

# Ohio Water Resources Center Newsletter

## From Our Directors

Experts are steadily finding new or previously unrecognized contaminants in our waterways and drinking water systems, yet their risk to human health and the environment are not yet fully understood. Last month's EPN Breakfast/WMAO Luncheon was a great opportunity to discuss emerging contaminants and our water resources. The highlight of the event was the panel discussion. **Amy Klei** (Chief of the Ohio EPA Division of Drinking and Ground Waters) provided an overview of emerging contaminants in Ohio. **Dr. Wayne Carmichael**



(Professor Emeritus of Aquatic Biology/Toxicology at Wright State University) spoke about the threat of biological contaminants and how we can mitigate harmful cyanobacteria in municipal and recreational water supplies. **Dr. Andrew Lindstrom** (Research Physical Scientist with U.S. EPA) talked about different chemical contaminants that pose a threat to our water resources, such as PFAS. **Sarah Lowe** (Great Lakes Regional Coordinator for NOAA Marine Debris Program) discussed marine plastics and how NOAA is actively developing, implementing, and monitoring prevention strategies. The panel discussion, moderated by Ohio WRC Co-Director **Dr. Linda Weavers**, explored how we can improve our understanding and management of several emerging contaminants affecting Ohio's water resources.

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## Spotlight

### Join Us for the Ohio WRC/WMAO April Luncheon Seminar

*Water quality performance and methods to maintain the hydraulic function of permeable pavements*

**Featuring: Dr. Ryan Winston, Assistant Professor, The Ohio State University**

Permeable pavement is an effective tool for improving stormwater quality when sited over soils with high infiltration rates, but its efficacy over less permeable soils is uncertain. This presentation will focus on three novel questions related to water quality performance of permeable pavements:

1. Water quality performance when situated over heavy clay soils,
2. Nutrient removal through denitrification during dry periods, and
3. The effects of seasonality on water quality performance, particularly in locales with cold winters.

To ensure long-term function, permeable pavements need maintenance to remove accumulated sediment and debris which clogs its pore space. Various maintenance methods were tested in the field, including different types of street sweepers, milling the pavement surface, vacuuming, and pressure washing, to determine what techniques best restore permeable pavement hydraulic function. Permeable pavement



can significantly reduce the load of common stormwater pollutants even over heavy clay soils if engineering design accounts for seasonal influences and long-term maintenance needs.

The event will be held on **April 17th**, from **11:30AM-1:00PM** at **The Wilma H. Schiermeier Olentangy River Wetland Research Park**, 352 West Dodridge Street, Columbus, Ohio 43202.

[Register!](#)

## News Updates

### [New report warns of dangers to Great Lakes health and economy from climate change](#)

Via Northwestern Now, March 21st, 2019

### [Researchers say toxins from blue-green algae can travel more than a mile from water](#)

Via Fox4, March 19th, 2019

### [Gov. DeWine unveils \\$900 million investment plan in Lake Erie](#)

Via The Blade, March 14th, 2019

### [Treatment technologies for PFAS in Industrial Water](#)

Via Water Technology, March 12th, 2019

### [ORSANCO Sets Dates For River Standards Hearings](#)

Via Cincinnati Public Radio, March 6th, 2019

### [Ohio Department of Agriculture Director Dorothy Pelanda addresses concerns about water quality](#)

Via The Daily Advocate, March 6th, 2019

### [Microplastic pollution revealed 'absolutely everywhere' by new research](#)

Via The Guardian, March 6th, 2019

### [Federal lawmakers push EPA to take action on PFAS: What it means for Dayton](#)

Via Dayton Daily News, March 5th, 2019

### [Infrastructure and water quality challenges outlined in State of the State](#)

Via Ohio's Country Journal, March 5th, 2019

### [Study Finds Coal Ash Contamination Widespread In Ohio Valley](#)

Via Ohio Valley Resource, March 4th, 2019

### [Scientists tune up Lake Erie's alarm system for toxic algae blooms](#)

Via The Toledo Blade, March 4th, 2019

### [Multiple efforts underway to expand knowledge of produced water](#)

Via mrt, March 4th, 2019

### [EPA's plan to regulate chemical contaminants in drinking water is a drop in the bucket](#)

Via The Conversation, March 1st, 2019

### [Why Toledo Just Gave Legal Rights to Lake Erie](#)

Via CityLab, March 1st, 2019

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Have a news article you'd like us to feature in our Newsletter? Email us at [OhioWRC@osu.edu](mailto:OhioWRC@osu.edu)!

