Summer 2017

The Ohio Water Table

A Publication of the Water Management Association of Ohio

No. 142 / Quarterly

Chagrin River Watershed Partners Receives National Grant For Protection Of Lake Erie

News Release - Chagrin River Watershed Partners, April 20, 2017; Heather Elmer, Executive Director (440) 975-3870, helmer@crwp.org

Chagrin River Watershed Partners, Inc. has received a national grant from the U.S. Endowment for Forestry and Communities to support a regional collaboration to protect Lake Erie through the Healthy Watersheds Consortium Grant Program. This project is a partnership with the Central Lake Erie Basin Collaborative, West Creek Conservancy and Western Reserve Land Conservancy.

The grant awarded to Chagrin River Watershed Partners was one of sixteen projects funded out of 74 proposals submitted nationwide and one of four projects targeting watershed protection in the Great Lakes region. The $200,000 award, matched with $200,000 of local in-kind contributions, will enable the Partners to work with watershed organizations and land trusts to protect and steward healthy stream corridors that flow into Lake Erie from Sandusky Bay in Erie County to Conneaut Creek at the OhioPennsylvania border. Project partners will use this 3-year grant to leverage $11 million for the protection of up to 425 miles of streams and 30,000 acres of land within Ohio's Central Lake Erie watershed. The project will undertake a regional approach to protecting healthy watersheds through land preservation, stream corridor enhancements, and local and regional planning. "Chagrin River Watershed Partners is proud to receive this grant and looks forward to working with our partners to sustain Lake Erie for people and wildlife," said Executive Director Heather Elmer.

The Central Lake Erie Basin Collaborative is a network of organizations and volunteer-based initiatives that work cooperatively to empower communities to preserve and restore Lake Erie's watersheds in northern Ohio. Organizations and volunteer groups currently participating in this network include The Nature Conservancy, Firelands Coastal Tributaries Watershed Program, Friends of Old Woman Creek, Friends of Huron River, Friends of Vermilion River, Black River Area of Concern, Plum Creek, Rocky River Watershed Council, West Creek Conservancy, Mill Creek Watershed Partnership, Big Creek Connects, Tinker's Creek Watershed Partners, Friends of Yellow Creek, Friends of the Crooked River, Chippewa Creek, Brandywine Creek, Middle Cuyahoga, Breakneck Creek, Cuyahoga River Restoration, Doan Brook Watershed Partnership, Bluestone Heights, Friends of Euclid Creek, Chagrin River Watershed Partners, Mentor Marsh, Arcola Creek, McKinley Creek and the Grand Ashtabula Conneaut Partnership. Watershed program staff from Erie, Cuyahoga and Lake County Soil and Water Conservation Districts also participate in the Collaborative.

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Inside this issue:

President's Column

Alex Covert, WMAO 2016-2017 President

If you drive around Ohio, it will not take long for you to spot an "HHI" sticker on the back of someone's vehicle. "HHI" stands for Hilton Head Island and is one of Ohio's favorite vacation destinations in South Carolina. With around 40% of the residents and tourists hailing from the Buckeye State, it has even been called a part of southern Ohio.

Some say that it's because Charles Fraser, the developer of Hilton Head's Sea Pines Resort, targeted Ohioans in his marketing campaigns. Regardless of the reason, Fraser's committed vision of coupling nature with a seaside resort was realized and a new sort of development was born.

"...yesterday's vision has to change with today's challenges to become tomorrow's way of doing things."

He envisioned staggered homes that were set back from the coast and hidden in pine groves. He prohibited builders from removing too many trees and laid out roads to avoid key landscape features. He built numerous bike paths to lessen automobile traffic. He set aside large tracts of wild lands to remain untouched by developers. However, despite his original intent to be "green", Fraser's idea for Hilton Head brought with it a suite of environmental problems caused by the strain of development – overwhelmed sewage treatment facilities, degraded water-quality, impacted estuarine systems, and more.

Is Hilton Head Island better off for Mr. Fraser's "environmental" approach? Probably. But, whether it's a coastal resort or the water resources of an entire state, yesterday's vision has to change with today's challenges to become tomorrow's way of doing things. Side-note – I recommend Mangiamo's pizza if you are planning to visit.

