



LAND TO LAKE

magazine issue seven | autumn 2017 | landtolake.com



impact through knowledge: Land to Lake 2017 conference re-cap

working together for
cleaner water solutions

collaboration

COMMUNITY EVENTS | NEWS

2018:

Farm Fair

January 12-14, 2018 at Northtowne Mall in Defiance presented by Tinora Young Farmers and Defiance Soil & Water Conservation District. Come out to this indoor 'fair' to see farm equipment, wildlife presentations, local farmers, and enjoy some fair food!

Conservation Poster & Photo Contests

Sponsored by Defiance Soil & Water Conservation District. Students can use their artistic side to learn and share appreciation for natural resources. Entries are due April 9, 2018. Complete contest details including categories and themes are available online.*

Tree Seedling Sale

Deadline for orders is March 16. See back cover for details.

MauGlaize RiverFest

Mark your calendars now for June 22, 23, and 24 at the River Parks in Defiance. This event keeps getting better every year! We will have pontoon rides, kayaks, music, food, and activities focused on the River. The Northwest Ohio Woodland and Wildlife Festival will add to the happenings this year on Saturday June 23 from 10 am -2 pm.

*Like Defiance SWCD on Facebook or visit defiance-county.com/swcd for info on these events and contests.



Conservation Partner of the Year 2017

The 2017 Conservation Partner Award was presented to Bill and Margaret Grimes. Bill was the Defiance SWCD Education Specialist from 2005 through fall of 2015. Having spent 10 years doing a phenomenal job of reaching out to students of all ages (and frequently assisted by Margaret), he and Margaret continue to do what comes natural to them—educate students about natural resources. Bill and Margaret generously donate their time and talents assisting with upkeep at Penney Nature Center, helping with the tree sale, and implementing Defiance SWCD programs by guiding and presenting to student groups at the Sixth Grade School Tour and Penney Nature Center Kids Camp. We are very fortunate to have them as local champions for conservation.



LANDTOLAKE

magazine

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

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Photo by Ryan Imbrock, Defiance College

on the COVER

The 2017 Land to Lake Conference coordinators included (left to right): Jeff Leonard, City of Defiance; Jennifer English, City of Defiance; Dr. Chris Winslow, OSU Stone Labs; Stephanie Singer, Defiance SWCD; Dr. Doug Kane, Defiance College and Upper Maumee Watershed Partnership.



“The key to fixing this problem is creating partnerships and having a collaboration of stakeholders in this region” — Jeff Leonard

Defiance City Administrator



Christopher J. Winslow, PhD, Director, Ohio Sea Grant College Program, F.T. Stone Laboratory at The Ohio State University presented: *"Lake Erie Algae, Nutrient Loading, and Current Research"* following the conference.



Jan J. Younger Colloquium

AT DEFIANCE COLLEGE
"Knowing Thru Research"

This free public presentation was the second in a series of lectures derived from the Jan J. Younger Colloquium Endowment.

collaboration

working together for cleaner water solutions

There is no shortage of research and ingenuity being targeted at the problem of Harmful Algal Blooms (HABs) in the Western Lake Erie Basin—this is evident from the breadth of knowledge and information shared at the Land to Lake Conference at Defiance College.

