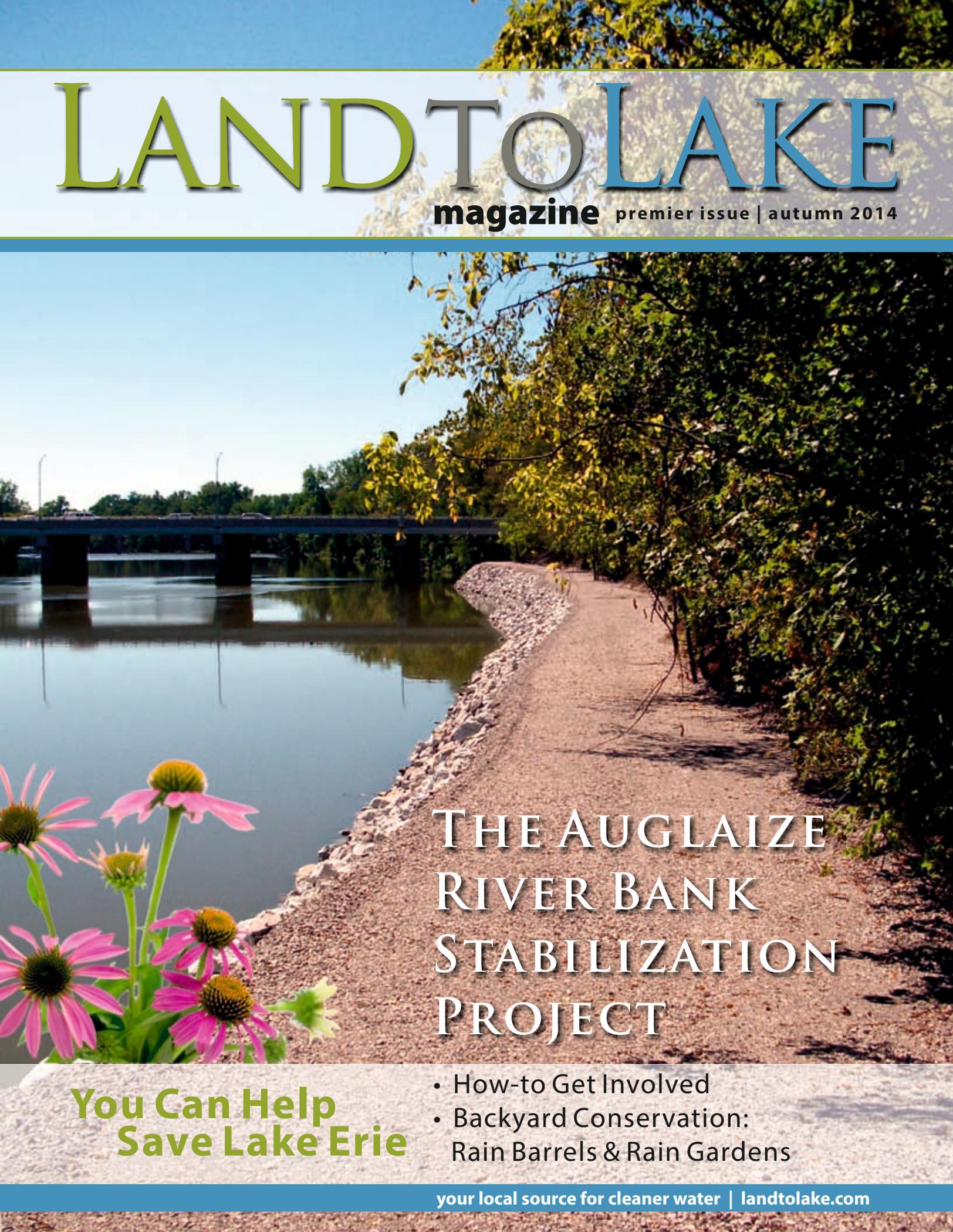


LAND TO LAKE

magazine premier issue | autumn 2014



THE AUGLAIZE RIVER BANK STABILIZATION PROJECT



**You Can Help
Save Lake Erie**

- How-to Get Involved
- Backyard Conservation:
Rain Barrels & Rain Gardens

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Q&A

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What is *Land to Lake*?

