

The Ohio Water Table

A Publication of the Water Management Association of Ohio

No. 133 / Quarterly



American Council of Engineering Companies (ACEC) Honors John R. Douth Upground Reservoir

By Ken Ricker, P.E.

ms consultants, inc. has received two awards for its work on the John R. Douth Upground Reservoir. The American Council of Engineering Companies (ACEC) of Ohio presented ms consultants, inc. with an Outstanding Achievement Award and ACEC National honored the project with a National Recognition Award.

John R. Douth Upground Reservoir is an 850-acre reservoir located in Delaware County, Ohio. With its impressive size, this reservoir is the largest upground-lined reservoir in the nation and is the longest Class I Dam Structure in Ohio. The John R. Douth Upground reservoir



holds 9.3 billion gallons, serving customers of the City of Columbus and Del-Co Water Company. As part of a long-term, multi-phase project, the John R. Douth Upground Reservoir is the first, and largest, of three planned reservoirs for the City of Columbus. This phase of the project included the reservoir, a 150-foot inflatable weir and intake on the Scioto River, a 120-MGD raw water pump station, and more than 4 miles of 72-inch interconnecting raw water line.

Work began on these projects in 2011, was substantially complete in 2013, and the reservoir was filled in May 2014. The reservoir was official dedicated and renamed John R. Douth Upground Reservoir on September 30, 2014 in honor of the former Columbus Water Administrator. For more details on the project, visit

www.msconsultants.com.

Inside this issue:

<i>President's Column</i>	2
<i>WMAO/WRFO Luncheon Seminar</i>	3
<i>Research Highlights from State of Ohio Water Resources Center</i>	4
<i>Ohio 2015 Stormwater Conference</i>	5
<i>WMAO Conference Dates and Abstract Submittal</i>	6
<i>Rural Action Invites Community to Watershed Planning Meetings</i>	6
<i>2015 WMAO Golf Scramble</i>	8
<i>WMAO Advertisement</i>	10
<i>WMAO Membership Renewal</i>	11
<i>WMAO Board of Directors</i>	12

Points of Interest:

- *Ohio Water Resources Council funds research to explore water quality run-off from green infrastructure.*
- *Rural Action works with communities in Appalachia Ohio to garner support towards watershed planning.*
- *Upcoming events; Ohio Stormwater Conference in May, WMAO Golf Scramble scholarship fundraiser in June, and WMAO Conference in November.*

President's Column

Boris E. Slogar, P.E.



Water Resources – Often Taken for Granted

The first day of spring just passed and I'm enjoying a Sunday with temperatures in the 30's. Add to that the fact that my March Madness brackets imploded over the weekend and I find myself in sore need of some warm temperatures and a beach to enjoy. I'm actually looking forward to mowing the lawn and pulling weeds. My problems really pale in comparison to so many other issues out there that really matter.

I recently read an article in the Canton Repository entitled "*UN: World could have water shortfall by 2030*". The author is an AP writer named Katy Daigle that wrote, "The world could suffer a 40 percent shortfall in water in just 15 years unless countries dramatically change their use of the resource, a UN report warned Friday." With the world's population expected to grow to 9 billion by 2040, the article reported that the UN predicts that global water demand will increase 55 percent by 2050.

Most alarming was a statement referring to the fact that, "in many countries including India, water use is largely unregulated and often wasteful", going on to say that, "at least 80 percent of India's population relies on groundwater for drinking to avoid bacteria-infested surface waters." Further, "currently, about 748 million people worldwide have poor access to clean drinking water."

California is in the midst of a multi-billion dollar program to mitigate the devastating effects of drought. The City of San Diego is spending nearly \$2 billion to construct a desalinization plant and is also working on collecting and pumping the effluent from the city's three main wastewater treatment plants up into reservoirs in the mountains above the city to recycle and reuse that resource.

We usually don't have that problem throughout Ohio. There are two of the first and largest flood control systems in the nation – one in the Dayton area managed by the Miami Conservancy District and the other in east-central Ohio managed by the Muskingum Watershed Conservancy District and the US Army Corps of Engineers. We find ourselves usually dealing with excess water and I suppose I would much rather deal with that issue than the opposite.