# Ohio WRC Research Highlight

## Quantifying direct groundwater discharge to Lake Erie and vulnerability to hidden nutrient loads

Nutrients from human activities discharge to coastal waters through streams, rivers, surface run off and direct groundwater discharge, contributing to the formation of harmful algal blooms. The nutrient concentrations coming directly from streams and rivers are easier to measure. However, groundwater, which seeps from the lakebed over broad areas, also contains dissolved nutrients and is a more difficult source to measure. With Ohio WRC funding, Dr. **Audrey Sawyer** and her team aimed to quantify the threat and identify coastal areas that are particularly vulnerable to groundwater seepage. Dr. Sawyer used a combination of geospatial analysis and field testing to estimate direct groundwater discharge in the United States portion of the Great Lakes.



Locations for direct groundwater discharge measurement were selected using NHDPlus program, which was also used to estimate the geometry and size of wedge-shaped recharge areas outside stream catchments where water flows directly to the coast. Using the findings from the geospatial analysis, Sawyer and her team conducted a detailed field study of an at-risk location. The principle findings of this study show that 43% of the United States Great Lake Coast is vulnerable to ground water nutrient seepage, and that Lake Erie has the highest percentage of at-

risk coastal groundwater seepage (31%). The key findings of this project led to the creation of a freely available map that may help tailor strategies aimed towards reduced nutrient loading in Lake Erie and other lake systems.

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Find out more about Dr. Sawyer's research by visiting her [website](#). If you'd like to find out more about other Ohio WRC research projects, visit: <https://wrc.osu.edu/past>.

## Opportunities

### Water Management Association of Ohio (WMAO) Student Scholarship

This scholarship is an opportunity for undergraduate and graduate students in a water-related field. This \$1000 scholarship is available to applicants who meet the following eligibility criteria:

- Candidates must attend, or plan to attend, a public or nonprofit independent college or university in Ohio on a full time basis.
- Candidates must be pursuing one of the following water resource-related disciplines: Agricultural engineering, Aquatic Biology, Civil or Environmental Engineering, Education, Geology, Hydrogeology, Hydrology, Natural Resources, Water Policy, or Other Sciences.
- Candidates must be a resident of Ohio.
- Candidates must have a minimum 2.75 grade point average.

Please share this opportunity with all of your eligible students. The deadline to apply has been moved to April 27th, 2019, 5:00PM. [More information.](#)

## Department of Energy - American Made Challenges: Waves to Water

The Water Power Technologies Office (WPTO) at the U.S. Department of Energy (DOE) will be launching a new prize, aligned with the recently announced Water Security Grand Challenge. The Waves to Water prize will provide up to \$2.5 million in cash prizes, engage a wide variety of competitors, and accelerate early stage technologies through a series of contests to demonstrate small, modular, cost-competitive desalination systems that use the power of ocean waves to provide potable drinking water to remote and coastal communities. The prize will advance the emerging community of problem solvers and technologists working to pair wave power technology with water systems, as well provide new technology options to solve water security challenges. [More information.](#)

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To find more resources offered by Ohio WRC, please visit: <https://wrc.osu.edu/resources>

## Policy Updates

### Proposed revision definition of "Waters of the United States"

On December 11, 2018, the EPA and Department of the Army signed a proposed rule revising the definition of "waters of the United States" to clarify federal authority under the Clean Water Act in a clear and understandable way. The proposed definition would replace the approach in the 2015 Rule and the pre-2015 regulations. The public is invited to submit written comments by **Monday, April 15th**, identified by Docket ID No. EPA-HQ-OW-2018-0149, to the Federal eRulemaking Portal: <https://www.regulations.gov>. General guidance on making effective comments is available at EPA's [Commenting on EPA Dockets](#). You can find more information on the proposed changes [here](#).