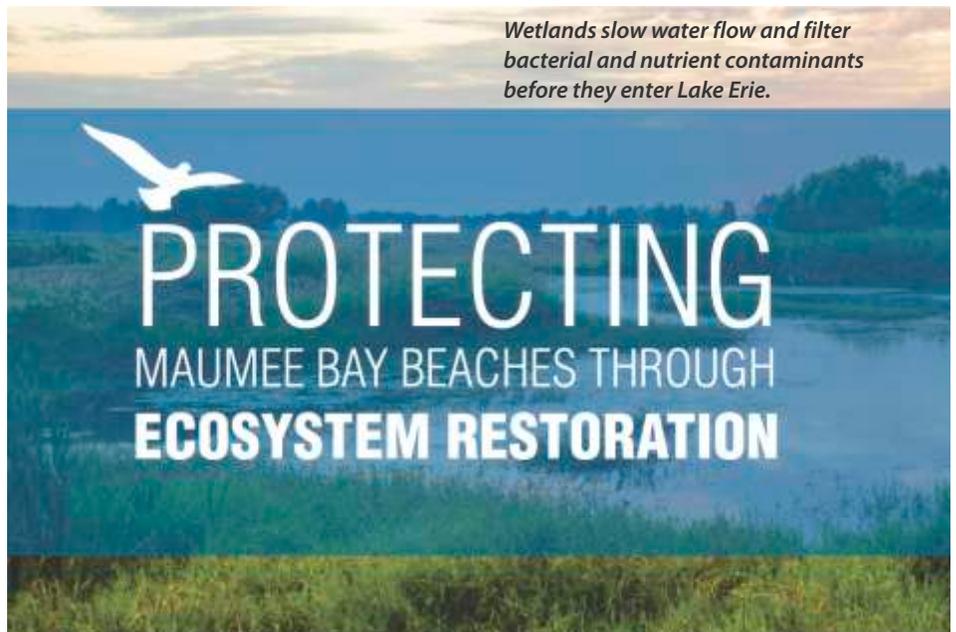
There were five universities represented between panel discussions and speakers—as we heard, each researcher is working on specific solutions in order to solve the same general problem. The City of Defiance has been working with the University of Toledo (UT) to develop a partnership that will enhance local and regional efforts to improve the conditions in Lake Erie.

Dr. Daryl Dwyer is Chair of the Restoration Ecology Department and



Director of the Environmental Remediation and Research Lab at UT. His most recent research project has focused on wetland development and ecosystem restoration at Maumee Bay State Park; this project was funded primarily by a Great Lakes Restoration Initiative (GLRI) Grant from U.S. EPA in order to 1) create high-quality habitat for native plants and animals, 2) improve the quality of water in Maumee Bay and 3) serve as a demonstration for future restoration work. Working toward creating cleaner water solutions requires patience, persistence and a vision. The City has a vision to implement projects that will build on efforts such as these!

Wetlands slow water flow and filter bacterial and nutrient contaminants before they enter Lake Erie.



Event ReCap



THE 2017

LAND TO LAKE CONFERENCE

Impact
Through
KNOWLEDGE

4

How Can We Make a Problem Better if We Do Not Understand It?

*Presentation material
from the Conference and
biographies of Conference
Presenters available at:*

landtolake.com/conference

An understanding of facts is essential to optimal decision making and future impacts. Land to Lake wants our community and leaders to be well versed in all things water.

A group of 70 fabulous people came together on September 28, 2017 for the Land to Lake Conference presented by the City of Defiance and Defiance Soil & Water Conservation District. The heart of this conference, held at Defiance College, was understanding issues and potential solutions surrounding our beautiful Rivers as they flow through our landscape and enter into our Great Lakes.

“Our goal was to feature research-based presentations and discussions in an effort to raise the general awareness of key river topics and to *inspire impact.*”

Since water quality is such a complex, multifaceted issue, we featured an array of subjects to understand this puzzle. In fact, the theme this year was “Impact Through Knowledge”. We think that an understanding of the layers leads to greater solutions allowing caring citizens to have an impact on their community.



watershed strategic plan

Prepared by Bruce Cleland, Tetra Tech and Jennifer English, City of Defiance

Overview

The Maumee State Scenic River supports a healthy forested corridor and a thriving aquatic community including walleye, white bass, and northern pike prized by sport fishermen. Numerous public facilities in the Maumee River watershed provide many recreational opportunities for local residents and visitors to enjoy the River.

In addition to its historic, cultural, economic, and recreational significance, the Maumee River is part of the lifeblood for Defiance as the primary drinking water supply for the City. The importance of water quality to this valued resource became headline news in 2014, when the City of Toledo issued a drinking water advisory and again in 2016 when harmful algal blooms occurred in the Maumee River right here in Defiance County.