“*Land to Lake*” is an Initiative designed to get our community involved in protecting the water resources of the Maumee River Watershed throughout Defiance County.

What’s the Geographic Area of Concern?

The Western Lake Erie Basin (WLEB) encompasses nearly 6 million acres of land, drained by the Maumee, Portage and Ottawa Rivers, as well as the open waters of Maumee Bay— the region’s gateway to Lake Erie and one of the most biologically diverse, productive

and economically important areas of the Great Lakes system.

The full potential of the resource, however, is compromised by long standing issues associated with point and nonpoint source pollution including phosphorus loads, excessive algae growth, oxygen depletion, sedimentation and dredging requirements, aquatic invasive species impacts and related concerns.

The Maumee River is the largest tributary to all of the Great Lakes. Defiance is the geographic center of the WLEB watershed.

For more info, visit: wleb.org or: mrbplg.org

Who is *Land to Lake*?

Land to Lake is a joint-venture of the City of Defiance’s MS4 Division and the Defiance Soil and Water Conservation District(SWCD).

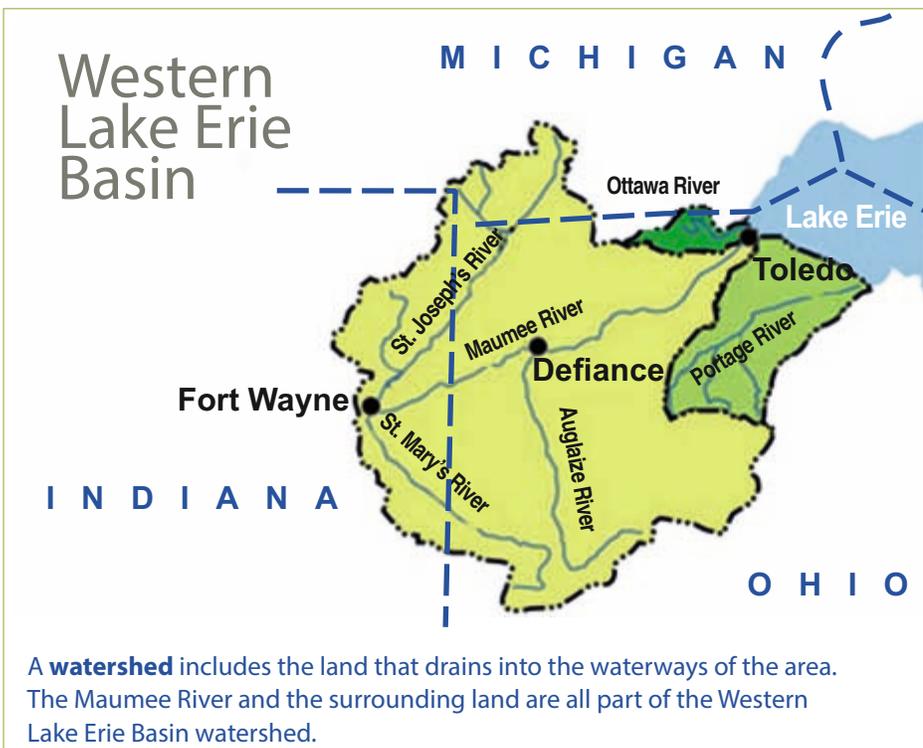


Stephanie Singer is the Upper Maumee Watershed Coordinator, working at Defiance SWCD.

Jennifer English is the Municipal Separate Storm Sewer System (MS4) Coordinator for the City of Defiance.

The goals of these respective programs have brought these county and city offices together for various projects that promote community involvement and improvements to water quality.

