conference offers unique opportunities for those involved in science teaching to learn how to effectively integrate various instructional approaches into their teaching and learning environments including:

- General sessions from nationally known presenters
- Hands-on workshops to improve their content knowledge
- Concurrent sessions to promote current best practices in instructional planning and assessment
- Network opportunities to develop relationships within a nationwide professional community of science educators
- Focused sessions on developing partnerships within your community to enhance science instruction.

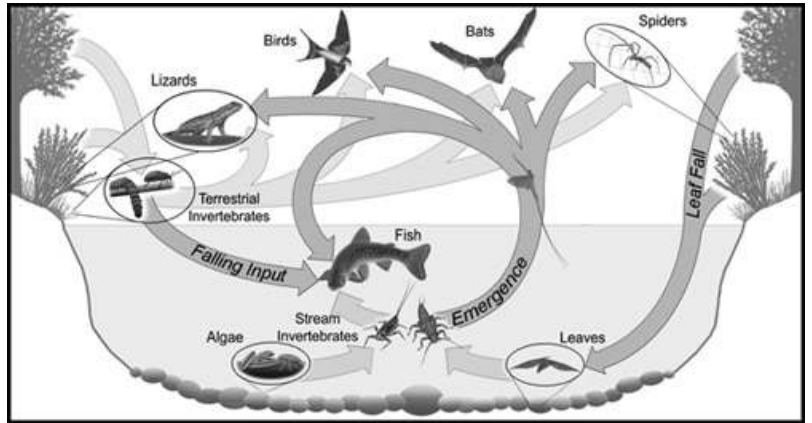
For more information, please visit the NSTA Conference website at www.nsta.org/columbus.

Swimming Pools & Creeks

By Sanitation District No. 1 of Northern Kentucky

Why is Swimming Pool Discharge Harmful?

If not properly handled, swimming pool water can harm our creeks and streams. The chemicals used in pool maintenance (e.g., chlorine, bromine, copper and silver) are designed to sterilize pools and will also kill fish, insects and plants in our waterways. This is not only a problem for those creatures in the waterway, but can have repercussions up the food chain.



What is an Illicit Discharge?

Federal regulations define an illicit discharge as "...any discharge to a municipal separate storm sewer system that is not composed entirely of storm water" (this does not include discharges from fire-fighting activities or permitted sources). Illicit discharges are considered "illicit" because storm sewer systems typically empty directly into local waterways -- not to a treatment facility.

How Should I Discharge My Pool Water?

The preferred method is to discharge pool water to the sanitary sewer system. If discharging to a sanitary system is not possible, either because it is unavailable or not allowed, the next best choices are to discharge pool water onto your property or to the storm water system. However, **only water that is clear, dechlorinated and of a neutral pH may be discharged** from a pool to the street, storm sewer system or a stream.

When discharging pool water onto your property, the water should not flow off your property. Do not allow the water to pond for a prolonged period of time. This could create odors as well as fly and mosquito breeding conditions.

Pool discharges should be done slowly to prevent soil erosion, flooding or damage to adjacent properties. The recommended discharge rate is 25 gallons/minute or less.

Water containing cleaning chemicals, acid buffering compounds, algae and other substances may not be discharged to the street, storm water system or a stream. Test your pool water for chemicals and other pollutants before discharging.

When is it Safe to Discharge My Pool Water?

Pool water should be essentially free of chlorine (less than 0.1 parts per million total chlorine), algaecides and other potential pollutants prior to discharge. Chlorine Neutralizer can be used to reduce chlorine levels and can be purchased at many pool supply stores.

As a general rule, a 10-day holding time after the last chemical treatment is usually adequate to dissipate chlorine.

Before discharging your pool water, pH levels should be within a normal range (6 to 9). pH adjustment chemicals, instructions and test kits are available at many pool supply stores.

Are there General Pool Maintenance Guidelines I should Follow?

Make sure backwash filters are directly connected to your property's sanitary sewer connections.

Always rinse cartridge filters over soil, covering any residue with soil. Never clean a filter near a creek, stream, or storm drain.

Before using copper algaecides, try less toxic alternatives. Ask your pool maintenance service or store for help resolving persistent algae problems without resorting to copper algaecides.



Your Regional Directors

Region 1 - Central Ohio

Linda Pettit, Franklin SWCD

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Region 2 - NW Ohio

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Open

Region 4 - SW Central Ohio

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Region 7 - S Central Ohio

Bill Wickerham, Adams SWCD

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Region 8 - NE Ohio

Dawn Wrench, Earth Day Coalition

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Region 9 - NE Central Ohio

Jamie Greiner, University of Mt. Union

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Region 10 - E Central Ohio

Open

Region 11 - SE Central Ohio

Vicki Kohli, retired, Fairfield SWCD

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Region 12 E NE Ohio

Sheila Cubick

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SheilaC@zoominternet.net

Meet an EECO Board Member

EECO Board Member

Joshua York ... Joshua has lived in Ohio all his life, but didn't dedicate himself to Environmental Education until he was 11 years old. Since then, he has bounced around positions between Aullwood Audubon Center, Mohican Outdoor School, Centerville-Washington Park District, and Five Rivers MetroParks. He is currently a Conservation Education Supervisor for Five Rivers MetroParks, protecting 15,000 acres of forests, prairies, and river corridors in and around Dayton, Ohio, USA. There, he builds a Culture of Conservation through immersing diverse groups of people in local habitats. From exploring a creek to bird watching, his visitors engage with nature, realize they are a part of it, and get involved with conservation efforts. Joshua understands that conservation knows no age boundaries, and has a passion for inspiring preschoolers to take action for healing natural areas. Joshua holds an Associates Degree concentrating in nature interpretation from Hocking College, a B.S. in Biology from Ashland University, and is a graduate of Miami University's Global Field Program



What brought you to EECO? Those that care for air, water, and soil are some of the most kind people you'll ever meet, and EECO is full of those people. I feed off their passion, and find myself inspired after every gathering!

What would you like to see EECO accomplish in the next 5 years? I'd like to see EECO increase its membership: There are many environmental educators in Ohio. Through EECO, we can make coordinated State-wide impacts!