

Status of Water Quality in Ohio: The 2016 Integrated Report

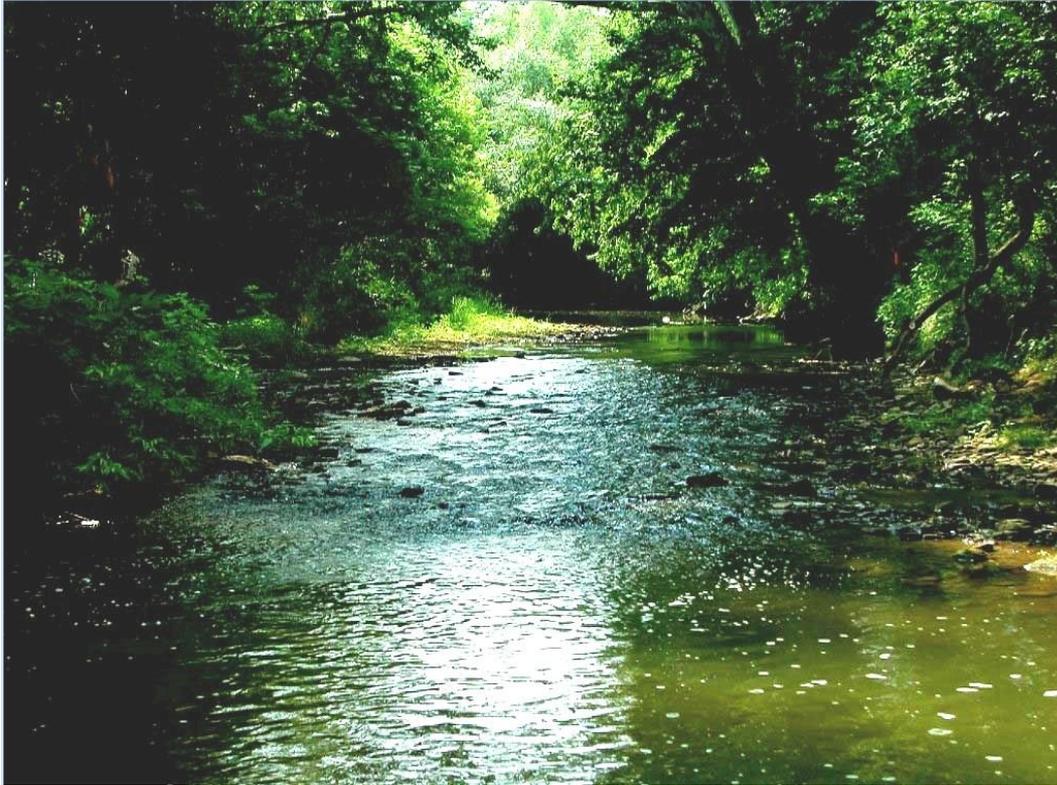
August 16, 2016



Today's Topics

- Overview of the 2016 Integrated Report
 - Purpose and requirements
 - Assessment overview
- Differences from the 2014 Integrated Report
- Lake Erie update
- Results and trends in Ohio water quality
- Impairment causes