Traditionally here in Ohio water quantity issues have dominated water quality issues. Recently though, there has been a strong focus on north-west Ohio most significantly brought to light by drinking water issues in Toledo this past year. As water resource professionals, we all know that challenges to our most precious resource will continue to unfold.

"...UN predicts that global water demand will increase 55 percent by 2050."

Look to WMAO's water luncheons throughout the year for informative presentations from speakers working on these very issues. Remember that our annual conference in November is a forum filled with professionals presenting and discussing these very topics. Soon our conference committee will request speakers to provide presentation abstracts, consider sharing

your knowledge and networking with water resource professionals from all over the state. If it has anything to do with water, it falls under the umbrella that WMAO represents.

Here's to warm weather and clean and plentiful (but not too much) water.

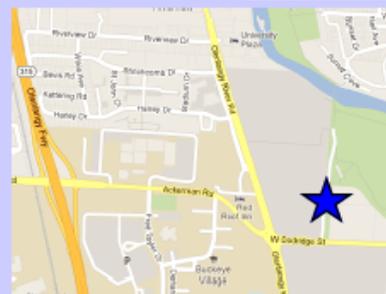
A Water Luncheon Seminar



Presented by:
The Water Management Association of Ohio
and
The Ohio Water Resources Center

April 15, 2015; 11:30 a.m. - 1:00 p.m.

Wilma H. Schiermeier Olentangy River Wetland Research Park,
The Heffner Building, 352 Dodridge St. Columbus, OH 43202



From St. Rt. 315, exit east onto Ackerman Rd, continue past Olentangy River Rd onto W. Dodridge St, then left into Park driveway.

Unpaved rural roads and stream water quality

Elizabeth Myers Toman, PhD, Visiting Assistant Professor,
Ohio State University, School of Environment and Natural Resources

The development of shale oil and gas from deep reserves such as the Utica--Point Pleasant formation in eastern Ohio will require the construction and heavy traffic use of rural roads. A single well may require more than 2,000 trucks to move the equipment, water and constitutes required for hydraulic fracturing. Unpaved aggregate (gravel) roads have shown to produce and transport sediment to surface water bodies, especially with high volumes of traffic. Research at the OSU OARDC Eastern Agricultural Research Station (EARS) in Noble County, Ohio suggests that a road network with normal farm use could contribute more than 25 % of the sediment load in the watershed. Sediments carry metals, chemicals, and nutrients that when released may disrupt aquatic microbial communities and encourage the growth of toxic microbes. Stream water samples at EARS show an increase in *E. coli* bacteria counts with increased turbidity. The studies at EARS suggest that the increased use of rural roads by traffic for the development of shale oil and gas may have detrimental impacts to human and ecosystem health.

Please register by April 10, 2015. Late or on-site registrations cost \$5 extra and are not guaranteed a meal. For registered engineers who need Professional Development Hours (PDHs), this presentation offers 1 PDH.

WMAO Member (\$15) Nonmember (\$18) Student (\$7) Special meal? _____

Name _____

Organization _____

Address _____

City _____ State _____ Zip _____

Phone _____ Email _____

Please send form and check to: WMAO-Luncheon, 8440 E. Washington St. #206, Chagrin Falls OH 44023.

OR, register online with a credit card at: www.wmao.org

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. Below are highlights from a recently completed project conducted by Dr. Ishi Buffam, Assistant Professor in the Department of Biological Sciences and Dr. Dominic Boccelli, Assistant Professor in the College of Engineering and Applied Science at the University of Cincinnati. If you are interested learning more about our research projects please visit the Ohio Water Resources Center webpage at wrc.osu.edu

This project titled “**Assessment of a Novel Application of Biochar to Improve Runoff Water Quality from Vegetated Roofs**” aims to improve nutrient retention of vegetated roofs using biochar (Figure 1). Vegetated roofs are becoming increasingly more important as a part of green-engineered solutions for stormwater management in urban areas.

