



Harmful Algal Blooms

By the Ohio Environmental Protection Agency

Water in streams, lakes and ponds (surface water) comes in different colors because all kinds of things find their way into water. Soil and leaves can turn water

brown, aquatic plants and mosses can turn water green, while very small things, such as bacteria and tiny protozoa, may be in clear water, but not visible to the naked eye. Some things in water even create colors or smells that let people know that danger might be present.

When wading, boating or swimming – even in areas such as beaches -- it's a good idea to not swallow untreated water and to rinse off after spending time on or in the water.

Aquatic plants, bugs and fish need nutrients and water as well as warmth and light from the sun to fuel the food chain. If one of these is present in too high a quantity, the whole balance can be thrown off and change the health of a stream or lake to change.



2011 Satellite Imagery of Lake Erie Algal Bloom

Across the country, including Ohio, too many nutrients in surface water cause cyanobacteria (also known as blue-green algae) to bloom. These are microscopic organisms found naturally in surface water that can sometimes multiply to form harmful algal blooms (HABs). HABs can potentially produce toxins that can irritate your skin, cause you to become sick – or even cause death in pets, livestock and humans.

If water looks dense, green or frothy turquoise, a HAB may be present. If it has a disagreeable odor, it may be unhealthy for people to contact the water. If in doubt, stay out!

There is a lot of information available about HABs.

To get the latest about Ohio's water quality before going to a lake
<https://odh.ohio.gov/healthybeaches>

The National Oceanic and Atmospheric Administration (NOAA) offers a classroom activity recommended for students in grades 9-12
http://oceanservice.noaa.gov/education/lessons/bad_algae.html

Younger students may benefit from
https://www.bigelow.org/edhab/fitting_algae.html

Save the Date

Find out more at
www.eeco-online.org

OEEF Grant

Letter of Intent due July 8, 2016

Grant Due July 15, 2016

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

Grant Writing

June 8, 2016 Maumee, Ohio

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

Life on a Sandy Delta

June 5-11 Camp Oty'Okwa

<http://tinyurl.com/h7j6dy4>

Black Swamp

June 21-23, 2016 Toledo, Ohio

Project WET, HWHP, Wonders of Wetlands and more...

<http://tinyurl.com/z5w48wx>

1st Law of Ecology: Everything is Connected

June 21-22, 2016 New Reigel, Oh

<http://tinyurl.com/zlwdagj>

Three Days in the Wet & Wild

June 28-30, 2016 Cuyahoga Falls

Projects Wet, Wild and Wonders of Wetlands

<http://tinyurl.com/jhqtm4>

Water & Wildlife

July 24 – 30, 2016

OSU Stone Laboratory,

<http://stonelab.osu.edu/applynow>

The 101 Alternatives to Chalkboard Conference

October 7-9 Camp Kern

See inside for details

Ohio's Environmental Education Certification Program – Deadline Extended!!

June 13-17, the opportunity to earn a certification in environmental education and two graduate credits from Kent State University (credits are an additional fee of \$150/credit hour). This is a new format for this program transitioning from 4 workshops over the school year to one weeklong workshop in June. Location will be Old Woman Creek Reserve along the shore of Lake Erie and a national estuarine research reserve. Outdoor educational components include but are not limited to forest, stream, and lake environments. There will be opportunities to get out on the water both in canoes and powerboat. There will also be hikes and outdoor activities that exhibit best practices for environmental education. Many qualified instructors from diverse backgrounds and organizations, including Division of Wildlife, Ohio EPA, Hiram College and Ashland University.

Training in the following areas will need to be completed to meet certification requirements:

- Foundations of Environmental Education
- Knowledge of Environmental Process and Systems
- Personal and Civic Responsibility
- Planning and Implementing Environmental Ed.
- Fostering Learning
- Assessment and Evaluation

Want to join in the fun this summer on the shore of Lake Erie? Go to www.eeco-online.org for more information and the application

Save the Date: 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

Interested in presenting?: Please contact Dave Moran (see above information) for details.