Clean Water Act

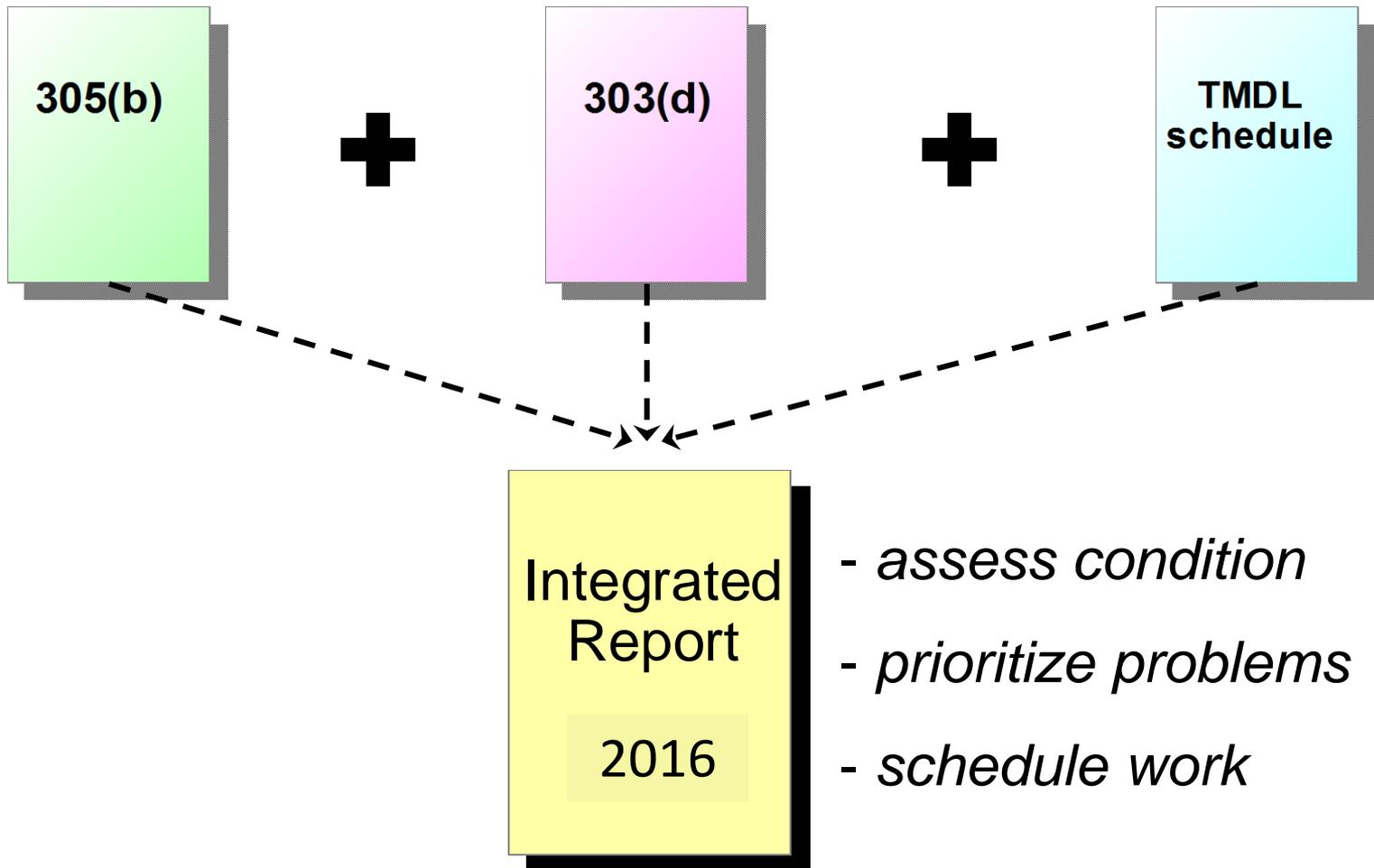


The goal is to restore and maintain the chemical, physical and biological integrity of the Nation's waters.

Relationship of the Integrated Report to the Clean Water Act (CWA)

- Fulfills two CWA reporting requirements:
 - Section 305 requires periodic reporting on the condition of a State's waters
 - Ohio has reported every two years since 1988*
 - Section 303(d) requires States to list and prioritize impaired waters
 - Ohio has reported every two years since 1992 (except 2000)*
- “Integrated” into a single report in 2002

Reporting/Listing in a Nutshell



What is a TMDL?

- TMDL: **T**otal **M**aximum **D**aily **L**oad: the maximum amount of a pollutant a water body can contain and still maintain water quality standards
- A written, quantitative assessment of water quality problems and contributing sources of pollution

What is a TMDL?

- 12 steps form a problem-solving process:

