The Ohio Water Table

A Publication of the Water Management Association of Ohio

No. 143 / Quarterly

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. We fund State relevant water related research and efforts. Below highlights a collaborative effort between Dr. Zuzana Bohrerova, the Associate Director of the Ohio WRC, and local partners. If you are interested learning more about our other outreach efforts, please check out the Ohio Water Resources Center webpage at wrc.osu.edu.

In an information transfer project funded by the Ohio Environmental Protection Agency's Environmental Education Fund, the Ohio Water Resources Center collaborated with Friends of the Lower Olentangy River Watershed and the Ohio Chapter of the Sierra Club to implement a project titled **"Adopt Your Waterway,"** which aims to increase awareness and participation of individuals in water quality related issues. Educating citizens about how changes in a watershed impact water quality, collecting water quality data for rarely sampled tributaries, and training "champions" of the tributaries will help the residents to make science- based decisions about development of their local communities.

One of the program goals is to ensure long-term viability of citizen science involvement and a bottom-up approach for citizens to inform their neighbors about the stream quality. Therefore, we created a system where "trainers" (water quality specialists) educate interested citizen scientists in water quality monitoring of local streams with the goal of eventually becoming trainers themselves, while learning more about their environment and talking to their neighbors and friends about



Figure 1: Classroom Water Sentinel training.

water quality issues. Over 70 citizen volunteers were trained to monitor small Olentangy River tributaries using the Water Sentinel chemistry method of the Ohio Chapter Sierra Club and the macroinvertebrate evaluation method based on the Ohio EPA's Headwater Habitat stream quality monitoring program (Figures 1 and 2).

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President's Column

Alex Covert, WMAO 2016-2017 President



My oldest daughter is about to embark on a journey that will last the rest of her life (or until driverless cars become mainstream). I'm talking about the coming-of-age event known as driving. She's driven the occasional riding mower and has even took her grandparents golf cart out for a spin on the dusty roads of a campground near you. None of those compare, however, to the exhilaration that a teenager feels after getting her temporary drivers permit. She knows the rules of the road... in theory, but she doesn't have any actual experience and has no idea of all of the obstacles that will wonder, run, or roll into her path.

Likewise, when I became WMAO President in 2015, I didn't know how to proceed – not really. I had some idea of where I wanted to end up but I wasn't fully confident that I knew the "speed limit," if I could make a "U-turn", or when the next "rest area" was approaching. Instead, I climbed into the driver's seat and put it in drive. Together, the Board members and I steered WMAO towards distant destinations

and around a few obstacles. Sans the analogy, we've increased our focus on student participation in WMAO, improved relationships between WMAO and our divisions, and developed a new set of strategic goals with ways to achieve them. We've continued to grow –increasing our membership numbers, the breadth of water-related fields included in WMAO, and our financial stability.

I would like to think that I did more than put WMAO in cruise control and instead, that I helped maneuver this ever-moving organization from point A to point B. You see... that's the thing about learning a skill –the experience, itself, is the true teacher. I would like to thank the WMAO Board and membership for this wonderful opportunity. Come November 2nd, you'll be in good hands when I turn the wheel over to our next WMAO President, Craig Smith, Environmental Specialist, Ohio EPA, Division of Drinking and Ground Waters.

S. Alex. Covert

Ohio Applicator Forecast Helps Avoid Runoff Risk

By Emily Heppner, Environmental Education Coordinator, Ohio Department of Agriculture

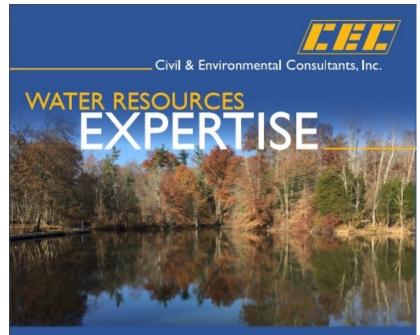
The Ohio Department of Agriculture (ODA) launched a new Web map this summer, the <u>Ohio Applicator Forecast</u>. The online map is designed to help nutrient applicators identify times when the weather-risk for applying is low. "ODA firmly believes science and technology must be at the forefront of all water quality issues and these new and innovative tools are impactful steps." said ODA Director David T. Daniels. "The agricultural community continues to take the necessary steps to maintain agricultural productivity, while protecting our natural resources and reducing nutrient runoff to improve water quality in Lake Erie and surrounding waterways."