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



Ohio Stormwater Association

*By Jennifer Fish,
Franklin Soil and Water Conservation District*



Stormwater management is new and growing field. It started in the 1980's focusing on sediment erosion control. With limited knowledge and regulations, educating developers and contractors on the basics of compliance with regulations was a challenge. In a short time the field has grown into a multifaceted field of experts ranging from education, social marketing, engineering, hydrology, GIS, and environmental science. Today developers and contractors have knowledge and understanding of state and local stormwater regulations. The amount of technological resources and expertise available to storm water professionals is vast. Finally, residents are starting to grasp the concept of rain water runoff through expanding public outreach programs.



The Ohio Stormwater Association has origins in the beginnings of stormwater management. In the late 1990s the Ohio Stormwater Taskforce (OSWTF) formed to discuss stormwater and watershed issues. The group was composed of soil and water conservation staff, county engineers, city and county officials, regional planning organizations, state government agencies, watershed groups, consulting engineers and others. The name of the group changed in 2007 to the Ohio Stormwater Association and a board of directors was formed at that time. Today the Ohio Stormwater Association is a not-for-profit, non-political organization. The Ohio Stormwater Association is orga-

nized formally as the stormwater division of the Water Management Association of Ohio which maintains a 501(c)4 status.

Today the association continues to be a group of public and private citizens dedicated to advancing the management of stormwater and related natural resources through education, leadership, and technical assistance in Ohio. To accomplish this the association organizes educational meetings on topics of interest to our members, sponsors the Ohio Stormwater Conference held each spring, and connects with state and local leaders on the advancement of stormwater practices and permit compliance statewide.



The field of stormwater management has plenty of room for improvement and growth. There are still many unanswered questions and unmet opportunities that need to be addressed. Many local governments and professionals continue to need education, networking, and connections to state and national leaders.

The advantage of this statewide association are the opportunities to learn from successful programs and projects, support improved stormwater programming and permit compliance, provide unified feedback to regulators on stormwater regulation compliance, and network with other professionals. Due to the comprehensive nature of stormwater and stormwater permits, professionals range from educators, public employees, scientists and consulting engineers.



In order to become a member of the Ohio Stormwater Association (OSWA), you must join our parent organization, the Water Management Association of Ohio (WMAO), making sure to note stormwater as your area of interest.

Please see page 9 for some of the upcoming professional development offered through the Association.

Visit www.ohioswa.com for more information.

Lead in Drinking Water

The presence of lead in drinking water has recently been at the forefront of media broadcasts. The following collection of materials can help support teachers in discussing these issues.

<http://communities.ohiorc.org/science-window/resources-about-lead-in-drinking-water/#sthash.pa2yTXnc.dpuf>

<https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>

<https://www.cdc.gov/nceh/lead/tips/water.htm>

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: 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.

June 8, 10 am - 4 pm., Maumee, Ohio, Grant writing 101/102

Fallen Timbers Visitor Center, 4949 Jerome Road, Maumee, Ohio 43537. E-mail dennis.clement@epa.ohio.gov by June 3, 2016 to register.

Please visit the website to view the most up to date list of upcoming workshops www.epa.ohio.gov/oeef

Awarded General Grants, Spring 2016

In the spring 2016 application cycle, Ohio EPA awarded grants for the following five projects for a total of \$190,044.

Case Western Reserve University - Leonard Gelfand STEM Center, "Kelleys Island Collaborative," S16G-045, \$45,633

Audience: PreK-University (Grades 8-10), Cuyahoga and Ottawa Counties.

Contact: James Bader, jxb14@case.edu, (216) 368-5289

Professional development workshops will be held for teachers in the Cleveland Metropolitan School District to help expose students to important issues facing Lake Erie. Teachers will participate in a week-long workshop to develop a program they can implement with their students at the newly established Kelley's Island Field Station and the Cleveland Metroparks' Stewardship Center at West Creek. Teachers will study best management practices for nutrient control and the relationship to harmful algal blooms, the relationship between habitat and biodiversity, and stormwater management practices. Students will learn to address ecological problems using a Biology, Environmental Science, Technology (BEST) and Environmental Science Technology Engineering and Math (eSTEM) approach. Initially 15 teachers and 75 students will participate in the activities described in this proposal, but their work will impact 1200-1500 of their peers by the end of the grant period.