S. Alex. Covert

Chagrin River Watershed Partners

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This project will integrate the efforts of watershed organizations and land trusts to accelerate progress towards protection of Lake Erie and the region's watersheds. Healthy Watersheds Consortium funding will support a model for effective, regional collaboration that can be replicated across Ohio and the nation. The grant-funded project received support from Congressman Dave Joyce of Ohio's 14th Congressional District, who stated "This is about where we swim, where we fish, and most importantly, where we get our drinking water. Lake Erie provides drinking water for over 11 million people and jobs for 119,000 Ohioans.

So regardless if you live right on the lake or inland, the funding of the Healthy Watersheds Consortium will contribute to the vital protection of Lake Erie. That is a direct benefit to everyone's quality of life in Northeast Ohio." This project will benefit Ohio's 4th, 7th, 9th, 11th, 13th, 14th and 16th Congressional Districts.

Chagrin River Watershed Partners is a nonprofit organization that uses a regional watershed approach to enhance quality of life by preserving rivers, planning for better development and solving natural resource management problems. Sixteen communities, counties and park districts formed the Watershed Partners in 1996 to address rising infrastructure costs because of flooding, erosion and water pollution. Today, the Partners' 34 members represent 91% of the land area in the watershed. For more information about Chagrin River Watershed Partners, visit http://www.crwp.org

The Healthy Watersheds Consortium Grant Program's second year of awards expands the pace of proactive watershed protection in the U.S. through conservation and improved stewardship of hundreds of thousands of acres of lands that provide drinking water, flood risk reduction, and an array of economic and environmental benefits. In 2017, the Program awarded a total of $2.75 million that will benefit organizations and partnerships in 18 states. The Heathy Watersheds Consortium Grant Program is cofunded by the U.S. Environmental Protection Agency, Natural Resources Conservation Service and the U.S. Endowment for Forestry and Communities, which manages the partnership. Other Healthy Watersheds Consortium Grant Program awards in the Great Lakes Region include a project led by the Huron River Watershed Council to advance land protection within Michigan's Huron River watershed, which will also benefit the health of Lake Erie.

For more information about the Healthy Watersheds Consortium Grant Program, visit http://www.usendowment.org/healthywatersheds.html

Ohio Floodplain Management Association

Division Updates

By **Stephen Moore**, OFMA President

2017 Ohio Statewide Floodplain Conference to be held on August 23-24, 2017 at the Doubletree Hotel Columbus/ Worthington. Please visit www.ofma.org for more information.

2019 ASFPM Annual Conference- Cleveland, Ohio, May 19-24.

Membership - Please remember when filling out your 2017 WMAO membership application to check OFMA as your primary Division Affiliation. By designating OFMA it will help us provide better service, information and training to those who are interested in floodplain issues across the State of Ohio.

Upcoming CFM Exam Opportunities! - The Ohio Floodplain Management Association offers CFM examination testing periodically across Ohio. **2017 CFM Exams include:**

August 24, 2017

1:30 pm - 4:30 pm

The Doubletree Hotel (Columbus/Worthington)

175 Hutchinson Avenue

Columbus, OH 43235

Proctor: Jason Farrell

November 8, 2017

1:00 pm - 4:00 pm

318 Dorney Plaza, 3rd Floor
Conference Room

Findlay, OH 45840

To register for the CFM Exam, please contact the Association of State Floodplain Managers at: 608-828-3000 or cfm@floods.org Exam information and study guide may be referenced at: www.floods.org

For current updates on NFIP Reform/Reauthorization, 2018 Federal Budget and the New FEMA Director please go www.floods.org

Committees – OFMA has established standing committees to address areas of greatest concern to OFMA and to perform many of the functions of the organization. There are currently six standing committees:

- Legislative/Policy
- Education-Training/Events
- Education-Outreach/Website
- Finance
- OFMA Conference Planning
- Membership/Nominations
- Awards/Scholarships

Participation in OFMA Committees is not limited to WMAO Members. If you are interested in participating in an OFMA Committee, please contact Stephen Moore at smoore@groveport.org.

During the annual Floodplain Management Conference, Ohio Floodplain Management Association (OFMA) recognizes communities, individuals and agency partners that help promote the best practices in floodplain management. **OFMA needs your help to identify communities and clients who demonstrate leadership for floodplain management, or implement innovative projects and activities to reduce flood risk.** We encourage you to nominate deserving peers and projects. Selected nominees will be recognized at the 2017 Floodplain Management Conference in August.

