

## Maumee River (lower) Tributaries and Lake Erie Tributaries Watershed TMDL Report

The Clean Water Act requires Ohio EPA to prepare a cleanup plan for watersheds that do not meet water quality goals. The cleanup plan, known as a total maximum daily load (TMDL) report, specifies how much pollution must be reduced from various sources and recommends specific actions to achieve these reductions.

### What are the essential facts?

- Ohio EPA studied the Maumee River (lower) Tributaries and Lake Erie Tributaries (ML/LE tributaries throughout) watershed and found water quality problems at several locations.
- Water quality improvements can be made with practical, economical actions.
- Making water quality improvement depends on the participation of the watershed's residents.

### Where are the ML/LE tributaries watersheds?

The Maumee River and Lake Erie tributaries are located southeast of Toledo. The Maumee River (lower) tributaries, which drain into the Maumee River and Maumee Bay, drain approximately 77 square miles.



The Lake Erie tributaries, which drain to Lake Erie, drain approximately 205 square miles; all are part of the Maumee Area of Concern (AOC). The watersheds are located in Lucas, Wood and Ottawa counties.

Overall land use is 56% cultivated crops and 29% developed land. Many restoration projects have been completed in the project area.

*A watershed is the land area that drains into a body of water.*

### How does Ohio EPA measure water quality?

Ohio is one of the few states to measure the health of its streams by examining the number and types of fish and aquatic insects in the water. An abundance of fish and insects that tolerate pollution is an indicator of an unhealthy stream. A large number of insects and fish that are sensitive to pollution indicate a healthy stream.

In 2006 and 2008, comprehensive biological, chemical, and physical data were collected in the watersheds by Ohio EPA scientists. The watersheds' conditions were compared with state water quality goals to determine which streams are impaired, and how much needs to be done to restore good stream habitat and water quality.

### What is the condition of the ML/LE tributaries watersheds?

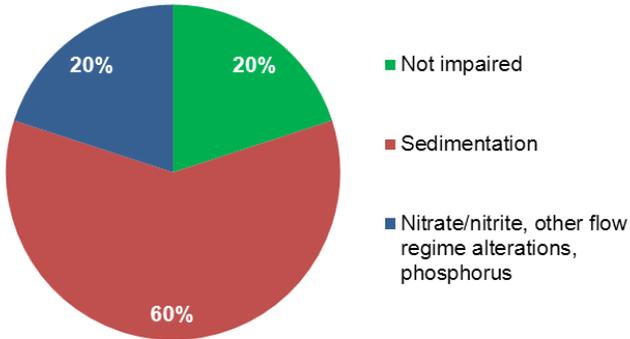
Twenty-one percent of sites sampled in 2006 and 2008 met aquatic life use goals; 29 percent met some goals; and 50 percent did not meet goals. Only 6 percent of sampled sites met the recreation use goals.

The three most common causes of aquatic life use impairment were nutrients, sedimentation/siltation and organic enrichment. *E. coli* bacteria caused recreation use impairments. Probable sources include runoff from farm fields and urban areas, point sources (such as wastewater treatment plants) and channelization. Probable sources of bacteria include failing home sewage treatment systems (HSTS) and small wastewater treatment plants.

# ML/LE Tributaries Watershed TMDL Report

## What are the problems?

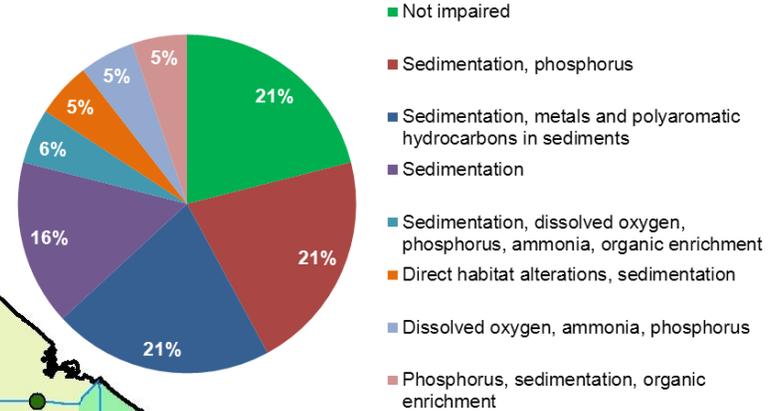
**Maumee River (lower) Tributaries (04100009 09)  
Causes of Aquatic Life Use Impairment**