The risk forecast is created by the National Weather Service and takes snow accumulation and melt, soil moisture content, and forecast precipitation and temperatures into account. The chances of surface runoff in the next 24 hours are displayed on the overview map of the state. If you zoom to street level, seven days of weather conditions and runoff chances are predicted. Risk is grouped into 3 categories: Low, Medium, and High. When the risk is Medium, it is recommended that the applicator evaluate the situation to determine if there are other locations or later dates when the application could take place.

"The National Weather Service is excited to work with Ohio in their efforts to help farmers reduce nutrient runoff across the Midwest," said Brian Astifan, the Development and Operations Hydrologist with the National Weather Service Ohio River Forecast Center in Wilmington, Ohio. "We believe Ohio's partnership with several federal agencies and educational institutions to develop this decision-support tool will benefit farmers and ultimately work towards improving Ohio's water quality." Visit ODA on the Web for more information about the Ohio Applicator Forecast: <u>http://www.agri.ohio.gov/divs/plant/OhioApplicatorForecast/oaf.aspx</u>



Figure 2: Hands-on outdoor macroinvertebrate training.



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Contact:

Matt Gramza, P.E., CFM mgramza@cecinc.com 800-759-5614

Ohio Offices: Cincinnati, Columbus, Toledo

www.cecinc.com locations nationwide Currently, eleven Olentangy River tributaries are monitored by thirty-eight active volunteers, with two sites per tributary. Last year, most of the sites

had a fair to poor macroinvertebrate index throughout the year and poor water chemistry, with average conductivity values higher than 600 uS (many had values higher than 1000 uS), seasonally high phosphates, nitrates, and other poor water quality indicators. Many

"Citizen scientists indicated in a survey that they do talk to their neighbors about their monitoring work."

volunteers continue to be involved in the program. Some of them are monitoring their location for a third consecutive year. Citizen scientists indicated in a survey that they do talk to their neighbors about their monitoring work. FLOW, Sierra Club and the Ohio Water Resources Center are committed to continuing this program and partnership, and we are looking for better ways to communicate the results to educate citizens about their streams and assure long- term sustainability of this program.

Project Collaborators: Ohio Water Resources Center is the federally-authorized and state-designated Water Resources Research Institute for the State of Ohio. We promote innovative, water-related research in the State of Ohio through research grant competitions, coordination of interdisciplinary research proposals, and educational outreach activities. FLOW (Friends of the Lower Olentangy Watershed) is a non-profit organization whose mission is to keep the Olentangy River and its tributaries clean and safe for all to enjoy, through public education, volunteer activities, and coordination with local decision-makers. The Sierra's Club Ohio Water Sentinel Program seeks to educate, engage, and empower volunteers to restore, improve, and protect Ohio's waterways.

Ohio Floodplain Management Association



Division Updates

By Stephen Moore, OFMA President

Save the Date -

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

<u>Membership</u> - Please remember when filling out your 2018 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. <u>2017 CFM Exams include:</u>

November 8, 2017, 1:00 pm - 4:00 pm, Proctor: Todd Richard

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 <u>cfm@floods.org</u> Exam information and study guide may be referenced at: <u>www.floods.org</u>.

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

Manufactured Homes Commission

House Bill 49, the Ohio Operating Budget, included a provision to consolidate several boards and commissions.

Included in the bill was the transition of the Manufactured Homes Commission to the Ohio Department of Commerce, effective January 21, 2018.

At this time who will be responsible for the floodplain regulation responsibilities for manufactured homes is still being discussed. The Department of Commerce is working with all stakeholders to ensure a smooth transition. OFMA will stay involved and keep you up to date on this issue. We will place any updates on our website at <u>www.ofma.org</u> and you can also obtain updates at the Department of Commerce website at <u>www.com.ohio.gov</u>.

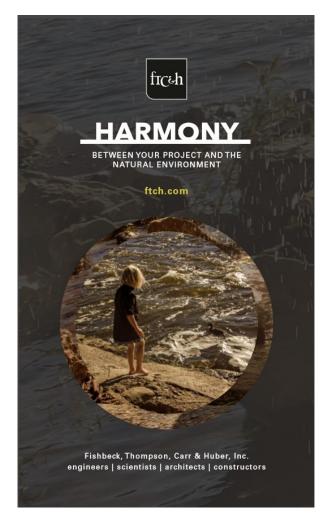


OFMA Annual Conference

The Annual OFMA Conference was held on August 24 & 25, 2017 at the Doubletree Hotel in Columbus.