The OFMA nomination process is simple. Basic information about the nominees' merit and accomplishments, their contact information, and your relationship/perspective (concerning the nominee's worthiness) are what we need. Please consider completing a nomination form and provide brief supporting material to help the Award Committee to select the most deserving nominee.

The nomination form and information on where to submit are available from the OFMA web site at www.ofma.org. **Nomination DEADLINE is July 26, 2017**! Please direct any questions or suggestions to:

Cindy Crecelius, OFMA Awards and Scholarship Committee Lead
179 Baranof East
Westerville, Ohio 43081
Phone: (614) 891-1595
ccconsults.cjc@gmail.com

Research Highlights from State of Ohio Water Resources Center

The Ohio Water Resources Center is a federally authorized center situated at The Ohio State University. Below are highlights from an ongoing project conducted by Dr. David Costello, Assistant Professor at Kent State University. If you are interested learning more about our research projects see the Ohio Water Resources Center webpage at wrc.osu.edu

Dr. Costello's project titled "**Trace metal limitation of biofilm growth and metabolism: potential consequences for storage of nutrients in headwater streams"** attempts to address the unknown importance of limiting concentrations of trace metals on primary production in small streams draining into Lake Erie. This proposed research will provide important information about in-stream processing of nutrients in tributaries to Lake Erie.

Figure 1: *Dr. Costello's students installing trace metal diffusing substrate in streams.*

Small streams can be very efficient at slowing nutrient transport to downstream ecosystems by storing nutrients in biomass and potentially removing nitrogen and phosphorous through burial and nutrient transformations. The hypothesis of this research is that that low trace metal concentrations in eutrophic streams in Northwest Ohio limit biofilm growth, contribute to saturation of nutrient removal processes, and limit biofilm storage of nitrogen and phosphorous. After a water chemistry survey of twenty-six headwater streams in northeast Ohio, five streams with potential nutrient and/or trace metal limitation were chosen for biofilm growth limitation tests. Trace metal nutrient diffusing substrates increase nutrient and trace metal concentrations in a small area of the stream allowing for greater algal growth if nutrients or metals supplied by the cup cannot be found in the stream water (Figure 1). Algal biomass on the cups in these five streams was measured after 4 weeks of growth. Algal growth differed greatly among streams, but single element addition did not stimulate biomass