Cuyahoga River Community Planning dba Cuyahoga River Restoration, "Depave NEO," S16G-046, \$46,997

Audience: General Public, Cuyahoga and Summit Counties.

Contact: Jane Goodman, goodman@cuyahogariver.org, (216) 496-7694

Training will be provided to help municipalities, watershed organizations, community development corporations, and the general public plan, implement, and maintain projects that remove impervious surfaces, especially excess or abandoned areas of parking lots in highly urbanized areas and convert them to vegetated stormwater treatment areas. Trainings will include webinars, workshops, and a hands-on depaving project, and trainees will become trainers to broaden and perpetuate projects throughout Northeast Ohio. A Depave handbook that includes the basic training elements, checklists, process-

es, and resources to enable anyone to plan and carry out projects and a flyer/infographic to introduce the program and handbook will be produced. The project will establish a Depave NEO program to reduce polluted runoff, improve water quality, and provide opportunities for organizations and individuals to participate in greening their communities.

Miami University - Hefner Museum of Natural History, "Sowing SEEDS (Science, Environmental Education, Discovery, and Synthesis)," S16G-054, \$40,484

Audience: PreK-University (Pre-Service Teachers), Butler County

Contact: Cecilia Franz Berg, bergcf@miamioh.edu, (513) 529-4617

The program will train 32 early childhood education majors as environmental educators, stressing content knowledge and effective teaching. Participants will become Certified Early Childhood Environmental Educators and will receive a kit of materials and resources to use in their classrooms. Hefner Museum staff will also be available to answer questions and offer support to participants and host field trips. Undergraduates who complete the program will impact as many as 2,000 students and will continue to use their knowledge and the resources after graduating to impact students in their classrooms.

United Plant Savers, "Explaining United Plant Savers' Role in Habitat Restoration Through Environmental Interpretation," S16G-034, \$25,000,

Audience: Pre-School – University (K-12), Meigs County

Contact: Susan Leopold, susan@unitedplantsavers.org, (703) 667-0208

Interpretive signage and an exhibit will be created to tell story of resource extraction and habitat restoration at the Goldenseal Sanctuary in Rutland, OH. As visitors walk around the trail, they will learn about the restoration project. Through multimedia, the interpretive exhibit will show what land looked like in the 1960s and go through the various stages of how the land was restored. A brochure will also be developed to educate the watershed, restoration, medicinal plants, local ecology and the impacts anyone can make on habitat. OEEF funds will also provide transportation for students to the sanctuary. The Meigs Soil and Water Conservation District and Rural Action will collaborate on the project.

Western Reserve Resource Conservation and Development Council, "Environmental Career Pathways for Under-served Youth," S16G-050, \$31,930.

Audience: PreK-University (High School and Undergraduates), Cuyahoga, Lake, Lorain and Portage Counties

Contact: Glenn Odenbrett, glennodenbrett@aol.com, (216) 407-4413

Much needed environmental career related services will be provided to at least 200 high school and undergraduate students in Northeast Ohio. Environmental career relevant training and awareness through service learning leadership development sessions and environmental career placements will be offered to students. The project will also enhance the Environmental Career Ambassadors program that is being implemented by the Environmental Education Council of Ohio by additional recruiting ambassadors and revising and adapting resources. At least 25% of the project beneficiaries will be admitted and study at partner post-secondary institutions. The Environmental Education Council of Ohio, Job and Family Services and Davey Tree Company will collaborate on the project.

Awarded Mini Grants, Spring 2016

In the Spring 2016 application cycle, Ohio EPA awarded the following mini grants, for a total of \$32,319

BrainBox LTD., "Landlord Training Event," \$5,000.00

Audience: General Public, Hamilton County

Contact: Lauren Campbell, contact@brainboxltd.com, 765-624-8456.