Land to Lake is funded in part by the Ohio EPA Office of Environmental Education.



A **watershed** includes the land that drains into the waterways of the area. The Maumee River and the surrounding land are all part of the Western Lake Erie Basin watershed.



Defiance
419-782-1794
Soil & Water Conservation District



LAND to LAKE magazine

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Printing by
Homewood Press, Toledo Ohio



Printed on Forestry Certified Paper
30% PCW

Land to Lake magazine is published to provide community members in Defiance County and Northwest Ohio with conservation information as it pertains to improving water quality in our watershed.

A digital version of this publication is available online at
landtolake.com

Want to See More?

Please call 419.783.4355

or send an email to:

jenglish@cityofdefiance.com

and let us know you would like to be added to our mailing list for future issues of

Land to Lake magazine.

FOLLOW US ON **facebook**

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Land-to-Lake/1439238002996354

Win a Rainbarrel!

Our first 100 subscribers will be entered into a drawing for a free Rain Barrel!

YOU CAN HELP SAVE LAKE ERIE

The health of Lake Erie and especially the Western Lake Erie Basin is suffering badly due to Harmful Algal Blooms (HAB's).

There is a regional effort to improve the water quality in Lake Erie that includes business, industry, agricultural, municipal, and federal leaders as well as community partners. One goal of the *Land to Lake Initiative* is to raise awareness of the issues and provide practical information that will guide residents in their efforts to become part of the solution.

For information on HAB's visit:

landtolake.com



Mats of Lyngbya blooming on Maumee Bay.

Actions here on the land do have an impact on the water resources of Lake Erie. We believe that **everyone can do something to make a positive difference!**

- **Plant A Rain Garden***
- **Install A Rain Barrel***
- **Plant A Tree**
- **Redirect Your Downspout**
- **Support Your Local Municipality's Sewer Upgrades**
- **Compost Kitchen & Yard Waste To Improve Soil Quality**
- **Reduce Use Of Lawn Fertilizers**
- **Pick-up Pet Waste**
- **Maintain Your Septic System**
- **Farmers Can Follow "Best Management" Practices**
- **Volunteer To Help With Stream Monitoring Or Other Conservation Projects****

Join your fellow residents and local community groups in efforts to improve our streams and rivers and "Save Lake Erie"! There is something for everyone and everyone can do something!

*See our Workshops listed on page 6

** For information on Volunteer opportunities, please phone 419.782.1794 or visit **landtolake.com**

Auglaize Riverbank Case Study

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Over many years the west riverbank of the Auglaize River has been subject to the forces of water that has resulted in severe erosion, creating a steep slope between Washington Avenue near the Rotary Walkway area and the water's edge. In order to protect the embankment and adjacent infrastructure, the City of Defiance hired Anderzack-Pitzen Construction, Inc. to install approximately 7,000 tons of rip-rap to stabilize the bank between the Second Street Bridge and the Fort Grounds.

Right now, we do know that it will require regular maintenance to

keep the berm stable. It will be affected by heavy rains that increase water flows and water levels. The most recent winter was a hard one, with a lot of ice on the river. This can also create problems, as ice jams can dislodge the larger rock as it tries to break away and flow downstream.

Plans to continue stabilizing various riverbanks throughout the downtown area are being coordinated by the City. These projects will be implemented over time, as funding permits, and in conjunction with other planned capital improvement projects.

The most important aspect of

this project from an erosion control standpoint was to stabilize the bottom (or toe) of the slope. This has been accomplished with the rock embankment that many of you have already seen (as shown in the photo, below).

From a water quality perspective, the more valuable part of the project has not happened yet!

Rocks are useful for providing stabilization, but they do not hold any value for water quality or the wildlife habitat that relies on the natural setting. Healthy vegetated areas provide streams with food and shade. Cooler, shaded water holds more oxygen and supports



Phase I of the project as viewed looking North from the Second Street bridge. >





Great Lakes
Commission
des Grands Lacs

diverse communities of aquatic life. When banks are steep, roots cannot penetrate deep enough to protect against erosion.