Scholarships to attend the conference were presented to: Jim Fox, Butler Co.; Cathy Berg, Ashland SWCD; Max Callahan, West Carrollton City Engineer; Aaron Moeller, Mercer Co. Engineer's Office; Dave Kulcsar, City of Brooklyn; James Brinegar, City of Centerville City Engineer; Mike Spry, City of Cincinnati; Jay Fisher, Licking County; and Ben Carpenter, Perry Co.

OFMA recognized Jill Lengler, Tuscarawas County Planning Director for the Innovation in Floodplain Management Award. She provided leadership and built collaborative partnerships to implement a hazard mitigation project that acquired flood damaged properties, and developed risk-reduced recreation opportunities. Mike Mihalisin, Member-at-Large was presented the OFMA Distinguished Member Service Award. He was recognized by his peers and fellow Board members for his years of service and strong leadership in activities helping to achieve OFMA's mission.





Alicia Silverio giving a presentation to attendees.



Cindy Crecelius, OFMA Secretary.



Tim Beck, our IT guru.



Jill Lengler, award recipient.



Mike Mihalisin accepts an award presented to him by *Stephen Moore,* OFMA President.

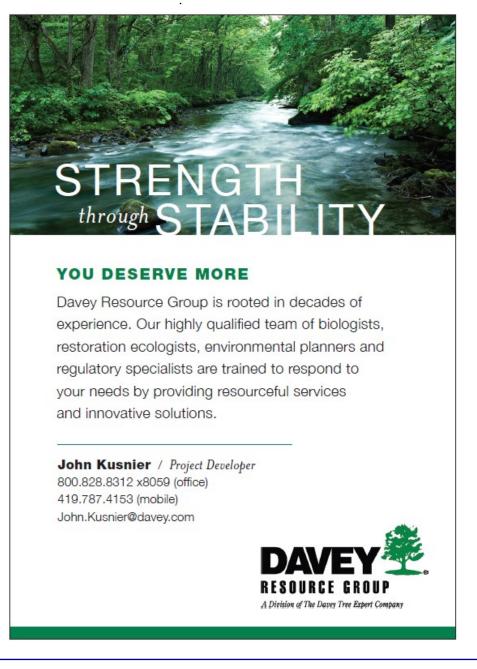


Austin Prokup was the recipient of the 2017 WMAO Scholarship of \$1,000. He is a Senior at Ohio State University, completing a degree in Civil Engineering.

Dear Water Management Association of Ohio,

Thank you for your generosity regarding a scholarship I recently received through the Columbus Foundation. As a fifth year Environmental Engineering student at Ohio State, the final year is a mix of emotions and the beginning of many new experiences. This scholarship helps a great deal in allowing me to focus on this transition to the professional world as a young engineer and finish my college career strong. It allows me to more deeply and fully devote myself to my studies, extracurriculars, and the freedom from worry as to how I will pay for my final year of schooling. I look forward to a career of creating and preserving one of our most precious and valuable resources: clean water.

> Many Thanks, Austin Prokup





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.

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

Please consider becoming an exhibitor or conference sponsor! Visit http://wmao.org/sponsors/

to register online as an exhibitor or sponsor.

