

# Upper Mahoning River Watershed Draft 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 upper Mahoning River watershed and found water quality problems at 46 locations.
- Water quality improvements can be made with practical, economical actions.
- You may review the work to date.
- Making water quality improvement depends on the participation of the watershed's residents.

## Where is the upper Mahoning River watershed?

The Mahoning River watershed in northeast Ohio covers parts of five counties. Beginning in Columbiana County, southeast of the City of Alliance, the Mahoning River flows north for 65 miles to enter the City of Warren, Ohio, which marks the end of the TMDL study area. The river continues another 43 miles to join the Shenango River in western Pennsylvania.

The Mahoning River watershed drains 1,140 square miles and the upper portion alone drains 541 square miles. Tributaries to the Mahoning River in this area include West Branch Mahoning River, Eagle Creek, and Deer Creek.

## 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.

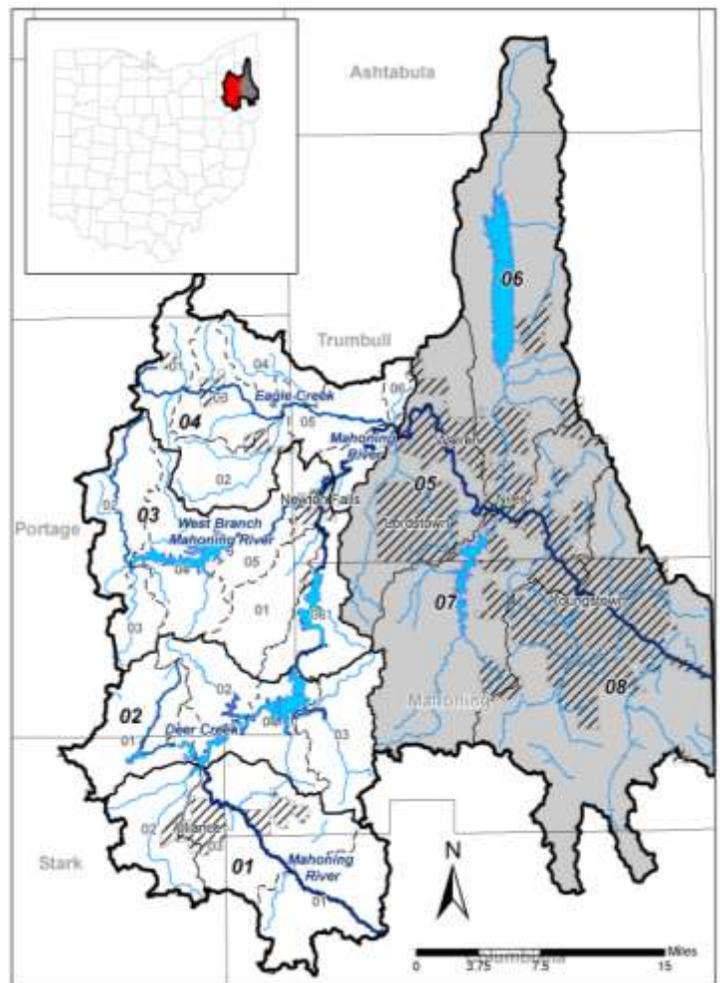
In 2006, comprehensive biological, chemical, and physical data were collected in the upper Mahoning River watershed by Ohio EPA scientists. The watershed's conditions were compared with state water quality goals to determine which streams are impaired, and how much

needs to be done to restore good stream habitat and water quality.

## What is the condition of the upper Mahoning River Watershed?

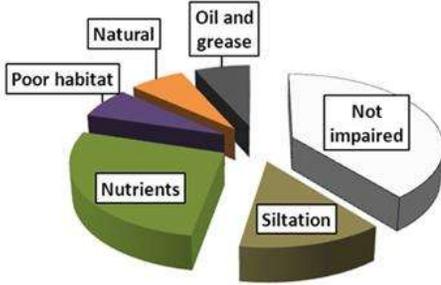
In terms of aquatic life uses, twenty-eight (38%) of the evaluated sites fully met the aquatic life use criteria, seventeen (23%) partially met and twenty-eight (38%) met none of the criteria. Only four of the sites surveyed met the recreation use criteria while the remaining 70 sites did not meet standards.

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

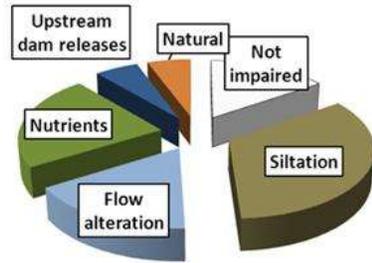


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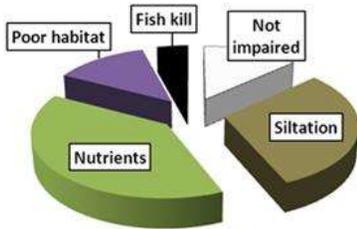
What are the problems?