The integration of biochar is a potential breakthrough in reducing water quality degradation by green roof runoff, but very little is known about the sensitivity to variation in the proportion of the biochar amendment, or the dynamics of sorption kinetics or equilibria. Our project has demonstrated that a biochar amendment substantially decreases ammonium leaching from green roof substrate, by up to 75% for the high biochar (14% w/w) treatment (Figure 2). The high biochar treatment also doubled water holding capacity of the substrate, a finding with great significance for green roof design for stormwater runoff reduction. This is of particular note because on a per mass basis, biochar is no more expensive than typical commercially available green roof substrate mixes. The patterns of breakthrough curves also give insight into likely physicochemical mechanisms of nutrient binding. Follow-up work using different sorption breakthrough models and isotherms are underway, to further explore the sorption/desorption dynamics. The research demonstrates the water quality improvements associated with a biochar-amended green roof, but will also result in a modeling component that can be used within an integrated assessment framework both within and beyond the Ohio River Valley.

Vegetative roofs are becoming increasingly more important...



Figure 1. Leachate from laboratory columns of green roof growing media with varying amounts of biochar integrated, ranging from no biochar (left) to high biochar (right). Note the reduction in color due to biochar binding organic matter in the water.

Researcher: Dr. Ishi Buffam is an ecosystem ecologist and aquatic biochemist. He uses a combination of field vegetation and soil surveys, lab-based water and soil chemistry/biogeochemistry analysis, empirical modeling and GIS-based modeling to evaluate the relationship between landscape/watershed characteristics and surface water chemistry and biotic communities. Many of his current projects are centered on quantifying ecosystem services and potential disservices associated with green (vegetated) roofs, since little is known about the direct biogeochemical functions of green roofs.

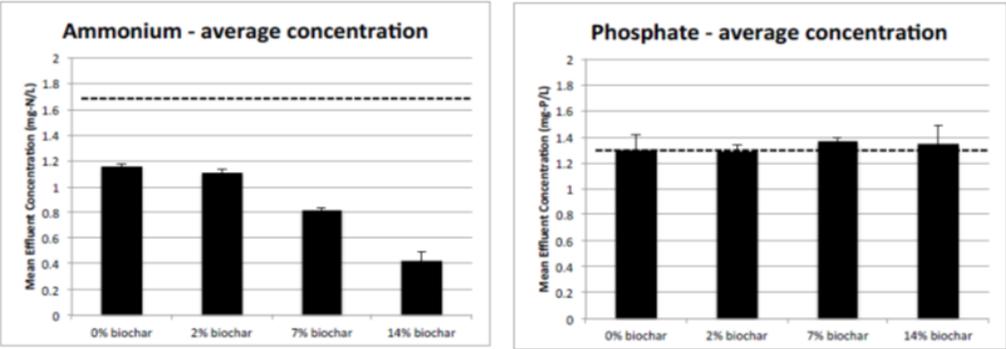


Figure 2. Volume-averaged mean effluent nutrient concentrations for the entire 5-day experiment, for columns varying in biochar % integrated into green roof substrate. Error bars represent standard error of the mean for duplicate trials. The horizontal dotted lines represent the volume-averaged influent “precipitation” concentration in the experiment. Substrate alone resulted in a 34% reduction in NH_4^+ , with higher biochar resulting in a reduction of up to 76% of NH_4^+ . In contrast, PO_4^- fluxes were not affected significantly by either substrate alone, or biochar amendments.

Ohio 2015 Stormwater Conference

The Ohio Stormwater Association in partnership with the Tinker's Creek Watershed Partners are proud to host the annual Ohio Stormwater Conference. In its eighth year, this annual conference has grown to be the 2nd largest stormwater conference in the nation. Last year's event had 650 attendees from throughout Ohio, as well as other states, who attended the two day conference. This year's event is shaping up to be larger than last years. Registration is now open and currently registration is over 500 attendees, with 88 exhibitors, 77 speakers (6 simultaneous tracks) and 2 sold out tours.

The 2015 Ohio Stormwater Conference is dedicated to advance the knowledge and understanding of comprehensive stormwater management for those dealing in all aspects of planning, design, implementation and regulatory compliance. This year's conference is being held May 6-8, 2015 at the Kalahari Resort and Conference Center located in Sandusky, Ohio. The conference will provide updates on environmental issues, new technologies, regulatory information and pollution prevention. The 2015 Ohio Stormwater Conference is a great opportunity to strengthen your skills and knowledge in an intensive workshop setting with other colleagues. For more information, please visit our conference website at www.ohiostormcon.com. Hurry and register before we sell out!

