



LAND TO LAKE

magazine

issue 15 winter 2023



DEFIANCE
RESEARCH ALLIANCE

Water Quality Partnership

Community: Trees & Trails

Source Water Protection

MS4: Urban Stormwater

Community Connectivity

Trees & Trails



Tree City USA

The Defiance Shade Tree Commission received a Growth Award from the Arbor Day Foundation again in 2022 by going above and beyond the minimum requirements for the Tree City USA Award. To celebrate 30 years of success as Tree City USA, Defiance will host the regional awards program in 2024.



Urban Forestry Tour

The Ohio Department of Natural Resources sponsored an Urban Forestry Tour of Northwest Ohio. Headed by Stephanie Miller, the driving tour began in Napoleon, continued on through Defiance, and concluded in Bryan.

Featured examples of the tour included Master Planting and Design, the Great Maumee River Watershed, Sacred Spaces, and Healthy Trees in Difficult Sites.

Buckeye Trail & North Country Trail through Defiance County

The City of Defiance, Defiance County Commissioners, and Buckeye Trail Association worked cooperatively to devise and install an updated trail signage system throughout the county. In addition to the traditional Blue Blazes, the trail is now marked with additional post markers, several locator maps, and two custom interpretive signs which provide information about the community, the trails, and encourage trail usage.

In December 2022, Aaron Landon completed the North Country Trail in Defiance. His trek covered 8 states and over 4,700 miles. Defiance, near the mid-point of the trail, is a favorite finishing point for hikers who travel each half of the trail separately to avoid the worst winter mountain conditions.



Published to provide the community with information on protecting the water resources of the Maumee River Watershed throughout Defiance County.

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COVER PHOTO: Maumee River near the Water Treatment Plant, Defiance. Image by Zac Ricia.

Source Water PROTECTION



Partnering for Water Quality

The area's first denitrifying bio-reactor is now in full operation in the central part of Defiance County with construction taking place in August 2022. The selected site is in Mark Township, in the Platter Creek Watershed. This innovative practice is another piece of the puzzle in addressing algal blooms, not only in Lake Erie, but also in the Maumee River Watershed. Defiance is the only community that uses the upper reaches of the Maumee River for drinking water, and the Maumee River is the City's only raw water supply for almost 20,000 drinking water customers.

The experimental project is a large rectangular filter bed at the edge of a farm field, filled with a specific type of wood chips. Wood is high in carbon, which provides the medium that is expected to capture nitrogen before water from the drainage tiles enters into local waterways. Designed by Tyler Miller of Defiance SWCD, the goal is to treat 15% of the water coming through the filtration area.

Smart Watershed Pilot

With funding from the Great Lakes Observing System (GLOS), the City of Defiance Water Treatment Plant (WTP) has installed water quality sensors to measure nutrients and other key parameters before pumping river water into the reservoir. WTP sends this data to Seagull, an online platform for anyone to view real-time data and information. View the platform at: seagull.glos.org.



The Maumee River Watershed consists of several sub-watersheds, including the Upper Maumee, the source of water for Defiance.

Presentation information, material and video for the virtual workshop: "The Upper Maumee Smart Watershed Pilot—Collecting and Sharing Real-time Data for Source Water Protection" is available at landtolake.com/smart-water-virtual-workshop/

Conservation Kick

This project is a partnership of the Great Lakes Commission, Defiance Soil & Water Conservation District (SWCD), City of Defiance and landowners Mike and Michelle Zeedyk. The US Geological Survey has also been involved to conduct monitoring of the project to help evaluate the project's effectiveness over time.

COLLABORATIVE RESEARCH for Water Quality



DEFIANCE RESEARCH ALLIANCE



Dr. Sabrina Brown, left, (Defiance College) is the Project Director. She coordinates research efforts at the newly established Maumee River Watershed Data Research Center and manages student opportunities in water quality education.

Katelyn Smith, center, (Defiance College) is the Freshwater Research Technician. She is responsible for developing research protocols and conducting research in the field laboratory.