		he Confluence of Challeng	<u> </u>	
	•	dnesday, November 1, 1		
8:00 - 8:30	Registratio	on, Coffee, and Continental Brea	kfast - Foyers 1 and 2	
8:30 - 10:00	Welcome and Introduction: Kim Shaffer	r, Conference Chairand Alex Covert, WMA	O President	
	Keynote Address: Partnering for Wetla	nd Conservation Josh Knights, The Nat	ure Conservancy	
10:00 - 10:15		Break - Foyers 1 and	2	
	Concurrent 1 - Ballroom 1 & 2	Concurrent 2 - Ballroom 3	Concurrent 3 - Ballroom 4	Salon B/C
	Ground Water	Ohio Lake Nanagement Society - OLNB		
10:15 -10:45	Evaluating Risks in a Source Water Protection Area - Part II: Refining the Priority Setting Approach and Incorpo- rating Risk Mapping Aaron Colson, City of Dayton Department of Water	Opportunities for Improved Nutrient Management in Watershed Planning Jordan Rofkar, Hull & Associates, Inc.	Dam Breach Modeling - 2D or not 2D Matthew Gramza, Civil & Environmental Consultants, Inc	Lake Erie Area Research Network (LE ARN)
10:45-11:15	Private Well Education Expanded Through Partnerships Cindy Brookes, WSOS CAC, Inc/Great Lakes RCAP	Ecoregional Characteristics Affecting the Probability of Dominance of Planktothrix spp. in the Phytoplankton of Ohio Lakes and Reservoirs John Beaver, BSA Environmental Services, Inc.	Bolivar Dam Major Rehabilitation Project Jeff Maynard, U.S. Army Corps of Engineers	Meeting
11:15 - 11:45	cal dynamics in three, geochemically-	Identifying Land Management Strategies for Phosphorus Reduction through Modeling of Historical Water Quality Trends Anna Apostel, The Ohio State University	Dam Safety Emergency Action Plans (EAP) & Inundation Mapping Melissa Menerey, Ohio Department of Natural Resources	
12:00 - 1:00	Awards Lun	cheon, Vendor Challenge Drawi	ng 1 - Ballrooms 3 and 4	
	Environmental Policy	Ohio Lake Management Society - OLMB	Climate Change	
1:15 - 1:45	tion General Permits for Ohio	Informing Drinking Water Intake and Treatment Managers by Observing Diel Vertical Distribution and Migration of HABs Eva Kramer, University of Toledo Lake Erie Center	Measuring Methane Production and Emissions in a Peat Bog in Ohio with Fluctuating Water Level: Comparison of Disturbed vs. Undisturbed Areas. Rey Camilo, The Ohio State University	LEARN Meeting
1:45 - 2:15	Ecological Sanitation: Charting a Policy Pathway Forward - A Review of Land Application of Septage in Ohio Ben Howard, John Glenn College of Public Affairs	Harmful Algal Bloom Monitoring of Inland Lakes Using Satellite Imagery Ruth Briland, Ohio EPA	Ice Jam Flooding in Changing Climate Suresh Sharma, Youngstown State University	
2:15 - 2:45	Process – A Platform for Partnership Melinda Harris, Ohio EPA	OH BUOY! (Fluoro)probing cHABS in Western Lake Erie and the Maurnee River Using in-situ and In-vivo Technology Douglas Kane, Defiance College	Climate Change Impact of Future Streamflows of Great Miami River Suresh Sharma, Youngstown State University	
2:45 - 3:15		Break - Foyers 1 and	2	
	Mineral Resource Nanagement	Ohio Lake Nanagement Society - OLNB	Lake Erie Area Research Network	
3:15- 3:45		The Study of Tappan Lake's Water Quality Monitoring Influence in its Community, Through the Collaboration of the Government, the Academia and the Private Sector Fernanda Craig, Muskingum Watershed Conservancy District	Benefits and Opportunities of LEARN: The Lake Erie Area Research Network Emily Burbacher, Ohio Sea Grant	Careers in Water Resources: Professiona and Student Networking Event
3:45 - 4:15	20 Years of Partnerships & Results: the Huff Run Recovery Part B Marissa Lautzenheiser, Rural Action	Using Smart Monitoring to Meet the Challenges of Wastewater Operators Sivan Cohen, Ayyeka	Single use plastics in the NEO area Jill Bartolotta, Ohio Sea Grant College Program	
4:15 - 4:45	Appalachian Ohio Clean Watershed Initiative (AO CWI) ArcGIS Online Watershed Planning Tool: Using Data to Foster Partnerships to Improve Water Quality across Ohio's Coal Bearing Region Jen Bowman, Ohio University's Voinovich School	Alternatives to Open-Lake Disposal of Dredged Sediment David Emerman, Ohio Lake Erie Commission	Lake Erie Algae, Nutrient Loading, and Current Research Efforts Chris Winslow, Ohio Sea Grant	
		Reception & Poster Session - Fo		