In addition to the annual conference, the Ohio Stormwater Association is planning on holding several workshops this fall throughout the state to discuss stormwater management and the new Ohio EPA requirements under their NPDES permit for MS4s. We will be providing information on these workshops soon, please visit our website for information, www.ohioswa.com.

We look forward to seeing you at our events.



Premier Stormwater Event in Ohio

- One of the nations largest stormwater conferences with average attendance over 600.
- Over 75 programs with national, state and local speakers.
- Tours
- EnviroCert Certification Review Classes and Exams
- Endless Networking Opportunities

May 6-8, 2015. Sandusky, Ohio
Kalahari Resort and Conference Center

Get more information

Website: www.ohiostormcon.com

Email: hstark@ohioswa.com

Registration Now Open

Save the Date!

WMAO 44th Annual Meeting and Symposium

MOVING THE NEEDLE: Policies, Programs, and People that Drive Change

November 17 & 18, 2015

Doubletree Hotel - Columbus Worthington,

175 Hutchinson Ave., Columbus, OH

Abstracts are now being accepted. See [flyer](#) for more information.

Rural Action invites community to watershed planning meetings

By Michelle Shively, Sunday Creek Watershed Coordinator

Rural Action, a community based organization, is working to better understand community water resource needs as part of a regional watershed planning initiative. Rural Action's work is focused on communities within the Ohio River system. Partners for this initiative include Ohio University's Voinovich School and the Raccoon Creek Partnership, along with the Ohio Department of Natural Resources, Ohio Environmental Protection Agency, among others.

Community members, natural resource professionals, and local governments are invited to participate in the planning process by sharing water interests, needs, and concerns in their communities. Meetings will be held throughout the Ohio River Basin, beginning with an overview of the planning process and concluding with a question and answer session with watershed professionals. All participants will have the chance to submit comments and refreshments will be served.

All interested community members, local government officials, and representatives from soil and water districts are encouraged to attend. Meetings will be held across the Ohio River Watershed at the following locations:

Rural Action is a membership based organization working to build sustainable local economies in Appalachian Ohio.

Canton: April 8th at 6 pm; Kent State University Stark Library at 6000 Frank Ave NW, North Canton, OH 44720

Cambridge: April 13th at 6 pm; Cambridge Crossroads Library at 63500 Byesville Rd, Cambridge, OH 43725

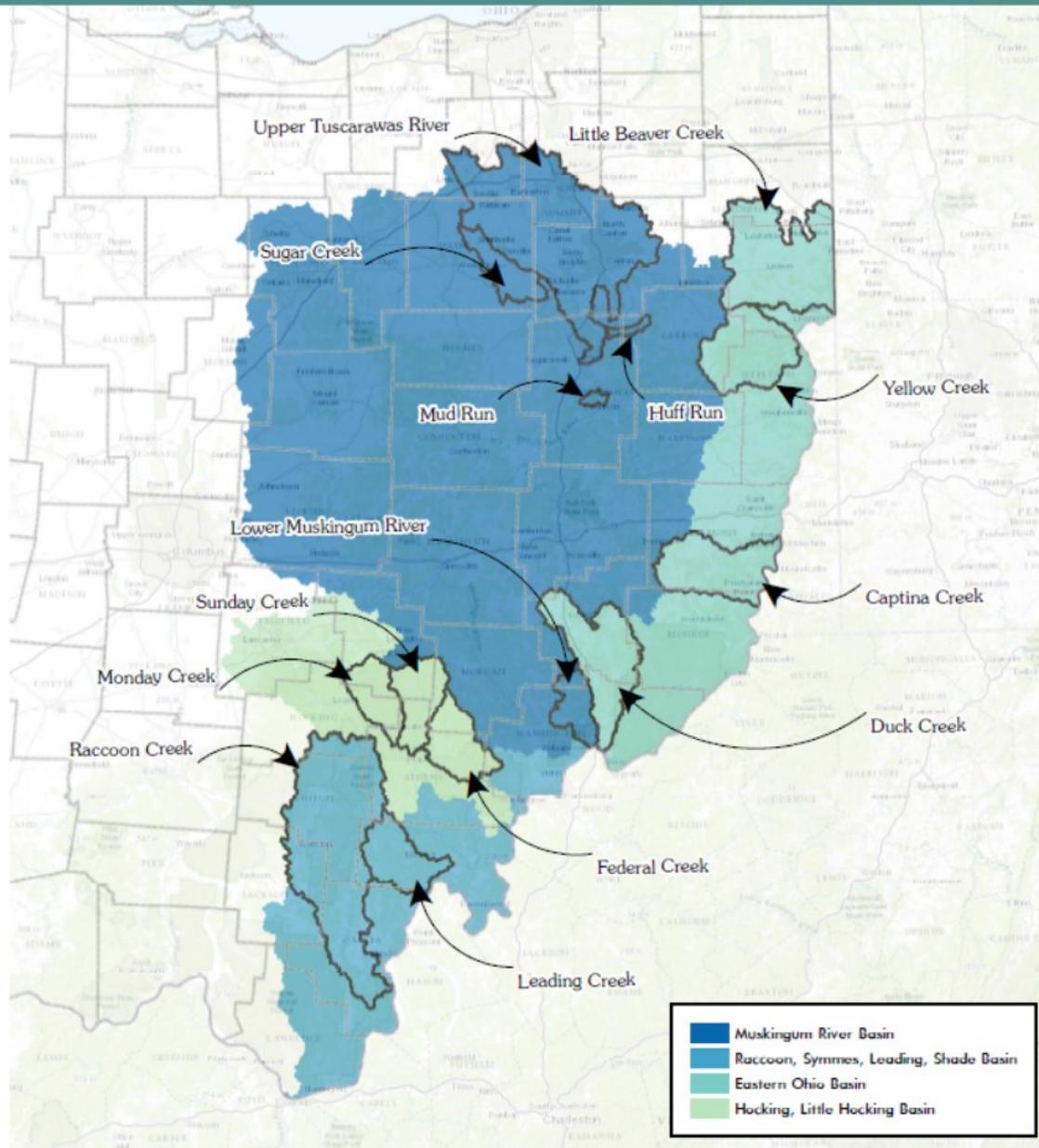
Athens: April 13th at 6 pm; Athens Public Library at 30 Home St., Athens, OH 45701