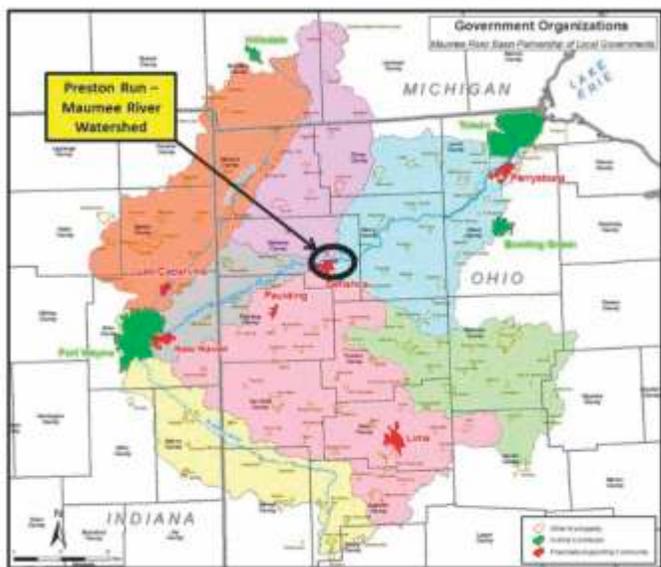


The City of Defiance recently prepared a plan* for the Preston Run watershed. This plan was created to complement the array of water quality management activities being conducted in the Defiance area and is intended to support community efforts to manage limited resources while maximizing environmental benefits. The City of Defiance received a grant from the Ohio EPA, funded by the U.S. EPA, to prepare this "9-Element Watershed Plan" with technical assistance and guidance from Bruce Cleland of Tetra Tech. The U.S. EPA has just recently started to require this type of watershed plan be developed to ensure a consistent level of planning efforts and prioritization have taken place for projects that are funded with federal dollars.

The City's integrated approach includes infrastructure capital requirements, combined sewer overflow (CSO) compliance, stormwater management, and drinking water supply/distribution plus recognizes the over-arching need to align transportation planning with watershed management activities. The plan is also designed to help guide strategic implementation of agricultural management practices as more than half the drainage area in the Preston Run watershed consists of cultivated crops and pasture. The urban/agricultural land use mix requires that the full range of available management measures be considered on identifying viable solutions to address water quality problems and concerns; the same practices that will be incorporated into Domestic Action Plans needed to achieve the recommended 40 percent phosphorus reduction target.

* **The Nonpoint Source Implementation Strategic (NPS-IS) Plan**

for the Preston Run – Maumee River HUC-12 (04100009 02 01) is referred to throughout this 4-page overview as the "plan" or the "watershed plan" or the "Preston-Run Watershed Plan" and it can be found in its entirety at: <http://landtolake.com/resources-2/>.



Defiance is located in the heart of the Maumee River Basin and is uniquely positioned to play a key role in addressing the water quality concerns in Lake Erie. The Preston Run Watershed is a small fraction of the light blue area designated as the "Lower Maumee Watershed".

watershed strategic plan

The genesis of this plan stems, in part, from a “Community Revitalization” vision developed by the City of Defiance focused on four themes:

- 1) green infrastructure
- 2) ecological restoration
- 3) underutilized land
- 4) trails and connectivity

In addition, this plan builds on the efforts of local organizations that actively provide technical expertise, promote public outreach and education, pursue funding opportunities, and conduct water quality monitoring efforts.

Watershed Characterization

Stream habitat and aquatic biology in the Preston Run – Maumee River watershed reflect an extremely unique situation. Conditions are driven by land use within the watershed itself **and** by land use in the large drainage area upstream of Defiance. The Preston Run-Maumee River watershed has a diverse mix of land use including developed, urban, rural, industrial, commercial, forested and agricultural areas. While over half of the watershed is cultivated crops, consistent with the agricultural nature of northwest Ohio,



*Defiance has a vested interest in water quality across the Maumee watershed; the River serves as our **primary drinking water** supply and provides recreational opportunities to the community.*



*As part of its **integrated planning** approach, Defiance continues to incorporate **green infrastructure** into the City's public works projects.*

more than 30 percent of the watershed is developed land; a disproportionate amount compared to adjacent watersheds.