Host a landlord training event, targeting large (5 units or more) multi-family property owners/landlords/property managers, educating on the benefits of incorporating sustainable initiatives on their properties and providing resources that they can pass along to their tenants. The topics of focus will be sustainable lawn care, stormwater management, energy efficiency, air quality, curbside and commercial recycling options. There will also be a legal component to help develop lease language to hold tenants accountable. Primary audience is property owners and land lords, the secondary audience is adults generally, as we anticipate their tenants will also receive information.

Clark County Solid Waste District, "Water and Wetlands Teacher Workshop," \$4,050.00

Audience: Pre-School – University, Clark County

Contact: Steve Schlather, ssslather@clarkcountyohio.gov, 937-521-2022.

The Clark County Solid Waste District and the Clark County Parks District plan to offer a workshop in fall 2016 to introduce primary and secondary teachers in Clark County to the Healthy Water Healthy People (HWHP) and Wonders of Wetlands (WOW) curricula. Lessons demonstrated will focus on water runoff, wetlands, water cycle, nonpoint source pollution, and watersheds. The workshop also will include a demonstration of an Enviroscape Model, which will be available to teachers as a hands-on tool. The workshop will offer six contact hours and will be held at George Rogers Clark Park, allowing us to use the creek in the park as a setting for at least one activity, weather permitting. We plan to ask participants to introduce the curriculum to their colleagues and provide a brief report on how they used the curriculum in class.

Delaware City Schools – Dempsey Middle School, “Dempsey Ecology Project,” \$5,000.00

Audience: Pre-School – University, Delaware County

Contact: Paul Martin Olen, olenpa@delawarecityschools.net, 740-417-6478.

The focus of the Dempsey Ecology Project is on teaching forest and wetland ecology while actively eradicating alien invasive species (AIS) from the 50 acre forest and mitigated wetland area behind Dempsey Middle School. The area includes an intermittent headwater tributary to the State Scenic Olentangy River. This award-winning program was begun in the spring of 2014.

Hathaway Brown School, “For the Birds: Restoration, Exploration and Creative Play in Nature for Early Childhood Learners,” \$5,000.00

Audience: Pre-School – University, Cuyahoga County

Contact: Victoria (Torrey) McMillan, tmcmillan@hb.edu, 216-932-4214.

This project will restore a small section of Hathaway Brown’s (HB) 16 acre suburban campus that is dedicated as a bird sanctuary. The space currently is lightly wooded with some shrubs and lawn beneath it. We want to enhance the bird and pollinator habitat by removing non-native species and planting additional native perennial herbaceous plants and shrubs that will create an edge/woodland habitat to invite in birds. The space will also be designed as a nature exploration and play space for our Early Childhood program, which will develop (with guidance from Shaker Lakes Nature Center) and implement expanded nature play, exploration, and stewardship curriculum using the space. Grant funds would be used for the habitat restoration materials and site work. HB will provide significant matching funds. Project end date is listed as 10/2017. At this point the project will be substantially complete, but HB will continue to deliver short professional development workshops thru 2019.

Lake County Stormwater Management Department, “Training & Education Materials for Municipal Staff,” \$4,986.00

Audience: Regulated Community, Lake County

Contact: Susan Haboustak, susan.haboustak@lakecountyohio.gov, 440-350-5902.

Funding would be for adapt materials to provide more user-friendly training and education for municipal operations staff/employees. Our project includes printing of more customized posters and vehicle guides describing stormwater Best Management Practices (BMPs) and pollution prevention; laptop and projector for educational workshops. All materials will include local imagery to encourage a community appeal and cover the following topics: spill response, installation of sediment and pollution controls during construction, final vegetative stabilization, stormwater pollution prevention during lawn care and fertilizer use.