**Sources of Aquatic Life Use Impairment**

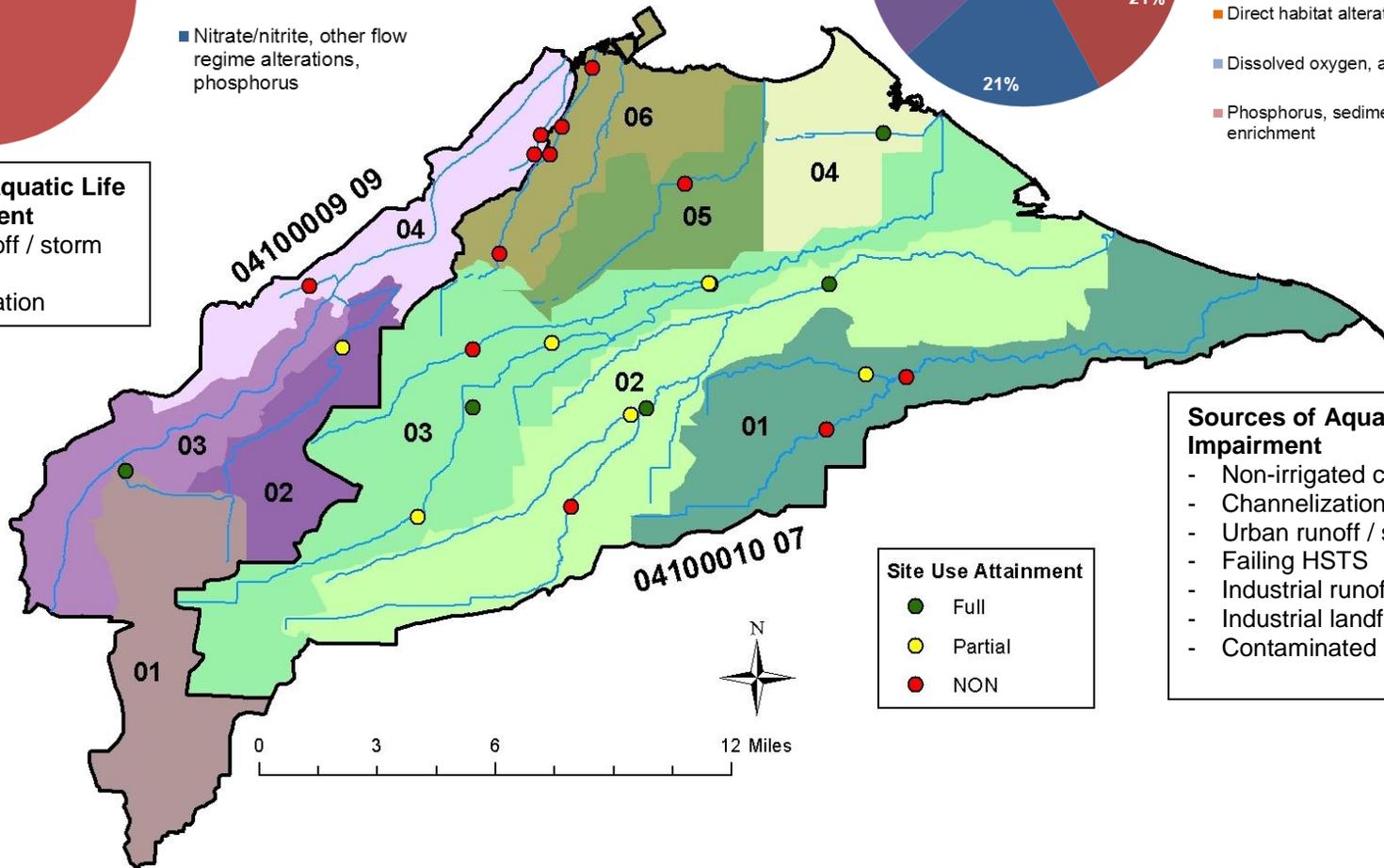
- Urban runoff / storm sewers
- Channelization

**Lake Erie Tributaries (04100010 07)  
Causes of Aquatic Life Use Impairment**



**Sources of Aquatic Life Use Impairment**

- Non-irrigated crop production
- Channelization
- Urban runoff / storm sewers
- Failing HSTS
- Industrial runoff
- Industrial landfills
- Contaminated sediments