Defiance has a vested interest in water quality management across the Maumee watershed; the River serves as its primary drinking water supply and provides recreational opportunities to the community. Both the City and the Defiance Soil & Water Conservation District participated in development of the Upper Maumee River Watershed Management Plan; a very similar watershed planning effort for the land area between Ft. Wayne, IN and Defiance (*shown in a grey color on the map, previous page*). Management strategies intended to address problems within the Preston Run-Maumee River Watershed also considers flows and pollutant loads that originate in the Upper Maumee; a reason why implementation of practices that will improve this watershed will also **contribute to the 40 percent** load reduction goals for Lake Erie.

Critical Areas and Restoration Strategies

An important aspect of addressing water quality problems and concerns is to ensure the plan recognizes two key parts for successful implementation: stewardship and critical areas. In urban portions of the watershed, stewardship is reflected through the commitment by the City in taking a proactive



role to solve water quality problems through a focused and coordinated approach. In rural areas, stewardship involves agricultural producers, retailers, service providers, and other certified professionals adopting proven BMPs in a comprehensive manner through conservation systems.

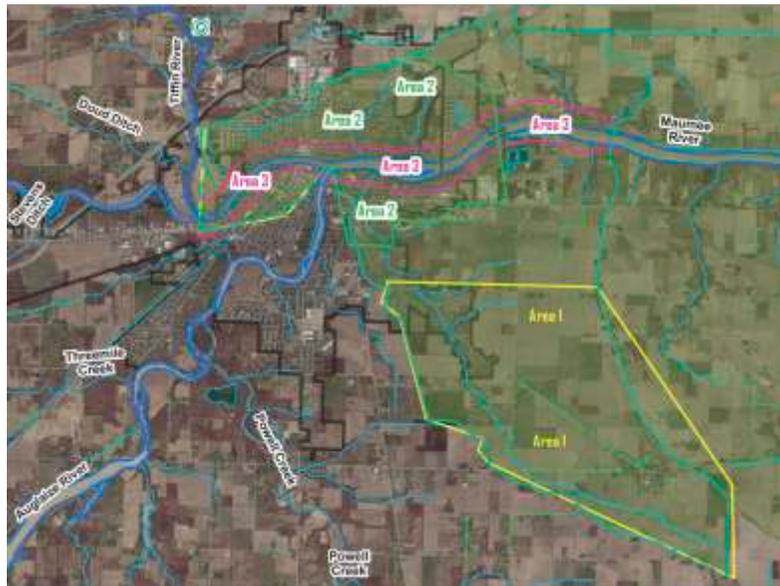
Critical areas in the Preston Run – Maumee River watershed cover a wide range of nonpoint source issues and concerns. Each critical area identified aligns with one of four strategies identified in Ohio’s Non-Point Source (NPS) Management Plan, namely: 1) urban sediment and nutrient reduction; 2) altered stream and habitat restoration; 3) agricultural NPS reduction; and 4) high quality waters protection. Each strategy plays a key role in determining the potential management tools needed to address location specific problems.

Based on available information, the Preston Run Plan includes all known critical areas; some critical areas have implementation projects associated with specific locations, while others simply have conceptual ideas intended to address flooding/erosion complaints or other residential concerns. **Critical areas** have been identified as three distinct locations, generally classified as follows:

- 1) Agricultural,**
- 2) Urban**
- 3) Riparian**



*This strategic plan, in part, is designed to help guide implementation of agricultural practices, as **over half** of the Preston Run watershed **consists of cultivated crops**.*



*Critical areas of the Preston Run watershed have been identified as three distinct locations, generally classified as **1-Agricultural, 2-Urban, and 3-Riparian**.*

Agricultural Land—Critical Area 1

This critical area corresponds with the direct drainage into Preston Run, which includes predominantly agricultural fields as well as the small unincorporated area of Ayersville. Several of the direct tributaries are roadside ditches that are part of the Defiance County Ditch Maintenance Program in conjunction with the Defiance SWCD. For agricultural parts of the watershed, the plan recognizes that the success of the NPS reduction strategy depends on voluntary participation of the producers, particularly those farming in critical areas. Expanding the use of whole farm conservation planning and installing conservation systems in the project area represents the foundation of this strategy. Not only does this approach ensure that agricultural conservation practices are located where they will provide the most benefit; it is consistent with the goal of promoting sustainable agriculture and farm profitability.