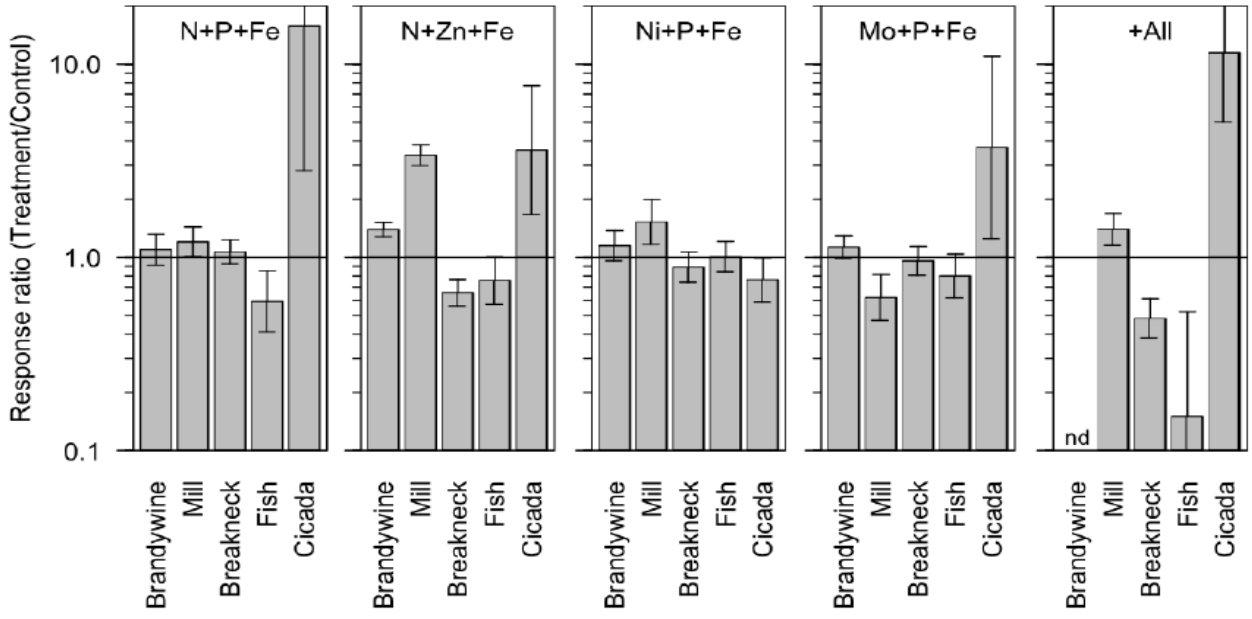


Figure 2: *Response of algal biomass (as chlorophyll a) to multi-element additions. Response ratios >1 indicate greater biomass with nutrient amendment relative to controls and ratios <1 had lower biomass relative to controls. Error bars indicate standard errors. nd = no data.*

growth as much as multi-element combinations (Figure 2). The multi-element additions show that trace metals (especially Zn) may be a pathway for promoting biomass growth in streams, which can increase nutrient removal rates and ultimately reduce or delay the export of macronutrients to Lake Erie. Given that controlling nutrient sources is a major technique for controlling HABs, management efforts that consider trace metals may be an important new tool for addressing nutrient load reduction goals.

Researcher Profile: David Costello received his BS from Hobart College in 2004 and his PhD in Biology from the University of Notre Dame in 2009. After finishing his PhD, Dave was a postdoc at the University of Michigan's School of Natural Resources & Environment. Broadly, Dave is interested in how human activities affect the functioning of freshwater ecosystems. Dave has interests in coupled biogeochemical cycles, ecotoxicology, and ecological stoichiometry.

Save the Date

WMAO / OWRC Luncheon Seminar

Dr. David Costello

October 18, 2017

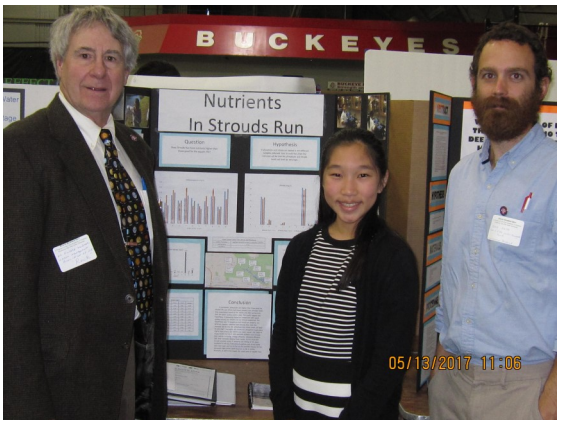
2017 State Science Day Awards

By **Rick Weber**, State Science Day Committee Chair

The 2017 State Science Day was held at The Ohio State University in French Field House, on Saturday May 13, 2017. Twenty-seven students requested to be judged for the two WMAO awards: 17 were in the lower 7th-9th grade category, and 10 were in the upper 10th-12th grade category. The Peter G. Finke Water Management Award in each grade category includes: a $250.00 check, a plaque, recognition in WMAO's "The Ohio Water Table" publication, and an invitation to the WMAO Annual Conference in November. Peter Soltys, Zach Smith, and Rick Weber did the judging this year for WMAO.

The WMAO 2017 State Science Day awardee in the lower grade category is **Tina Zhang**, an 8th grade student at Athens Middle School in Athens, Ohio. Tina's project was titled "Nutrients in Strouds Run." Tina researched the significance of nutrients to stream and lake ecosystems. She realized that nutrients are essential to sustaining life in the water environment, but also recognized the adverse health and ecological effects of an overabundance of nutrients. Tina's science project was to quantify the nutrient level in Strouds Run at ten(10) sampling locations upstream of Dow Lake. She hypothesized that the phosphate and nitrate levels will exceed the USEPA's ambient water quality criteria recommendations for rivers and streams in Nutrient Ecoregion XI for total phosphate (0.031mg/L) and total nitrate (1.4mg/L).