**Site Use Attainment**

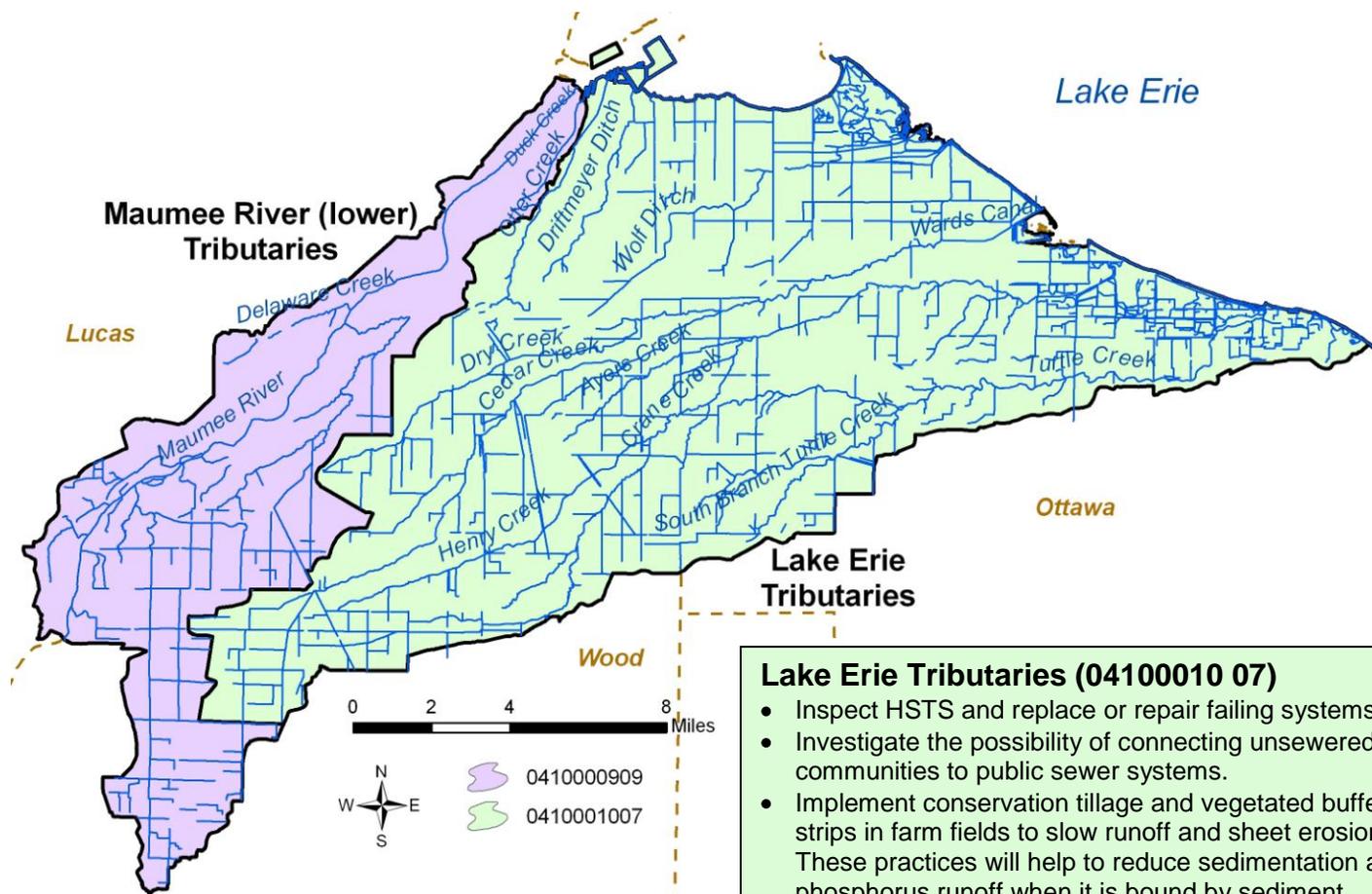
- Full
- Partial
- NON

# ML/LE Tributaries Watershed TMDL Report

How can the problems be fixed?