Jackson: April 21st at 6 pm; Jackson City Library at 21 Broadway St., Jackson, Ohio 45640

Marietta: April 28th at 6 pm; Marietta Public Library at 615 Fifth St., Marietta, OH 45750

If you are unable to attend a meeting, but are interested in adding your voice to the conversation, please take the survey online at www.ruralaction.org/watersurvey.

Ohio River Basin Target Watersheds Map



Rural Action is a membership based organization working to build sustainable local economies in Appalachian Ohio. Rural Action has been involved in watershed restoration work since 1994, historically in the Monday Creek, Sunday Creek, Federal Creek, Huff Run and Mud Run watersheds. For more information about Rural Action's work, visit www.ruralaction.org. For more information about the regional meetings and planning process, contact Michelle Shively at (740) 767-2225 or michelle@sundaycreek.org.



The Water Management Association of Ohio and the Water Resources Foundation of Ohio proudly announce the

15th Annual WMAO Scholarship Golf Scramble
Friday, June 19, 2015 at 9:30 a.m.
National Golf Links (South Charleston, OH)

You are cordially invited to attend the Fifteenth Annual WMAO Scholarship Golf Scramble to benefit the WMAO Scholarship Fund administered by the Water Resources Foundation of Ohio (WRFO). The cost is \$60 per person or \$240 per team and includes green fees, cart, beverages, burgers & brats after the round and prizes. We encourage teams or individual golfers of all skill levels to register and participate.

Hole Sponsorship is \$50

Event Sponsorship is \$150

The Scholarship Fund value continues to increase from the generous supporters of WMAO through the registration fees, and hole and event sponsorships. Sponsors will have a sign with their company name and logo on one or more of the 18 holes. All Sponsors will be recognized at the opening and closing ceremonies. All sponsorship monies go directly to the scholarship fund established in 2003 with the Columbus Foundation. Contributions of any amount are greatly appreciated and tax deductible. (Sponsorship does not include costs for golf).

Contact Jim Shoemaker (City of Dayton) at 937-333-3727 or 937-545-5072 if you have any questions.