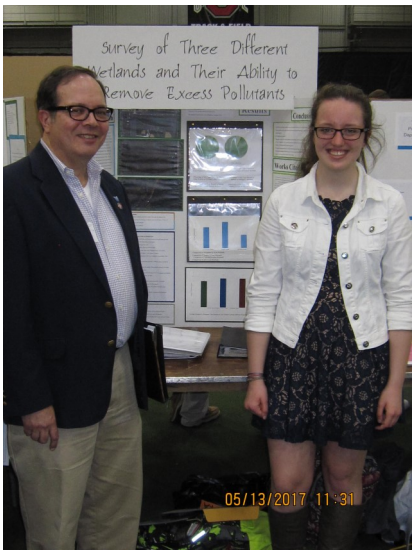
Tina preserved the water samples in a cooler while transporting them to the Ohio University Clippinger Lab. Aided by Dr. Dina Lopez, Tina used a spectrophotometer to obtain her results. Phosphate exceeded the water quality criteria, while the nitrate results showed a wide range of varience: from a low of 0.016mg/l to a high of 12.38mg/L. Tina gained valuable laboratory experience conducting this science project including sample preservation and calibration of lab equipment using field blanks. Tina's science teacher at Athens Middle School is Mrs. Stephanie List.



***Tina Zhang**, 8th grade, Athens Middle School; Judges Rick Weber and Zach Smith.*

The WMAO 2017 State Science Day awardee in the upper grade category is **Jordan M. Skates**, an 11th grade student at Pettisville High School in Pettisville, Ohio. Jordan's project was titled "Survey of Three Different Wetlands and their Ability to Remove Excess Pollutants." Jordan used three Fulton Co. wetlands for her science project. The first was a 5-year old constructed wetland located at her

high school. The second was a wetland (Nofiger's) put into wetland conservation about 20 years ago. The third was a wetland located at Goll Woods Nature Preserve, a remnant of the Black Swamp which covered a large portion of northwest Ohio before drainage and development altered much of the landscape. Jordan hypothesized that the youngest wetland, because of its species diversity, would filter more pollutants and excess nutrients, because she believed the older a wetland ecosystem becomes, less nutrients are available for plant growth, which ultimately would inhibit the wetland from pollutant and nutrient removal.



Jordan Skates, *11th grade, Pettisville High School; Judge Peter Soltys.*

Jordan began her field work by collecting and identifying plant species at each of the three wetlands. She then collected water samples for water quality analysis. The parameters analyzed were nitrate, phosphate, turbidity, and pH. Jordan collected soil at each site to determine soil type. Next she collected soil and water from each site to construct ecotubes out of pop bottles to simulate the environmental conditions at each wetland. These ecotubes were used determine the ability of the soil of each wetland to remove phosphorus. On these samples she also tested for dissolved oxygen. Jordan kept a detailed field and lab book to accurately record data. All results were listed in tables and graphed to make comparisons and conclusions.

Water quality of the three wetlands was similar with no significant difference in the nitrates, phosphates, turbidity, and pH. The averages of phosporus filtered though each wetland was very similar, no matter the age of the wetland. The results did not support her hypothesis. The age of a wetland does not affect the ability of the wetland to remove pollutants. However, Jordan demonstrated a thorough understanding of her project, composed an excellent report, and made effective use of the scientific method. Jordan's science teacher at Pettisville High School is Mrs. Donna Meller.

46th Annual WMAO Conference

Partnerships at the Confluence of Challenge and Opportunity

November 1 - 2, 2017

Crowne Plaza North, Worthington/Columbus, Ohio

Water resource management requires strong partnerships that can garner public support, secure financial resources, and produce action towards water protection. This can only happen at the confluence of people, communities, and innovative ideas. The 46th Annual Water Management Association of Ohio Annual Conference will explore the partnerships that connect our challenges with opportunities to result in high water quality in Ohio for today and future generations.

Agenda will be available in the early fall.

Register online at: www.wmao.org. CEU credit and qualification for Engineering and Surveying CPD offered.

Please consider becoming an exhibitor or conference sponsor! http://wmao.org/sponsors/ to register online as an exhibitor or sponsor.

WATER MANAGEMENT ASSOCIATION OF OHIO

8584 E. Washington St. #206
Chagrin Falls, OH 44023

330-466-5631, admin@wmao.org
Dana Oleskiewicz, Administrative Director

www.wmao.org

The Water Management Association of Ohio (WMAO) is the one organization dedicated to all of Ohio's water resources.

VISION: The Water Management Association of Ohio will be the most effective and respected independent water resources organization in Ohio.

MISSION: The Water Management Association of Ohio promotes the comprehensive understanding, conservation and multifaceted use of Ohio's water resources.

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