Urban Portions -- Critical Area 2

This critical area is the urban stormwater area; portions of the watershed that have sanitary, storm and combined sewer infrastructure systems and are either regulated by the

watershed strategic plan



One of the City's best investments is in **public outreach and education** with a goal to foster stewardship and active public involvement in the region's water resources.

Municipal Separate Storm Sewer System (MS4) or City's Long Term Control Plan (LTCP) for addressing the problem of CSOs. Critical Area 2 is where the City of Defiance has financially invested the most over the last 10 to 15 years, as the implementation of the LTCP is a distinct priority for the health, welfare and safety of City residents and the surrounding region. One of the City's best investments is in public outreach and education with a goal to foster stewardship and active public involvement in the region's water resources.

Critical Area 2 is also a priority of the City moving forward with implementation of Capital Improvement Projects (CIP). As part of the integrated planning approach, the City continues to incorporate green Infrastructure into public works projects. East High Street is a good example— incorporating water line replacement, combined sewer overflows relief, improvements to safety by correcting traffic patterns at the intersection, and coordination between essential utilities and urban forestry by replanting street trees as a part of the project.

Green Infrastructure projects that make use of parks and other green space to manage stormwater, similar to the bioretention/urban forestry project at Diehl Park, will allow the City to mitigate the challenges associated with increased runoff and pollution caused by impervious surfaces. Many communities are facing this situation as a result of expanding development and it requires collaboration and planning for innovative solutions going forward. Although business and industry may be regulated as permitted facilities, there are many ways to incentivize responsible business practices and sustainable, low-impact development.

Riparian Corridor -- Critical Area 3

This critical area is the riparian corridor of the mainstem of the Maumee River, which is designated as a scenic corridor. Numerous benefits will be realized from a stabilization of erosive banks, restoration and/or reforestation of riparian zones and construction of wetlands in strategic locations for the interception of sediment and nutrients entering directly into the mainstem. Three of these projects include the development of a wetland for the purposes of nutrient reduction. The highest priority, although still a medium-term project would be a linear project extending along the same project boundary as the improvements planned for East River Drive, to create a safer pedestrian/bicycling experience from Pontiac Park in Defiance to Independence Dam State Park. The City is also currently implementing a Streambank Stabilization project in Pontiac Park, using bioengineering that will serve as a demonstration of best practices.



Partners Make it Possible: The Downtown Development and Visitors Bureau (DDVB), Land to Lake Initiative, and the Tri-State Watershed Alliance partner to offer pontoon boat rides for the public during the 2017 Riverfront Gathering.

This publication was financed in part or totally through a grant from the Ohio Environmental Protection Agency and the United States Environmental Protection Agency, under the provisions of Section 319(h) of the Clean Water Act.

The contents and views, including any opinions, findings, or conclusions or recommendation, contained in this publication are those of the authors and have not been subject to any Ohio Environmental Protection Agency or United States Environmental Protection Agency peer or administrative review and may not necessarily reflect the views of either Agency, and no official endorsement should be inferred.





2017 Land to Lake Conference ReCap



Thriving River Towns

Metroparks Toledo has an ambitious plan to locate *a Metropark within five miles of every resident in Lucas County*. Scott Carpenter provided an inspiring overview of several new parks projects that have recently been initiated to accomplish this – including a pedestrian bridge, a bike share program, an eco-adventure park and miles of trails, creating abundant CONNECTIVITY!



Riverfront Fort Wayne also has an impressive system of hiking and biking trails. Equally as important is the public engagement and master planning process shared by John Urbahns of Greater Fort Wayne, Inc. that has resulted in a clear set of guiding principles and priorities for the community: *“To establish a framework for action to maximize the use and value of Fort Wayne’s rivers through increased recreational use, restoration, enhancement and development.”*

Defiance has much to learn from listening to and observing what is happening around our region and our watershed.

Domestic Action Plan:

Ohio’s Domestic Action Plan (DAP) will advance efforts toward the proposed 40% nutrient reduction target put forth in the Great Lakes Water Quality Agreement of 2012. It is being developed in conjunction with the U.S. EPA Draft DAP which will serve as an umbrella document. The states of Indiana, Michigan, Ohio, and Pennsylvania are each developing their own state level plans.