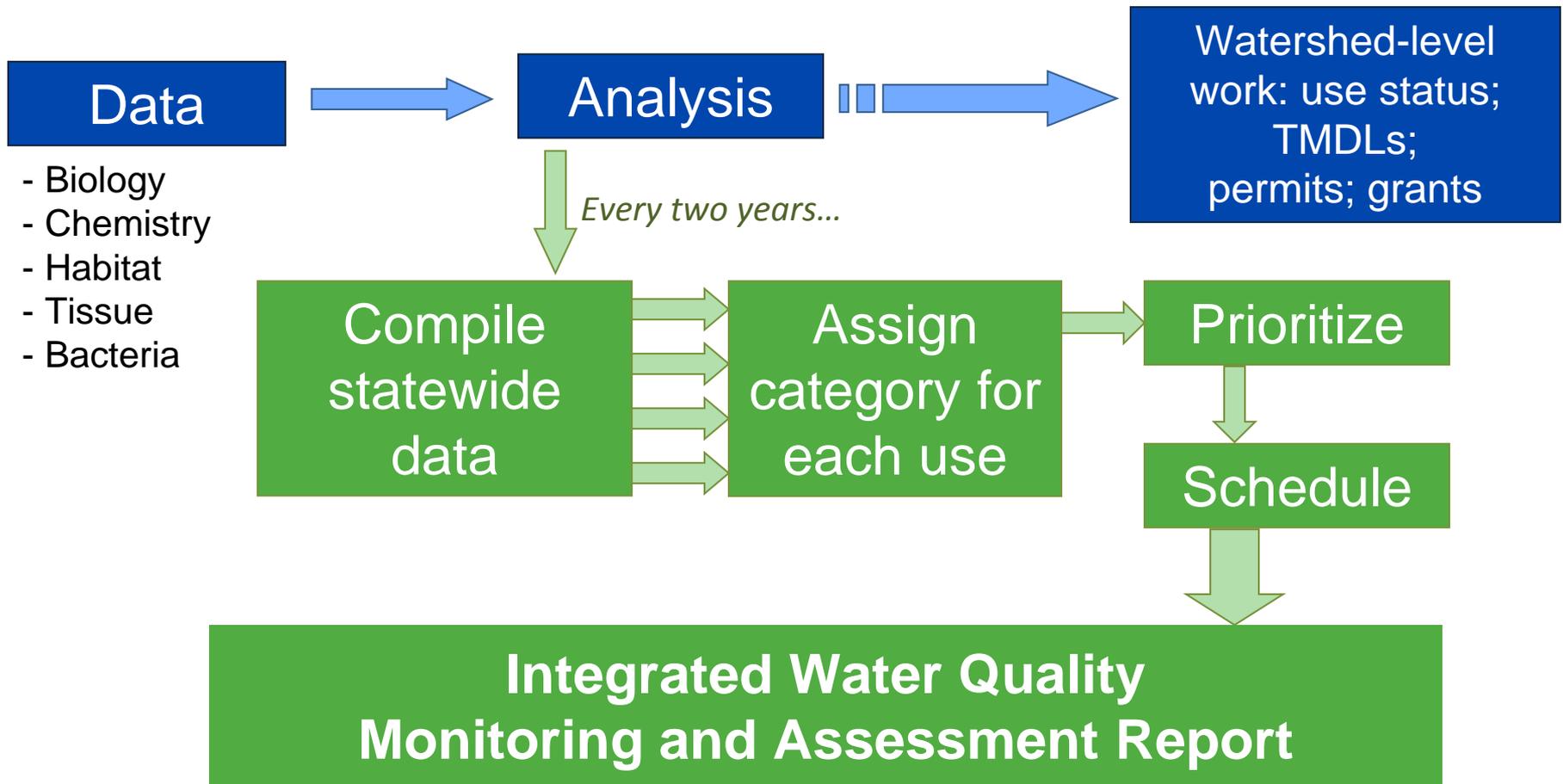
Assessment → Development → Implementation → Validation

- Essentially a planning and analysis tool; **does not provide additional authority**
- Once impaired waters are identified the state must take action to improve them – but *If waters reach attainment by other means, a TMDL is not necessary*

Integrated Report

- U.S. EPA provides guidance
- Report includes:
 - Methodology
 - Decision for each water body assessed
 - Data description (supports the listing of each impaired water)
 - Impairment causes and sources available online
 - TMDL and monitoring schedules
- U.S. EPA approves list of impaired waters (Section L4)

Integrated Report Process



Compile Statewide Data

- Each Integrated Report typically adds two new years' worth of data
 - In this report three years of data were used for Public Drinking Water Supply and Recreation uses
- Data are pulled from databases
 - Level 3 external data
 - Most data are collected by Ohio EPA
- Ohio EPA determines attainment at individual sites
 - Detailed information available in watershed reports
- Each use is assessed independently

Defining Assessment Units

- States define an “assessment unit,” then report on its condition
- Ohio defines three types:
 - Watershed units: 1,538 12-digit HUCs
Average drainage area: 27 square miles
 - Large river units: 38 pieces of 23 big rivers
Average length: 32 miles
 - Lake Erie units:
 - Three shoreline (western, central, islands)
 - Includes drinking water intake structures

Large Rivers vs. Watersheds: What's the Difference?

- Watersheds
 - Sites that drain less than 500 square miles
 - Best way to evaluate and solve problems
- Large rivers
 - Sites that drain more than 500 square miles
 - Not impacted in short-term by what's happening on immediate banks

Assign Category

- Site data collected into an assessment unit
- Methodologies based on water quality standards have been established for each use
- Analyzed for each use independently
 - Category 1: Fully supporting
 - Category 3: Can't tell, not enough information
 - Category 4: Not supporting and does not require action
 - Category 5: Not supporting and requires action

What's Changed Since 2014?