With guidance and requirements from the United States Army Corps of Engineers (USACE), the replanting (riparian restoration) portion of the project will soon begin.

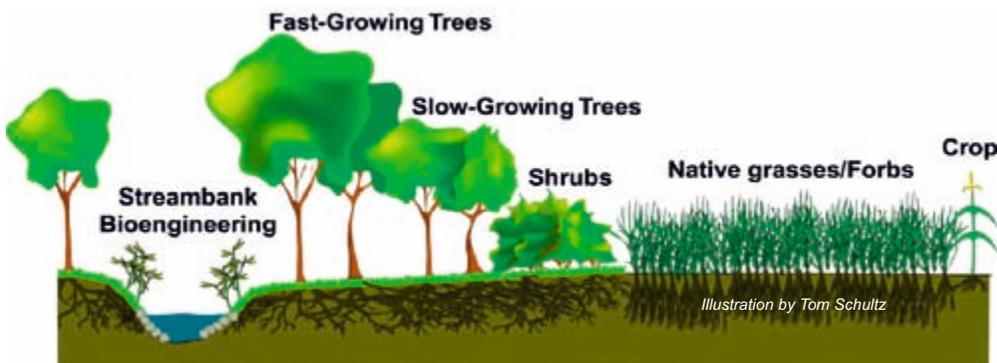
The engineering portion of the project and rock embankment was paid for by the City of Defiance. The riparian restoration portion of the project is being funded by the City with additional funding from the Great Lakes Commission.

Riparian Areas

- Naturally vegetated land that runs adjacent to a stream or river

- Provide bank stabilization, absorb flood water, provide habitat, and add to the scenic beauty of a community

Many restoration projects are implemented using a combination of techniques, as illustrated in this multispecies riparian buffer:



Overview

- Multiple Years of Increasingly Severe Erosion
- City Investment to Protect Utilities and Infrastructure
- Structural Stabilization Project Implemented Using Rock at Base of Riverbank
- Great Lakes Commission (GLC) Funding Secured for Riparian Restoration
- Envirolok will Create a Mini-Retaining Wall Structure to Develop a Planting Pocket
- Native Plant Selection Includes the Following:

Trees:

Sycamore
Swamp White Oak
Eastern Redbud
Sugar Maple
Black Walnut
Tulip Tree

Shrubs:

Elderberry
Ninebark
Spicebush
Viburnum
Dogwood



Streambank Restoration

Stabilizing Stream Banks Can:

- Prevent loss or damage of land, utilities, buildings and vegetation
- Reduce sediment loads to streams
- Improve the stream for recreational use and habitat
- Control unwanted meander of a river or stream

Planning Considerations:

- All streams are DYNAMIC, LIVING, CHANGING (no repairs will last forever!)
- Goal of bank stabilization: To increase a bank's resistance to the force of water. There are other techniques designed to reduce the force of water against a bank; these are not covered here.
- Specific solutions will be dependent on the soil types, slopes and water flows

Possible Solutions:

HARD ARMOR— non-living structures placed on the bank

- Riprap: permanent cover of rock used to stabilize streambanks
- Gabions: stone-filled galvanized or coated wire baskets

BIOENGINEERING—use of natural materials and vegetation to control bank erosion and promote longer-term stability of banks.