Meigs SWCD, “AWARE – Assessing Water and Rural Environments,” \$4,836.00

Audience: Pre-School – University, Meigs and Athens Counties

Contact: Jenny Ridenour, jenny.ridenour@oh.nacdnet.net, 740-992-4282.

This project will add resources to teach students about how pollution affects our streams and rivers. The resources are hands on kits that are reusable and can be used at different grade levels. The project will focus on second grade, fourth grade, seventh grade and high school. These grade levels have the most focus on water, erosion, pollution, and methods to collect data on water. The younger grade levels will relate water to the ecosystems including plant and animal life. The older students will investigate how water becomes polluted and ways to prevent the pollution. Project WET and Healthy Water, Healthy People will be used for educating teachers.

Sycamore Community Schools – Symmes Elementary, “A Year on the Trail: A Field Investigations Approach to EnviroEd Using Nature Trail at Symmes,” \$3,447.00

Audience: Pre-School – University, Hamilton County

Contact: Steve Reinke, reinke@sycamoreschools.org, 513-316-3650.

Grant will directly facilitate the environmental education of 500 K-4 students in Symmes Elementary (as well as the 1,500 in attendance in Sycamore Community Schools’ three other elementary buildings) by helping train teachers and fund ongoing scientific inquiry and monitoring of the Nature Trail at Symmes, a nine acre wooded watershed owned by the district. The trail’s continuing restoration and removal of invasive species provides hands-on opportunities for even the youngest to design and conduct field investigations to help determine the effect and direction of the renewal efforts. They will then communicate these efforts to the community at large at the end of the school year. Teachers, referencing materials from Project Learning Tree and Project Wild, will be trained to use the monitoring equipment to help the students gather, organize, and interpret data they have collected.

Please remember to visit the website to view the most up to date information about these grants and upcoming workshops

www.epa.ohio.gov/oe

EECO Annual Appeal 2015-2016 Donors

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

Thank you to all of our donors for the last appeal.

Pat Barron
Tom Weeks
Marty McTigue
Herbert Broda
Carolyn Watkins
Glenmede Trust Company
Jen Dennison
Denise Natoli Brooks

Laura Schetter
Paul Spector
Linda Ramey
Fia Cifuentes
Joshua York
Donna Lewis
Jessica Pickering
Julie Stubbs

Joe Brehm
Diann Blizniak
Laura Gooch
Lynn White
Sue Matz
Dave Moran
John Kurtz



Save the Date: Life on a Sandy Delta

June 5 - 11, 2016
BBBS Camp Oty'Okwa

Join us for our 8th year 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.

Arrival and Registration: 4:00pm Sunday, June 5

Departure: 1:00pm Saturday, June 11

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

For more information, contact: Cathy Knoop

19772 Keifel Road, Laurelville, Ohio 43135

740-603-3911

cathy.h.knoop@gmail.com

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

- June 15, Green Infrastructure, Green Jobs: The Latest Trends
- September 14 Incentivizing BMP Installation in Communities with Stormwater Utilities
- October 12, Retrofitting Revisited: Forward Into the Past
- November 16, Non-Traditional MS4s

Implementing a Successful IDDE Program

June 9, 10:00 a.m.—2:00 p.m. at Butler County Soil & Water, 1802 Princeton Road, Hamilton, OH 45011

June 23, 10:00 a.m.—2:00 p.m. at Franklin Soil & Water, 1404 Goodale Blvd., Suite 100, Columbus Ohio 43212

Registration Fees Member: \$15 Non-member: \$25

Topics of discussion include:

- Illicit Discharge Detection & Elimination (IDDE) Program Requirements & Considerations
- Local Case Studies: Elements of a Successful IDDE Program
- IDDE Partnerships
- OEPA Updates

Register: <http://www.ohioswa.com/events/implementing-sucesful-idde-program/>

Professional Development for Educators

Forest Ecology PLT Workshop

Tuesday, June 28 & Wednesday, June 29, 2016

Holden Arboretum is hosting a PLT workshop with a focus on Forest Ecology and applying these lessons by grade level. Contact the PLT-Ohio office or Mike Sustin at Mike.sustin@westg.org to apply. Graduate credit from Lake Erie College also available.