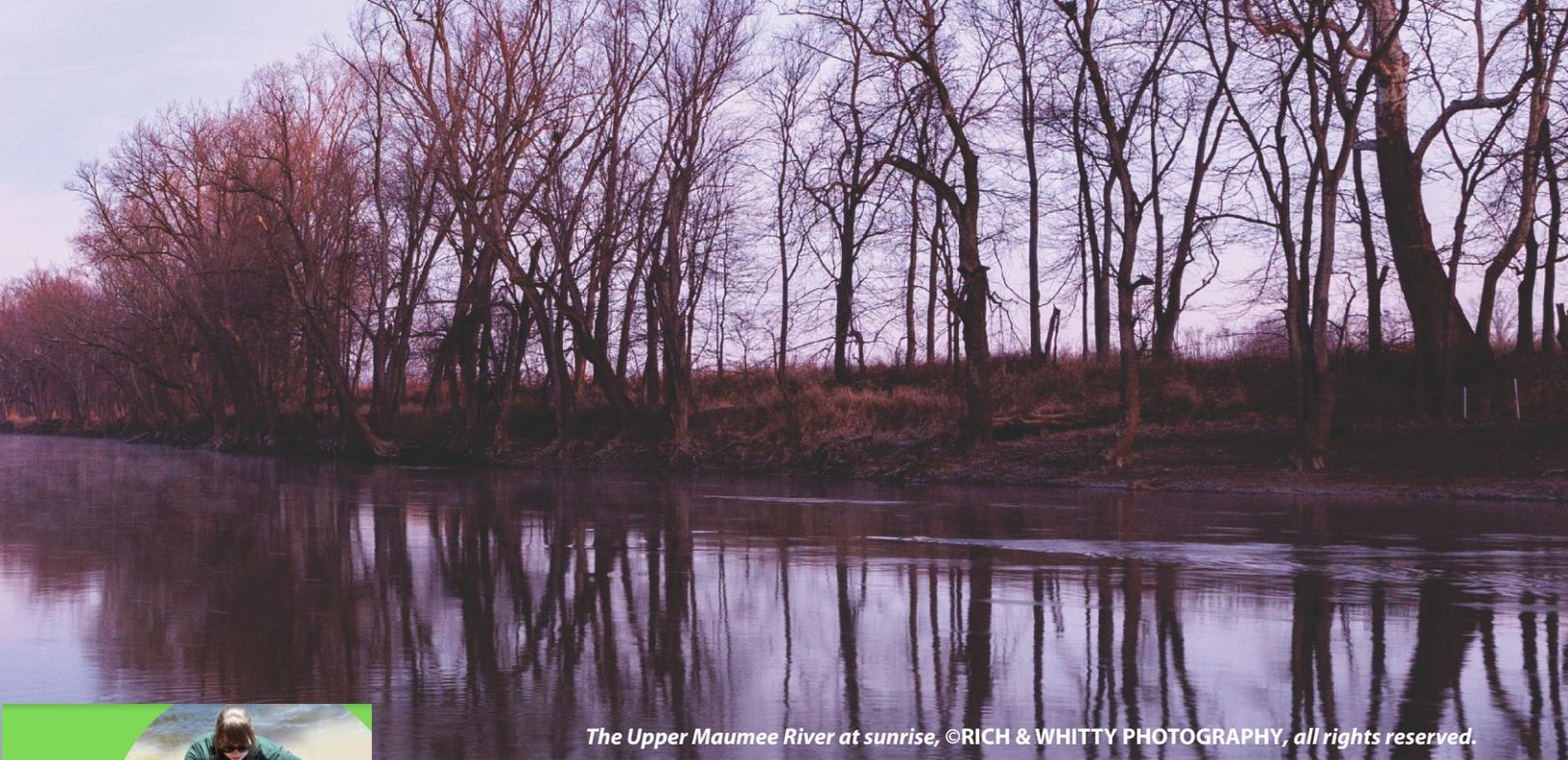
Jennifer English, right, (City of Defiance) is the Project Coordinator. She is developing the Maumee River Watershed Council, a working group that will communicate project information to the general public.

FUNDING AWARD

Defiance College, in partnership with the City of Defiance, received \$500,000 from the federal Department of Education due to Senator Sherrod Brown's Congressionally Directed Spending request. These funds, awarded through the Department of Education, will support a collaborative research program focused on water quality issues in Northwest Ohio. The Defiance Research Alliance (DRA) will address systemic problems attributable to the Upper Maumee River Watershed through education, research, and training.

PROJECT OBJECTIVES AND GOALS

This partnership will focus on achieving the overarching goals of examining excess nutrients in the Upper Maumee Watershed, enhancing education for secondary and college students, and conducting research focused on real-world solutions. This research will occur at Defiance College's newly-established Maumee River Watershed Research Center. DRA will pursue research and outreach objectives focused on developing solutions to benefit the Defiance County community to reach the common goal to learn more about one of the many natural resources we use everyday: water.



The Upper Maumee River at sunrise, ©RICH & WHITTY PHOTOGRAPHY, all rights reserved.



Spring
2023
Special
Topics
Course!

BIO 495

Fundamentals of Water Quality

STUDENT OPPORTUNITIES

As a part of the DRA, secondary and college level classes are being offered at Defiance College by Sabrina Brown in the 2023 Spring

semester: Inquiry in Science (NSCI 220) and Fundamentals of Water Quality (BIO 495) are open to students in any major and will provide more information on the basics of water quality research. Inquiry in Science will be available to both Defiance College students and high school College Credit Plus (CCP) students. It will focus on how scientific research works by performing hands-on research in the Upper Maumee Watershed. The second class, Fundamentals of Water Quality, is an upper-division science course for Defiance College students and will include hands-on water quality research, as well as opportunities for students to make connections with scientists and professionals.