- Conventional Planting: Native plants hold soil in place with root structures, provide shade and habitat for fish and wildlife, and maintain qualities of a natural setting
- ENVIROLOK™: filled bags of organic material (soil and sand) on bank create a stable planting surface. Native plants are planted in between and into bags.
- Live Fascines: use of a long bundle of live, dormant branches bound in an overlapping pattern placed in shallow trenches
- Live Stakes: use of dormant, living woody cuttings of riparian species
- Additional bioengineering techniques include: Tree Revetments, Branch Packings, Live Cribwall, Brush Mattress and Rootwads

2014

September 18, 6:30-8:00 pm

- Rain Garden/Rain Barrel Workshops. *See ad on back page.*

October 7, 6:30 pm

- Movie Screening and discussion: **Blue Gold—Water Wars** at Defiance Regional Medical Center, Auglaize Room.

October 16, 11:30 am-1:30 pm

- Rain Garden/ Rain Barrel Workshops. *See ad on back page.*

November 5, 6:30 pm

- Movie Screening and discussion: **DIRT** at Defiance Regional Medical Center, Auglaize Room.

December 11, 10:00 am-3:00 pm

- **Rain Garden Workshop for Landscapers:**
See ad on back page.

All Are Free Programs**Registration Is Required**

Contact: Stephanie Singer
ssinger@defiance-county.com
or 419 782-1794

Readers:

Please let us know if you have suggestions for future conservation-related events!

call 419.783.4355

or send an email to:

jenglish@cityofdefiance.com

NEWS

**Family Float**

As part of our effort to promote recreation on the Maumee River, we partnered with ODNR Division of Watercraft to sponsor a canoe trip in August 2014. We had 33 people participate in this adventure! We plan to make this an annual event. Stay tuned!

Save Maumee! Earth Day Boat Trip

Save Maumee! Recently completed a 9-day, 141 mile canoe trip traveling from Ft. Wayne, IN to Lake Erie. One of their goals was to bring attention to issues and recreation on the Maumee River. Along the way, they stopped at many locations, including Defiance, to learn about improving the River. www.savemaumee.org

Stream Monitors

A group of volunteers has been collecting data on local streams monthly since April 2014. This data will create a baseline to help us understand water quality and make decisions. We test streamside for pH, temperature, dissolved oxygen, and turbidity and send a sample to Heidelberg Lab for nutrient analysis. We also look at stream biology and habitat. Training provided to interested volunteers!

Upper Maumee Watershed Partnership

The Upper Maumee Watershed Partnership (UMWP) is excited to present a Watershed Action Plan that has been in the works for over 3 years! Many dedicated volunteers representing the community sat on the steering committee to complete the plan. It contains 400+ pages detailing the watershed and makes recommendations for water quality improvements. The next meetings are Sept 4 and Nov 6, details at www.uppermaumeewatershed.com.

Cover Crops

Cover crops are one way that local farmers are helping improve water quality. Cover crops such as oats, rye, and radishes are planted in the fall. These plants act like a 'blanket' over the soil during the winter and spring. This 'blanket' not only protects the soil from erosion but also adds to soil health by adding organic matter and nutrients. Cover crops can be used in home gardens too! Funding may be available for people wanting to plant cover crops, please contact Defiance SWCD 419 782-1794.



Rain Barrels & Rain Gardens

Land to Lake is offering workshops for backyard conservationists

As part of an effort to improve our contribution to Lake Erie, we are offering a series of Rain Barrel and Rain Garden workshops!

Rain Barrels are attached to a downspout to collect water for a sunny day!

Almost anyone with gutters can take advantage of the many benefits of a rain barrel. Each rain barrel installed is 55 gallons of water that does not enter the



storm drains during a rain event. That can really add up and make a difference in the amount and quality of water entering the river. During a heavy rain, if too much water rushes the system, it triggers the combined sewers to overflow directly to the river.

Combined Sewer Overflow (CSO)-
A place where RAW sewage enters the creek or river!

When stormwater and sewage using the same pipes becomes too much flow for a sewage treatment plant, it 'overflows' at a CSO. Preventing rainwater from entering this system will reduce these common occurrences in our watershed!
You can help!

Because our ditches and streams are flashy (they fill up fast during a rain and then drain quickly), erosion is more likely. Also, large quantities of excess stormwater carry other pollutants from the land such as oil from parking lots, pet waste, and fertilizer.