Athens & Meigs County Workshops

Using Project WILD, teachers will explore wildlife and habitat field investigations methods under limited or urban outdoor conditions.

June 20, 21 and 23, (9am to 3pm)

Cost: \$140 OU College Credit Fee plus \$75 for class materials or \$75 for CEUs and materials only.

Using Project WET, Healthy Water, Healthy People and the Wonders Of Wetlands, teachers will explore science methods and data collection with field experiences in the world of water .

June 27, 28, 29 and 30, (9am to 3 pm)

Cost: \$140 OU College Credit Fee plus \$75 for class materials or \$75 for CEUs and materials only.

Contact: teresacaldwell@athensswcd.org or jenny.ridenour@oh.nacdn.net for details, to register: <https://www.ohio.edu/education/summer.cfm>

COSI Summer Professional Development Series

Topics Include:

- Integrating Science, Language Arts, & Mathematics for Grades K-8
- Instructional Inquiry Strategies
- Project and Design Based Learning in the K-8 Science Classroom
- Bridging the Gap for Science, Grades 4-8 and for Grades K-3

Find out more at www.cosi.org/educators/professional-development/professional-development-workshops.

For questions, please contact Robin Deems at 614.228.2674 X. 2357 or rdeems@COSI.org.

U.S. EPA's Safer Choice Program Encourages Better Decisions when Choosing Spring Cleaning Products

It's time for spring cleaning, and the U.S. Environmental Protection Agency, through its Safer Choice program, is encouraging consumers to look for cleaning products that will protect public health and the environment. "U.S. EPA's Safer Choice program helps consumers find products that are productive and contain ingredients that are safer," said U.S. EPA Mid-Atlantic Regional Administrator Shawn M. Garvin. "Products that carry the Safer Choice label have been carefully evaluated by U.S. EPA scientists to ensure they contain ingredients that are safer for both humans and environmental health." U.S. EPA developed Safer Choice labels so it would be easy for consumers and businesses to choose products that meet U.S. EPA's safer product standards. Although the Safer Choice label applies to products that are used year round, U.S. EPA is making a special emphasis just in time for spring cleaning. More than 2,000 products currently qualify to carry the Safer Choice label. Safer Choice products are available for your home at retail stores and for use in businesses like schools, hotels, offices and sports venues. Along with protecting human health, Safer Choice products are less toxic to fish and other aquatic life and they break down more quickly through natural processes, so they are less likely to become part of the food chain or damage the ecosystem.

<https://www.epa.gov/saferchoice>



Monday Creek Canoe Float 2016

A benefit for the Monday Creek Restoration Project

Date: Sunday, June 12

Location: Meet at the Hocking Parkway canoe put-in (on Hocking Parkway at the Bridge over the Hocking River in Nelsonville). The float will end at Fast Traxx Motoplex off of St Rt 33. Shuttle back to Hocking Parkway provided.

Details: The day will include a 6 mile float on the Hocking River | A locally sourced river-side picnic including food from Chesterhill Produce Auction, Mt. Airy Beef, Frog Ranch, and Shagbark | Interactive stream and wildlife activities for all ages | A stop at the mouth of Monday Creek to discuss restoration success.

Cost: Your generous donations help Rural Action continue programming, education and outreach in our region. The suggested donation for this event is \$20 per person.

RSVP: Registration is required by June 7th. Please visit <http://tinyurl.com/zytn9b8> or call 740-394-2047 to reserve your spot!



Water Resources

Watersheds

Where does your water go? Check out this watershed map of the US. If you zoom in, it will show the drainage area coming in and out of a location. Hover over New Orleans to see the entire watershed for the Mississippi... yes we are in that watershed.