Karl Gebhardt is the Deputy Director of the Ohio EPA as well as the Director of the Ohio Lake Erie Commission. His presentation focused on actions for implementation in the DAP, which is grouped by actions: 1) Agricultural Land Management 2) Community-Based Nutrient Reduction 3) Restoration and Support of Ecosystem Services, and 4) Monitoring, Tracking, and Support.

For More Info Go To: lakeerie.ohio.gov/LakeEriePlanning/OhioDomesticActionPlan2018.aspx

UNDERSTANDING Wetland & Riparian Roles in Water Quality

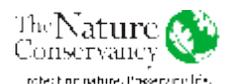
Swamps have a bad reputation and may conjure images of mucky water and mosquitoes. In our area, over 90% of the swamps, or wetlands, have been drained in our area which is unfortunate, because swamps have magical properties. Wetlands, along with vegetated areas along streams, known as riparian buffers are special places.

Wetlands and Riparian areas are:

- **Filters:** Known as the kidneys of our environment, polluted water enters and cleaner water leaves.
- **Sponges:** The roots of vegetation and the unique soils can hold a lot of water preventing flooding.

- **Nurseries:** Many species of water fowl, song birds, amphibians, insects, and even mammals require this habitat to reproduce.
 - **Sanctuaries:** Likewise, migrating birds and local wildlife find refuge and plentiful food sources in these natural areas.
- Restoring wetlands and riparian areas is an amazing solution to our water quality problems with many other benefits.

Information presented by Chris Collier, *Black Swamp Conservancy*, and Sharon Partridge, *The Nature Conservancy*.





Phosphorus and Lake Erie

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Dr. Laura Johnson from Heidelberg University National Center for Water Quality Research gave the lunchtime address at the Land to Lake Conference. The Heidelberg Tributary Loading Program began sampling on both the Maumee and Sandusky Rivers in 1974. These automated samplers collect river water 3 times a day to analyze suspended sediments and dissolved nutrients among many other parameters.

She shared some algal bloom trends in Lake Erie explaining that they were prevalent during the 1960s and 1970s, and have returned in the early 2000s, with 7 of the largest blooms happening over the past 9 years.

Why have blooms returned to Lake Erie? The trend in the Maumee River shows that total phosphorus has decreased over time but dissolved phosphorus has increased almost 2 fold since the mid-1990s. The amount of phosphorus from March to July in



Lake Erie, early August 2017



lakeeriealgae.com

the Maumee River is tightly linked to the condition in Lake Erie and drives the harmful algal bloom severity.

The key is the amount of dissolved phosphorus which is the portion of

phosphorus that doesn't settle to the bottom of the river and makes it to the lake.

The pattern of intense precipitation shows that in the last 20 years, events with 2" + of precipitation have doubled, which makes management for phosphorus more difficult with this unpredictability. Edge of Field research from Kevin King at USDA Agricultural Research Service (ARS) shows that over 80% of dissolved phosphorus comes from tile drainage but surprisingly the losses are only about 1% of farm inputs.

The highest dissolved phosphorus occurs where excess phosphorus exists, macropores in the soil are prevalent, and drain tiles are dense. In conclusion, the data collected in the Maumee River can help forecast the size of the bloom in Lake Erie, determine the source of nutrients, and understand the dynamics of pollutant runoff.

The 4Rs of Nutrient Stewardship

can help decrease the phosphorus leaving the land. The 4Rs stand for:

- * **Right Source**
- * **Right Rate**
- * **Right Time**
- * **Right Place**

All of these referring to thoughtfulness around fertilizer use to minimize loss.



LAND



RIVER



LAKE

Working Together For Cleaner Water Solutions

PANEL DISCUSSIONS

The Conference concluded with three panel discussions. Each panel had a distinct theme, all with a general sense of HOW individuals can make an “Impact Through Knowledge.”