INFORMATIONAL WEBINAR

The DRA held a webinar in 2022 to introduce key members of the team, including our Core Working Group and Executive Committee, and most importantly provide information on how to get involved! This is available for public viewing at: landtolake.com/defiance-research-alliance/

CITY-COLLEGE CONNECTION

Early in 2022, the Defiance Water Treatment Plan (WTP) began operating an inline nutrient monitoring system on the Maumee River. This equipment provides staff at the WTP and others (see Smart Watershed Pilot on p.3) real-time water quality data to determine optimal times to pump water to the municipal reservoir and has assisted WTP staff in its operations of filling the reservoir. This new data set is also useful to those working to understand and solve problems related to harmful algal blooms throughout the Great Lakes region.

This innovative new “City-College” partnership will provide ongoing benefits, as the DRA is developing applied research projects in association with this real-time data that is collected locally—while building opportunities for student internships at the high school level, along with research assistants at the college level. There are opportunities for strengthening and building new relationships with the staff throughout the City for career exploration. Currently in development is a field trip for high school science students, not only to learn more about the City's operations of providing clean drinking water and processing wastewater, but also to explore the newly renovated Science Lab for hands-on and interactive activities at Defiance College. Learn More at landtolake.com/defiance-research-alliance/

MS4: Urban Stormwater

PROTECTING our (drinking) water quality

Clear Your Storm Drains

Excess organic debris left on hard surfaces can runoff into the drainage system and cause problems including harmful algal blooms in our waterways. Removing grass and leaves around storm drains is a simple step property owners can take to decrease localized flooding, improve water quality, and reduce maintenance costs.



Riparian Restoration Project

The City of Defiance has received a grant from Ohio Lake Erie Commission to assess the riverbank along the Maumee River to restore a stretch of the scenic river near Pontiac Park in downtown Defiance.



Tree Planting Project

Thanks to grant funding from the Lake Erie Urban Waters Federal Partnership, installation of large canopy trees at Bronson and East Side parks will provide shade and critical water quality benefits for the adjacent Auglaize River



Clean Up Your Parks

Every Spring the City of Defiance invites clubs, organizations, and citizens to pitch-in and get our parks ready for the season. Leaf and litter clean-up beautifies the parks and keeps pollution from our waterways.

Find all of these topics and more at:

landtolake.com/make-a-difference



MS4

Control Measures



Nutrient Management



Sediment Pollution Erosion Control



Residential Stormwater Management



Trash and Litter



Illicit Discharges and Hazardous Waste Disposal

A Municipal Separate Storm Sewer System (MS4) is defined as a publicly-owned system used solely for conveying storm water; including storm drains, catch basins, curbs, gutters, ditches and man-made channels. The MS4 conveys water directly into surface water, such as rivers and streams.



everydropcounts

City of Defiance Storm Water Management Program

Urbanization within our watershed brings and increase of pavement and rooftops, increasing stormwater runoff which has a negative impact on the water quality of Lake Erie and also causes rivers to flood more quickly. Urban stormwater runoff collects dirt, debris, salt and other pollutants as it flows into storm drains that lead directly into our streams and rivers. Pollution and flooding are both reduced when runoff slows down, allowing rainwater to filter through grasses and soil.



The City of Defiance holds an MS4 permit with the Ohio Environmental Protection Agency under the National Pollutant Discharge Elimination System (NPDES) program. This permit requires the City to develop and follow a Stormwater Management Plan (SWMP) to preserve, protect and improve the water quality in the City of Defiance. The full plan is available to the public on the MS4 page of the City website: cityofdefiance.com/283

we need you.

Water quality matters to us all.

It's easy to get involved:

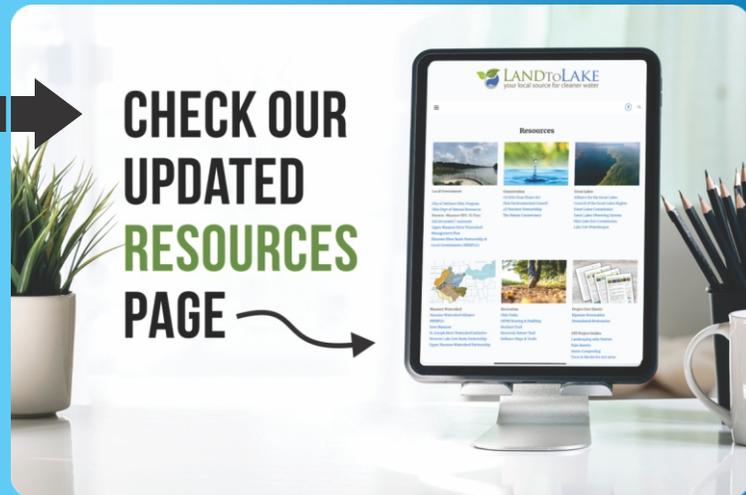


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CHECK OUR UPDATED RESOURCES PAGE



Local Government, Conservation, Great Lakes, Maumee Watershed, and Recreation links all in one place. Plus Project Fact Sheets and DIY Project Guides - with more to come:

landtolake.com/resources



SAVE
THE
DATE



RIVER FEST



RiverFest returns in 2023
to celebrate our water resources,
& enjoy recreational opportunities
provided by our rivers and streams.



JUNE 24, 2023

A FREE, FAMILY-FRIENDLY COMMUNITY EVENT