<http://watersheds.fernleafinteractive.com/>

Ohio River Facts

<http://www.orsanco.org/river-factsconditions>

Lake Erie Facts

<http://www.lakeeriewaterkeeper.org/lake-erie/facts/>

Water Maps

Includes groundwater pollution potential, aquifer, water withdrawal, lowhead dams, and water shed maps.

<http://water.ohiodnr.gov/#MAP>

Groundwater in Ohio Factsheet

<http://epa.ohio.gov/Portals/28/documents/gwqcp/gwfactsht.pdf>

Ohio Water Use

http://oh.water.usgs.gov/water_use.html

Home Water Use Calculator

<http://www.home-water-works.org/calculator>

Drinking Water Advisories for Ohio Public Water Systems

<http://wwwapp.epa.ohio.gov/ddagw/Advisories/advisories.html>

Do You Know Your Water?

By Lynn White, Butler Soil and Water Conservation District

Do you know where your water comes from? How it's cleaned? And, what happens after you flush it? In recent years, the City of Fairfield, in SW Ohio has been kind enough to take groups on educational tours of their drinking and their waste water treatment plants. In the past, I have had the pleasure of taking school groups, scouts, teachers, and our local citizen science river monitoring group to their facilities. I'm going to share the journey of water in their systems.

The City's water plant provides water to more than 44,000 customers, including Mercy Hospital South, and a large variety of other businesses. In 2015, the water plant provided treatment for over 1.84 billion gallons of water pumped by the City's wells from the Great Miami Buried Valley Aquifer. This sand and gravel aquifer, formed by glaciers over 10,000 years ago, is one of the largest and most productive aquifer systems in the country.

To insure water quality and source water protection, the Great Miami Buried Valley Aquifer is monitored by the Hamilton to New Baltimore Groundwater Consortium. This is a group comprised of the City of Fairfield, the City of Hamilton, the City of Cincinnati, the Southwest Regional Water District, the Southwestern Ohio Water Company, Miller Brewing Company, and the Butler County Water & Sewer Department.

During my last field trip to the plants, Andres "Andy" Eddy, Superintendent of the Water Division and Jason Hunold, Superintendent of the Wastewater Division were gracious enough to show us around.

Here are some of the pictures from the tours.

Drinking Water Treatment Plant



Learning about maintaining the hundreds of miles of buried pipes.



Drinking: Aerator

Aerator once water is pumped out of aquifer



Drinking: Clarifier

Clarifier: Lime is added causing a reaction to occur that causes flocculation and coagulation of microscopic particles. The water is then re-carbonated with carbon dioxide to control the pH of the water



Drinking: Filter

Sand filters are used next



Drinking: pipes

Under the sand filter tanks are a huge network of pipes for taking clean water away and also for back washing the sand filters.

Wastewater/ Water Reclamation Facility



Wastewater: Screen

Incoming water has garbage screened out. This garbage is then taken to the landfill are only about 17% water. These solids



Wastewater: Solids

Then larger sediments are allowed to settle to the bottom and are removed. They are then squeezed to remove the water. until they are then stored on site until they can be used as fertilizer on farm fields



Wastewater: Aeration

Bacteria is used for this next stage of treatment and they need a lot of oxygen.



Wastewater: Clarifier

Secondary clarifier performs more sedimentation



Wastewater: UV light

UV lights blast the bacteria to sterilize it before the water leaves the system.



Wastewater: Outflow

Watching the water leave the plant on its journey to the river

The City of Fairfield operates its own laboratory at the water treatment plant to test the water at various stages of the treatment process and in the distribution system. This insures that the water that is produced is safe and of the highest quality. It also fulfills the daily testing requirements of the Ohio Environmental Protection Agency (OEPA). The laboratory and its two laboratory analysts are certified by the OEPA for chemical and bacterial testing. All plant operators and relief operators are also certified by the OEPA to run required process control testing. The City of Fairfield practices a more rigorous testing program than required by the EPA in an effort to insure the highest possible quality of drinking water.

Thank you again to the City of Fairfield and to Public Utilities Director Adam Sackenheim, and Superintendents Andreas Eddy and Jason Hunold.