## Maumee River (lower) Tributaries (04100009 09)

- Inspect HSTS and replace or repair failing systems.
- Promote decentralized storm water best management practices that provide infiltration and filtration, including bioretention, bioswales, green roofs, infiltration basins and trenches, underground storage, permeable pavement, and storm water wetlands.
- Rainwater harvesting through the use of rain barrels and cisterns can be used to reduce the volume of runoff being generated in residential areas.



## Lake Erie Tributaries (04100010 07)

- Inspect HSTS and replace or repair failing systems.
- Investigate the possibility of connecting unsewered communities to public sewer systems.
- Implement conservation tillage and vegetated buffer strips in farm fields to slow runoff and sheet erosion. These practices will help to reduce sedimentation and phosphorus runoff when it is bound by sediment.
- Consider two-stage ditch construction in areas of higher sediment and phosphorus loading.
- Consider installation of controlled drainage systems where soils and gradient are appropriate.
- Reduce total phosphorus limits at several facilities.
- Promote decentralized storm water best management practices that provide infiltration and filtration.

# ML/LE Tributaries Watershed TMDL Report

## What are the most important “fixes” in the watershed?

- ◆ **Reduce nutrients entering streams.**
  - Reduce point source (e.g., wastewater treatment plant) inputs.
  - Reduce nonpoint source runoff (e.g., through controlled drainage and vegetated riparian buffers).
- ◆ **Reduce sediments entering streams.**
  - Install grassed waterways and vegetated riparian buffers to slow sheet runoff and filter sediment.
  - Promote decentralized storm water practices that reduce sediment in storm water runoff.
- ◆ **Improve storm water management.**
  - Promote decentralized storm water best management practices to improve infiltration.
- ◆ **Reduce bacteria entering streams.**
  - Inspect and replace or repair failing home sewage treatment systems.
  - Investigate the feasibility of connecting unsewered communities to existing public sewer systems.

## What actions are needed to improve water quality?

There are a variety of reasons why streams in the Lake Erie Tributaries and Maumee River (lower) Tributaries watersheds fail to meet water quality goals, so several types of actions are needed to improve and protect the watersheds.

The recommendations focus on reducing pollutant loads and/or increasing the capacity of the streams to better handle the remaining pollutant loads. Sources of water quality problems that should be focused on making water quality improvements include:

- Failing HSTS that contribute bacteria and nutrients.
- Farm fields that contribute sediment, nutrients and bacteria.
- Storm water that does not infiltrate into soils.

## Who can improve the situation?

Implementation of this report’s recommendations will be accomplished by federal, state and local partners, including the voluntary efforts of landowners.

Ohio EPA will issue permits to point source dischargers that are consistent with the findings of this TMDL report. In compliance with their Long Term Control Plans, many communities continue to make improvements to their wastewater treatment plants and sanitary sewer systems to eliminate untreated discharges. For example, Toledo has eliminated bypasses at the Bay View WWTP and eliminated all known sanitary sewer overflows. The Toledo-Lucas County Rain Garden Initiative is promoting the use of rain gardens to manage storm water.

The Ohio Department of Natural Resources has programs dedicated to abating pollution from certain agricultural practices; promoting soil, water, and wildlife conservation; and dealing with storm water and floodplain protection. County agencies often work with state and federal partners in administering federal and

state assistance programs to people in their counties. Several such programs are available to address home septic system upgrades and agricultural and urban conservation practices.

Local partners involved in the Maumee Remedial Action Plan process are working to improve these watersheds with habitat and water quality improvement projects. Some of the key partners working in the watersheds are Partners for Clean Streams, Toledo Metropolitan Area Council of Governments, University of Toledo, The Nature Conservancy, Ducks Unlimited and Western Lake Erie Waterkeeper.

Additional funding may come available for agricultural conservation practices through provisions in the Farm Bill for buffer strips, wetlands and other land conservation practices.

## Where can I learn more?

The Ohio EPA report containing the findings of the watershed survey, as well as general information on TMDLs, water quality standards, 208 planning, permitting and other Ohio EPA programs, is available at <http://www.epa.ohio.gov/dsw/tmdl/index.aspx>.

The Maumee River (lower) Tributaries and Lake Erie Tributaries draft TMDL report was available for public review from May 9 through June 11, 2012. The final report was approved by U.S. EPA on September 25, 2012. The report is available at <http://www.epa.ohio.gov/dsw/tmdl/MaumeeRiver.aspx>.

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