Make checks payable to WRFO (no cash or credit cards) and remit Registration/Sponsorships by June 15, 2015 to:
WMAO Scholarship Golf Scramble
8440 E. Washington St. #206
Chagrin Falls, OH 44023

National Golf Links:

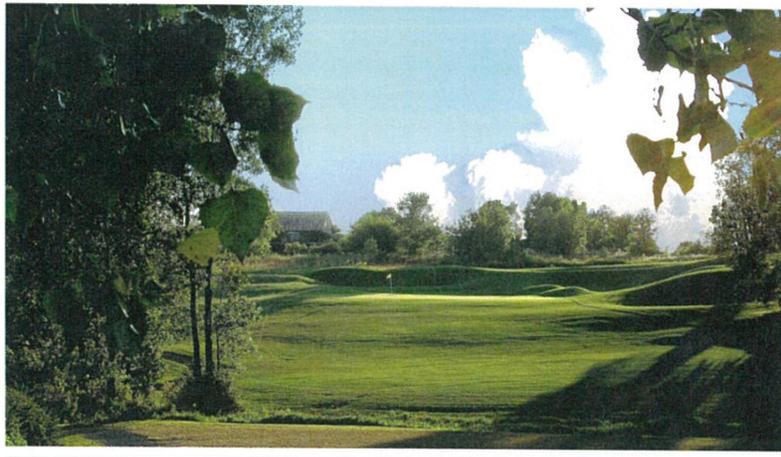
276 Clubhouse Drive, South Charleston, OH 45368
Phone: 937-568-9660 or 877-730-7676

<http://www.nationalgolflinks.org>

Directions:

From Columbus: Take I-70 west bound to exit 66. Turn left onto Route 54 through S. Vienna to Route 40. Turn right onto Route 40 west and pass Buena Vista Rd. The next road on your right is Clubhouse Drive.

From Dayton: Take I-70 east to exit 62 and make a right turn onto Route 40 east. Go approximately 2 miles and make a left turn onto Highway Outpost Rd. Then turn left onto Route 40 westbound to Clubhouse Drive (first road to your right).



National Golf Links No. 11



BSA ENVIRONMENTAL SERVICES, INC.

Over 20 years of Superior Aquatic Microbiology Services!

- Phytoplankton Identification
- Biovolume & Biomass
- Chlorophyll Analyses
- Algal Systematics
- Cyanotoxin Analyses
ELISA & HPLC
- Epifluorescence Microscopy
- Microphotography
- Taste & Odor Algae
- Vouchers (Slides/Digital)
- Express Service Available

Contact us today for additional information or a quotation!
 216-765-0582 • 23400 Mercantile Rd. #8, Beachwood, OH 44122 • www.bsaenv.com
*Contractor for the USEPA National Lakes Assessment for
 Phytoplankton and Microcystins*



AQUA DOC

Complete Lake & Pond Management

- Customized Algae & Weed Treatment Programs
- Award Winning Waterscape Design & Installation
- Biologists, Aquatic Specialists on Staff
- Serving All Ohio Waters Since 1983



Free Consultations - Call Today!

440-286-7663 or Toll Free 800-689-5253

10779 Mayfield Road Chardon, Ohio 44024
www.aquadocinc.com

Most Major Credit Cards Accepted

Check out our new advertisement.....



Five Divisions;

- *Ohio Dam Safety Organization*
- *Ohio Floodplain Management Association*
- *Ohio Lake Management Society*
- *Ohio Stormwater Association*
- *Ohio Watershed Professionals Association*

Working within twelve interests areas;
One Incredible Organization!



Join your colleagues in supporting the only statewide group dedicated to protecting ALL Ohio water resources. Membership benefits can be found at:

<http://wmao.org/join-wmao/>

Water Management Association of Ohio

www.wmao.org * admin@wmao.org * 330-466-5631

Annual Membership for 2015 to WMAO—ODSO, OFMA, OLMS, OSWA, and OWPA

Please join us again as we fulfill the WMAO mission. Your membership dues make it possible for WMAO and its Divisions to carry out important work protecting Ohio's water resources. Use the form below or renew online.



Membership 2015*

Water Management Association of Ohio

*Use this form to join or renew your WMAO membership, or online at: <http://wmao.org/join-wmao/>

Name: _____ Credentials: _____
 Company: _____ Job Title: _____
 Address: _____
 City: _____ State: _____ Zip: _____ County: _____
 Email: _____ Ohio Region (circle): Central NW NE SE SW Statewide
 Phone: _____ Mobile Phone: _____
 Additional Members and Emails (Organizational or Unlimited): _____

Division Affiliation (check one*):

*Members are in all Divisions. Select a primary, if applicable.