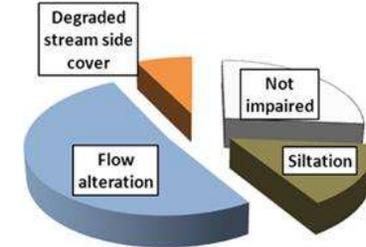
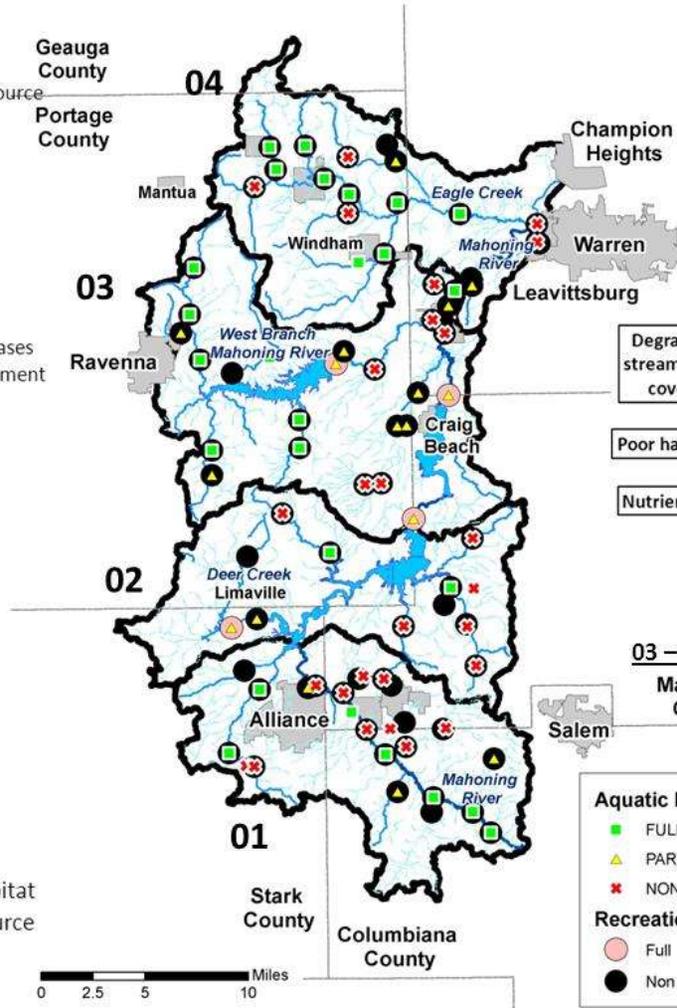
04 – Eagle Creek - Mahoning River



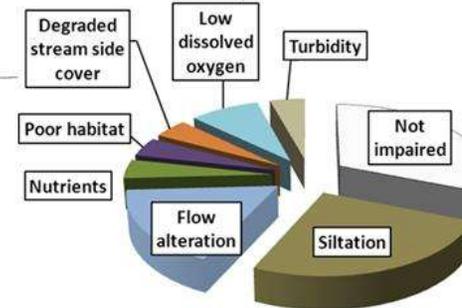
02 – Deer Creek - Mahoning River



01 – Headwaters Mahoning River



Mahoning River



03 – West Branch Mahoning River



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## How can the problems be fixed?

### 04 (Eagle Creek)

#### In Towns and Rural Residential Areas

- Improve home septic system treatment
- Improve point source treatment
- Remove or modify lowhead dams

#### On Farmland

- Manage to minimize nutrient losses from cropland
- Use cover cropping and conservation tillage
- Control sub-surface drainage
- Create wetlands and other runoff treatment areas
- Install streamside buffers
- Restore natural channel shape and habitat

### 01 (Headwaters Mahoning)

#### In Towns and Rural Residential Areas

- Improve home septic system treatment
- Improve point source treatment
- Abate urban run off

#### On Farmland

- Use cover cropping and conservation tillage
- Install grassed waterways
- Manage to minimize nutrient losses from cropland
- Livestock exclusion from streams
- Create wetlands and other runoff treatment areas
- Install streamside buffers
- Restore natural channel shape and habitat

### 03 (West Branch Mahoning)

#### In Towns and Rural Residential Areas

- Improve home septic system treatment
- Provide sewer service for unsewered communities
- Improve waste water collection (eliminate overflows)
- Abate urban run off
- Remove or modify lowhead dams

#### On Farmland

- Control sub-surface drainage
- Manage to minimize nutrient losses from cropland
- Create wetlands and other runoff treatment areas
- Install streamside buffers
- Restore natural channel shape and habitat
- Exclude livestock from streams