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### Proposed Revisions to ORSANCO's Pollution Control Standards

The Ohio River Valley Water Sanitation Commission is accepting public comments, and technical and scientific studies and data supporting those comments through **Monday, April 15th**, to assist in a public review and update of its current Pollution Control Standards for Discharges to the Ohio River – 2015 Revision. The purpose of the public review is to receive comments from interested parties on the proposed 2019 Revision. ORSANCO is particularly interested in receiving technical and scientific information or data that supports comments on proposals for revising the Standards. All parties interested in submitting comments may do so by mail or email. Mailed comments should be addressed to ORSANCO, 5735 Kellogg Avenue, Cincinnati, OH 45230, Attn: PCS Comments. Emailed comments should be sent to: [PCS@orsanco.org](mailto:PCS@orsanco.org). You can find more information on the proposed changes [here](#).

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### Draft Guidance on Total Coliform Bacteria Monitoring for Small Public Water Systems

Ohio EPA Division of Drinking and Groundwater seeks comments on the draft guidance document, [WQ-01-007: Guidance on Total Coliform Bacteria Monitoring for Small Public Water Systems \(Population Less Than 3,301 Persons\)](#). This document was revised to incorporate the changes in total coliform bacteria monitoring covered by the Revised Total Coliform Rule (RTCR) as adopted by the U.S. EPA effective April 1, 2016. Please submit comments or questions to [DDAGW\\_Rulecomments@epa.ohio.gov](mailto:DDAGW_Rulecomments@epa.ohio.gov) by **Friday, April 19th**. You can find more information on the proposed rule [here](#).

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### Draft Rules – Human Health Water Quality Criteria

Ohio EPA Division of Drinking and Groundwater is seeking input on, the Agency's draft rules in Ohio Administrative Code (OAC) Chapter 3745-1 for the following Water Quality Standards Program rules:

- 3745-1-32: Ohio river standards.
- 3745-1-33: Water quality criteria for water supply use designations.
- 3745-1-34: Water quality criteria for the protection of human health [fish consumption]

The Agency has drafted revisions to these rules, which address water quality criteria for the Ohio River mainstem, the Ohio River basin, and the Lake Erie basin. These draft criteria include numbers from U.S. EPA's 2015 criteria updates, Ohio River Valley Water Sanitation Commission's (ORSANCO's) 2015 pollution control standard updates, and maximum contaminant levels established under the Safe Drinking Water Act. Please see the related [fact sheet](#) for specific rule revisions, or visit the [website](#) for more information.

Comments on the rules are due to this Agency by **May 2, 2019**. Please submit comments or questions to [dsw\\_rulecomments@epa.ohio.gov](mailto:dsw_rulecomments@epa.ohio.gov)

## Upcoming Events

### 2019 Design-Build for Water/Wastewater Conference - April 10 to April 12

Put together thousands of water/wastewater design-build professionals and Owners with hundreds of exhibitors, plus top-notch experts, and you've got DBIA's Design-Build for Water/Wastewater Conference. As the nation's only design-build event for the water/wastewater sector, this is a truly unique opportunity to network, learn and collaborate with the best in the industry. [More information.](#)

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### The Ohio State CFAES Annual Research Conference - April 22

The 2019 CFAES Annual Research Conference will be held on Monday, April 22 at the Nationwide Ohio Farm Bureau and 4-H Center in Columbus, OH. Transportation will be provided from Wooster for those who are interested. The event is free and open to all CFAES faculty, staff, and students. We highly encourage those who are eligible to participate in the [poster competition](#). First, second, and third place winners in each competition will receive cash awards of \$500, \$300 and \$150, respectively. **Please register by April 8** if you plan to attend. [More information.](#)

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### 2019 Ohio Stormwater Conference - May 8 to May 10

The 2019 Conference is once again presented by the Tinker's Creek Watershed Partners and the Ohio Stormwater Association. The 2019 Conference is expected to be the biggest one yet with over 95 exhibitors and 90 speakers over seven tracks of concurrent sessions. The Ohio Stormwater Conference will provide up to 11 hours of continuing education credit as well as opportunities to earn more hours through the pre-conference tours. [More information.](#)

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