- None
 Ohio Dam Safety Organization (ODSO)
 Ohio Floodplain Management Association (OFMA)
 Ohio Lake Management Society (OLMS)
 Ohio Stormwater Association (OSWA)
 Ohio Watershed Professionals Association (OWPA)

Areas of Interest (check all that apply*):

*For dissemination of WMAO information.

- Agriculture Lake management
 Dam safety Mineral resource management
 Drinking water / wastewater Navigation and recreation
 Education Research and data management
 Floodplain management Stormwater
 Ground water Watersheds

Membership Annual Dues:

Individual	\$ 85
Organizational	\$ 250
Added individuals above 3 members	\$ 80
Unlimited	\$ 950
Citizen	\$ 30
Emeritus	\$ 25
Student	\$ 10

Individual = anyone interested in Ohio's water resources.

Organizational = an incorporated or unincorporated entity interested in Ohio's water resources with up to three (3) individual memberships.

Unlimited = an incorporated or unincorporated entity interested in Ohio's water resources with unlimited individual memberships, advertisement space in WMAO's newsletter, and recognition on the WMAO website.

Citizen = anyone with an interest in Ohio's water resources but not employed in a water-resource field, as a non-voting member with benefits limited to the WMAO newsletters and notification of activities.

Emeritus = any individual who is at least 65 years of age and who has been a member of WMAO for not less than five (5) consecutive years.

Student = any student currently enrolled in an accredited high school, technical school, college or university.

Amount Due:

Member Type: _____
 Additional Members (organizational) _____
 Ohio Water Education Program* _____
 WMAO/WRFO Scholarship Fund* _____
 OLMS Dan Kush Education Fund* _____

Total Enclosed: _____

Apply for 2015 membership online at: <http://wmao.org/join-wmao/>

Or by check payable to **WMAO-Membership**; Or by credit card:

Credit card #: _____

Expiration Date: _____ CVV#: _____

Name on card: _____

Email for receipt: _____

Please submit completed registration form and dues to:

Water Management Association of Ohio
 8440 E. Washington Street #206
 Chagrin Falls, OH 44023

*Donated contributions to OWEP and special Funds are fully deductible under federal income tax law. Membership dues are not tax deductible.

WATER MANAGEMENT ASSOCIATION OF OHIO

8440 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.

Permission to reprint with credit to WMAO.



2015 WMAO Executive Board of Directors



Boris Slogar, PE	bslogar@mwcd.org	President
Alex Covert	sacovert@usgs.gov	Vice President
Peter Soltys, PE, PH	pwsoltys@ftch.com	Past President
Gregory Nageotte	greg.nageotte@dnr.state.oh.us	Treasurer
Stuart Ravary, PE	stuartravary@stoneenvironmental.com	Secretary
Tim Howdyshell	thowdyshell@aep.com	Division Director—Dam Safety (ODSO)
Shawn Arden, PE, CFM, LEED	sarden@emht.com	Division Director—Floodplain Management (OFMA)
Eugene C. Braig IV	braig.1@osu.edu	Division Director—Lake Management (OLMS)
Mark McCabe	mark_mccabe@gspnet.com	Division Director—Stormwater Management (OWSA)
Cindy Brookes	cabrookes@wsos.org	Division Director—Watershed Management (OWPA)
Larry Antosch	lantosch@ofbf.org	Director—Agriculture
Joe Bonnell	bonnell.8@osu.edu	Director—Education
Craig Smith	craig.smith@epa.ohio.gov	Director—Groundwater
Scot Hindall	scot.hindall@dnr.state.oh.us	Director—Mineral Resources Management
John Hoopingarner	jhoopingarner@mwcd.org	Director—Navigation & Recreation
John Lenhart	lenhart.49@osu.edu	Director—Research & Data Management
Jim Shoemaker	james.shoemaker@daytonohio.gov	Director—Water & Wastewater
Kari Mackenbach, CFM	kmackenbach@msconsultants.com	Director-at-Large
John Herchl	herchljf@cdmsmith.com	Director-at-Large