Jason Roehrig, *Defiance SWCD*, directed the discussion: **Understanding Land Use and It’s Role in Water Quality.**

Panelists:

Tyler Miller, Defiance SWCD; Jen English, City of Defiance; Joe Logan, Ohio Farmers Union; and Kris Barnswell, Toledo Metropolitan Council of Area Governments.



Dr. Chris Winslow, *OSU Stone Labs*, led the presentation on **Current Research on Water Quality in Our Rivers and Great Lakes.**



Panelists:

Dr. Daryl Dwyer, University of Toledo Restoration Ecology; Dr. Mike McKay, Bowling Green State University Aquatic Microbial Ecology; Dr. Doug Kane, Defiance College Restoration Ecology.

The day’s sessions were concluded with a discussion moderated by Dan Wire, Executive Director Tri-State Watershed Alliance, on: **What YOU Can Do! Citizen Participation in Water Quality Impacts.**

Panelists:

Tom Speiss, Project Normal; Abby King, Save Maumee; and Markie Miller, Ohio Community Rights Network.



See biographies & presentations at: landtolake.com/conference

What CAN You Do?



Find out how you can have a positive impact on water quality at: landtolake.com/make-a-difference

CONSERVATION NEWS

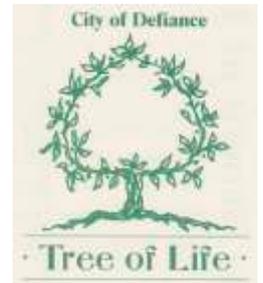


Maumee River Algal Blooms '17

The unseasonably warm fall temperatures contributed to algal blooms that were very evident in the Maumee River this year; shown here is a thick mat of nontoxic algae forming near the boat dock at Pontiac Park in October 2017. Although there were no drinking water advisories issued this year the City of Toledo was hit particularly hard with dense algal blooms forming in the downtown area, with a contact recreational advisory issued on Thursday September 21, 2017.

Give A Gift That Continues To “Grow” Every Year!

When planning a memorial to a loved one, to honor a birthday, anniversary or a birth of a child, consider a gift that would last a lifetime. “Tree of Life” is a trust fund which provides for planting of flowers, shrubs and trees in our City Parks, Cemetery and public areas. All donations are tax deductible. Contact Defiance City Parks 419.783.4364.



“The greatest danger to our planet is the belief that someone else will save it...” — Robert Swan



2018 Tree Seedling Sale

Defiance Soil & Water Conservation District

BARE ROOT FRUIT TREES

Pack of 4 - \$50.00

Orders can be placed at:

fs7.formsite.com/infoofswcdorg/form22/index.html



	Packets Ordered	# Per Packet	Packet Description	Price	Total
Coniferous Trees		10	American Arborvitae 8-14"	\$10.00	
		10	Colorado Blue Spruce 9-15"	\$8.00	
		10	Eastern White Pine 10-16"	\$8.00	
		10	Norway Spruce 10-18"	\$8.00	
		10	Red Cedar 10-16"	\$10.00	
		10	White Spruce 10-18"	\$8.00	
Deciduous Trees		10	Black Gum 12-18" *	\$9.00	
		10	Bur Oak 12-18"	\$9.00	
		10	Paw Paw 12-18"	\$13.00	
		10	Persimmon 12-18"	\$9.00	
		10	Red Bud 12-18" *	\$9.00	
		10	Red Maple 12-18"	\$9.00	
		10	Swamp White Oak 12-18"	\$9.00	
		10	Tulip Poplar 12-18"	\$9.00	
Deciduous Shrubs		10	Black Chokeberry 12-18" *	\$9.00	
		10	Spicebush 12-18"	\$10.00	
		10	Winterberry 12-18" *	\$10.00	
Misc.		8	Native Ornamental Variety Pack 2 trees of each asterisked species above (*)	\$10.00	
		10	Marking Flags	\$1.00	

Name: _____

Total

Street Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

Order Deadline
March 16, 2018

Tree Shelters Available for Purchase
Contact District for Pricing

Please make checks payable to: **Defiance SWCD**, 06879 Evansport Road, Suite C, Defiance, OH 43512.
All orders must be paid in full. You will be notified in early April via postcard or email when your order will be available for pickup.

For Office Use Only: Order Number _____

Receipt Number _____