Rain barrels are a free source of water for your garden and landscaping!

Rain gardens are an additional way to prevent stormwater from rushing the system. A rain garden is a landscaped area planted with native plants and flowers that soak up rainwater. The garden fills with a few inches of rain water that come off of the roof of a house or overflow of a rain barrel during a storm. After the storm, the water slowly soaks into the ground instead of running off the land into a storm sewer or waterway. Native plants are suggested for use in the rain garden because of their deep



roots, water uptake and their ability to tolerate conditions ranging from wet to dry and hot to

freezing. Rain gardens are a lovely addition to your landscaping that not only look nice, but serve an important function in keeping our watershed healthy!

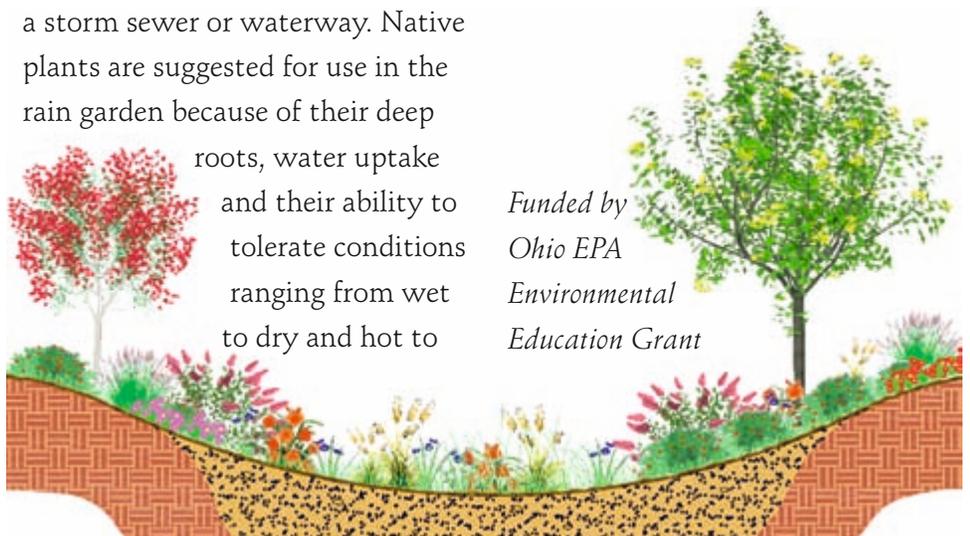
Would you like to install a rain barrel or rain garden but need guidance or lack funds? No problem!

Land to Lake is here to help! We will be holding a series of workshops this year to teach and guide people through the process. **Workshop participants will receive a 50% discount voucher toward rain garden plants AND a rain barrel.***

See our ad on the back cover for details and dates!

*Sign-up Now if you are interested. Limited availability on discount vouchers. First come-first serve while supplies last.

*Funded by
Ohio EPA
Environmental
Education Grant*



Rain Garden *and* Rain Barrel WORKSHOPS

Home Owners



Get Rain When
YOU Need It!

Save water and money with
an easy to use Rain Barrel

**Learn how to install rain gardens & rain barrels.
Receive a 50% cost saving voucher!***

September 18, 6:30-8:00 pm

October 16, 11:30 am-1:30 pm

January 13, 6:30-8:00 pm

*Availability is limited.
Contact us today to reserve
your spot in this FREE workshop!

**All Are Free Programs
Registration Required
Contact: Stephanie Singer
ssinger@defiance-county.com
or 419 782-1794**

Rain Garden Workshop for Landscapers

Landscapers will learn how to install a rain garden at a reduced cost due to kits available through an Ohio EPA Environmental Education grant.

**December 11th 10 am-3pm
at Defiance Regional Medical Center
Auglaize Room**

Professional Landscapers