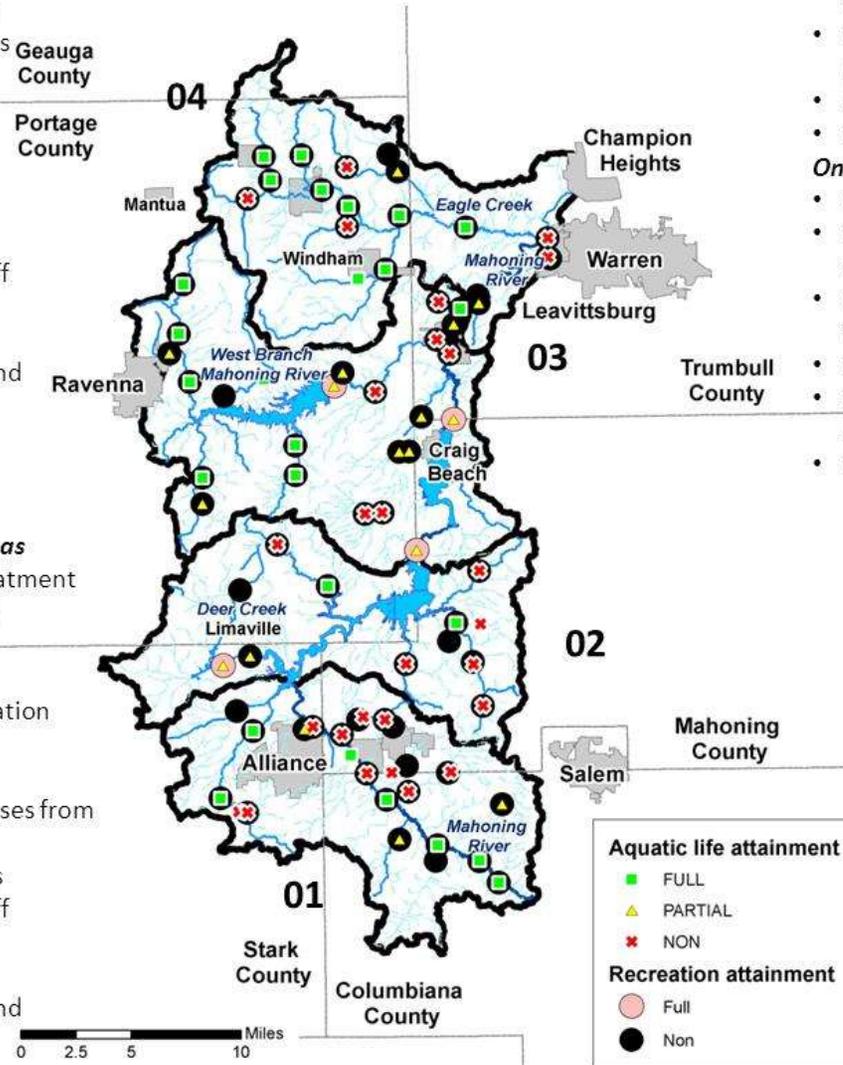
### 02 (Deer Creek and Mahoning)

#### In Towns and Rural Residential Areas

- Improve home septic system treatment
- Improve point source treatment

#### On Farmland

- Manage to minimize nutrient losses from cropland
- Use cover cropping and conservation tillage
- Create wetlands and other runoff treatment areas
- Control sub-surface drainage
- Restore natural channel shape and habitat and stream bank protection
- Livestock exclusion from streams



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

- ◆ **Reduce amount of inadequately treated sewage from home septic systems**
  - Work with homeowners to identify deficiencies with the condition and/or operation of their systems
  - Provide centralized sewer collection and treatment services to some areas where feasible
- ◆ **Reduce pollutant loading from waste water treatment systems**
  - Reduce phosphorus load discharged from waste water treatment plants
  - Fix waste water collection systems to reduce and/or eliminate overflows of untreated sewage
- ◆ **Reduce sediment and nutrient loading from the landscape, especially cropland**
  - Protect soil surface with cover crops and residues which also tie-up nutrients
  - Increase the retention of water in treatment areas such as wetlands, filter strips, or in the soil profile with controls on subsurface drainage systems
- ◆ **Improve the quality of stream channels and their corridors**
  - Facilitate floodplain connection and growth of riparian trees and vegetation

## What actions are needed to improve water quality?

There are a variety of reasons why streams in the upper Mahoning River watershed fail to meet water quality goals, so several types of actions are needed to improve and protect the watershed.

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 home septic treatment systems.
- Waste water treatment and collection systems.
- Pollutants in cropland runoff and subsurface drainage.

## 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.

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.

The Mahoning River Consortium is specifically dedicated to improving the quality of the Mahoning River watershed and has a membership of approximately eighty people and hundreds of direct contacts.

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>.

## How can I comment on the draft report?

The upper Mahoning River watershed draft TMDL report will be available for public review from June 15 through July 18, 2011, at <http://www.epa.ohio.gov/dsw/tmdl/MahoningRiverUpperTMDL.aspx>. Comments should be mailed to:

Bill Zawiski  
Northeast District Office  
2110 East Aurora Road,  
Twinsburg, Ohio 44087  
or emailed to [Bill.Zawiski@epa.state.oh.us](mailto:Bill.Zawiski@epa.state.oh.us)

After considering comments, Ohio EPA will submit a final document to U.S. EPA for approval.