Partnerships at the Confluence of Challenge and Opportunity

Thursday, November 2, 2017

	Thu	rsday, November 2,	2017	
3:00 - 8:30	Regist	ration, Coffee, and Breakfa	st - Foyers 1 and 2	
	Concurrent 1 - Ballroom 1 & 2	Concurrent 2 - Ballroom 3		Salon B/C
	Partnership Building	Stormwater	Ohio Watershed Professionals Association - OWPA	
3:30 - 9:00	The Challenge of HABs in a Drinking Water Source Create Opportunity for Multi-Agency Cooperation Edward Ptau, Hull & Associates, Inc and John Watkins,	The "Gray Area" of Green – Where Design Meets Public Policy Karl Mackenbach, ms consultants, inc	Coupling Ecosystem Restoration to Water Quality Improvements in the Wolf Creek Watershed Ryan Jackwood, The University of Toledo	
9:00 - 9:30	Examples of Source Water Protection Efforts in Southeastern O hio Steven Saines, Ohio EPA	Evaluation of Long Term Performance of Retrofit Rain Gardens: Hydrology and Hydrocarbons Abigail Tamkin, The Ohio State University	What We Know About Engaging Farmers in Watershed-scale Water Quality Initiatives Joe Bonnell, The Ohio State University	
9:30 - 10:00	Community Backyards Program, Jennifer Fish, Franklin Soil and Water Conservation District	Are You Sinking or Swirrming - Partners are a Lifesaver John Kusnier, Davey Resource Group	Ohio EPA Partnering for NPS Implementation Strategies Rick Wilson, Ohio EPA	
0:00 - 10:15		Break - Foyers 1 a	md 2*	
	Education	Drinking Water	Stream Restoration	Conservanc
10:15 - 10:45	Out of the Classroom and into the Field: Developing a Groundwater Study for a Reclaimed Strip Mine through a Partnership between Academia and the Business Community Elizabeth Kline, Zane State College	Visualizing the effects of changes in reservoir gate operation Branden Von Ins, USGS	Designs that Drive the Success of Stream Mitigation Banks Joshua White, Civil and Environmental Consultants, Inc. (CEC)	Districts Neeting
10:45 - 11:15	Time Savings with ESRI Collector for Stormwater Management Chad Boyer, MS Consultants, Inc.	Advanced Technologies Help Predict Life of Reservoirs Chris Weaver, City of Columbus - Division of Water	Depaving Paradise: Community- based Partnerships to Improve Water Resources Jane Goodman, Cuyahoga River Restoration	
11:15 - 11:45	Kinetics of a UV LED H2O2 AOP Reactor and Potential for Application in a Net Zero Water Program John Stubbs, Air Force Institute of Technology	Improving Drinking Water Quality Using Granular Activated Carbon at the Westerville Water Plant Richard Lorenz, City of Westerville	Partnering to Protect Ohio's Giant Salamander, the Eastern Hellbender Gregory Lipps, The Ohio State University	
2:00 - 1:00	Lunch, WMAO Annua	Meeting, Drawing 2 for Ve	ndor Challenge - Ballroom 3	and 4*
:00 - 1:30	WIMAO Div	r <mark>ision Annual Meetings</mark> or V	Vater History Challenge	
	Fisheries and Fish Ecology	Waste Water	Nutrient Management	04 in 146 Aug
:30 - 2:00	Growth Potential and Mortality of Largemouth Bass in Lake Erie's Western Basin Alex Benecke, Ohio Division of Wildlife		Contribution of Soil Erosion to Ohio Agricultural Surface Runoff Phosphorus Shane Whitacre, The Ohio State University	Ohio Water Resources Committee Coordinating Weeting
2:00 - 2:30	Understanding the Effects of Altered Visual Environments in Lake Erie Fishes. Chelsey Nieman, The Ohio State University	Microbial Ecology of Sand Bioreactors for Aerobic Treatment of High Salt Content Wastewater Kristen Conroy, The Ohio State University	Revised Ohio Phosphorus Risk Index Elizabeth Dayton, The Ohio State University	
2:30 - 3:00	Big Darby Creek Water Quality Survey – A Story of Successful Action Andrew Phillips, Ohio EPA	Innovative Planning and Design at the Miamisburg WRF for Compliance and Wet Weather Improvements Steven Reese, Hazen and Sawyer	Nutrient Mass Balance for Selected Ohio Watersheds Dale White and Josh Griffin, Ohio EPA	
3:00 - 3:15		Break - Foyers 1 a	in d 2*	
):15 - 4:45	Ice Cream Social, Water-rek	ated mobile apps, Drawing	3 for Vendor Challenge - G	rand Pavilio
	*Visit the Ohio Emergency Ma from 9:45	nagement Agency Tornado S to 10:30, 11:40 to 1:40, or 2:		ot,

	46th Annual WMAO Confer nerships at the Confluence of Challeng November 1 - 2, 2017 Crowne Plaza North, Worthington/Co	e and Opportunity		White Weiter Management Association of Ohio
REGISTER TODAY!	lease register online*: OR <u>ww.wmao.org</u> (use drop down enu for member, emeritus, and student rates) MasterCard, Visa, Discover, AMEX, eCheck, by purchase order or invoice.	Scan and forward form to: Mail in registration form: WMAO - Conference 8534 E. Washington St. #200 Chagrin Falls, OH 44023		Questions? Contact: Dana Oleskiewicz 330-466-5631 admin@wmao.org
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330-466-5631, <u>admin@wmao.org</u> 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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