- Analysis and listings are based on 2013-2014 data, with some 2015 data
- A new National subcategory: 5-alternative
- “Near Term Priorities for Ohio EPA”
- New subsection dedicated to Ohio’s 303(d)/TMDL Program Vision
- New subsection discussing Ohio’s approach to addressing nutrients in Lake Erie
- Reorganization of information

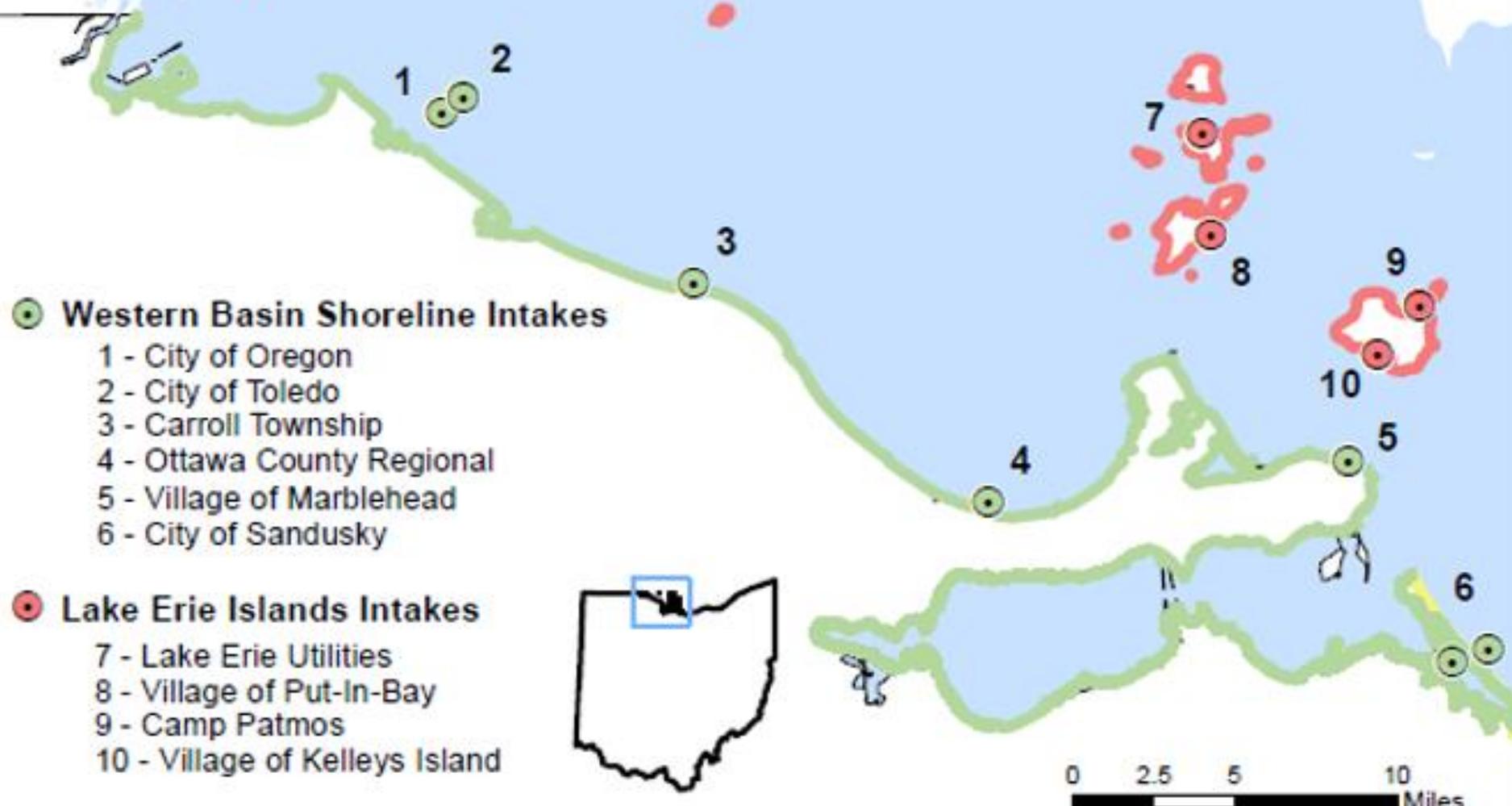
Near Term Priorities

- **Tappan Lake** in Harrison county (upper Little Stillwater Creek)
- **W.H. Harsha Lake** in Clermont County (Lucy Run - East Fork Little Miami River)
- **Clyde/Beaver Creek Reservoir** in Seneca County (Beaver Creek, Green Creek)

Lake Erie

- All three assessment units (western, islands and central shorelines) are listed as impaired for **Human Health** (fish tissue), **Public Drinking Water Supply** and **Aquatic Life** use; western and central shorelines are listed as impaired for **Recreation** use
- The shoreline units include Public Drinking Water Supply intake zones

Western Basin and Islands



Western Basin Shoreline Intakes

- 1 - City of Oregon
- 2 - City of Toledo
- 3 - Carroll Township
- 4 - Ottawa County Regional
- 5 - Village of Marblehead
- 6 - City of Sandusky

Lake Erie Islands Intakes

- 7 - Lake Erie Utilities
- 8 - Village of Put-In-Bay
- 9 - Camp Patmos
- 10 - Village of Kelleys Island

Western Basin Shoreline

Lake Erie Islands

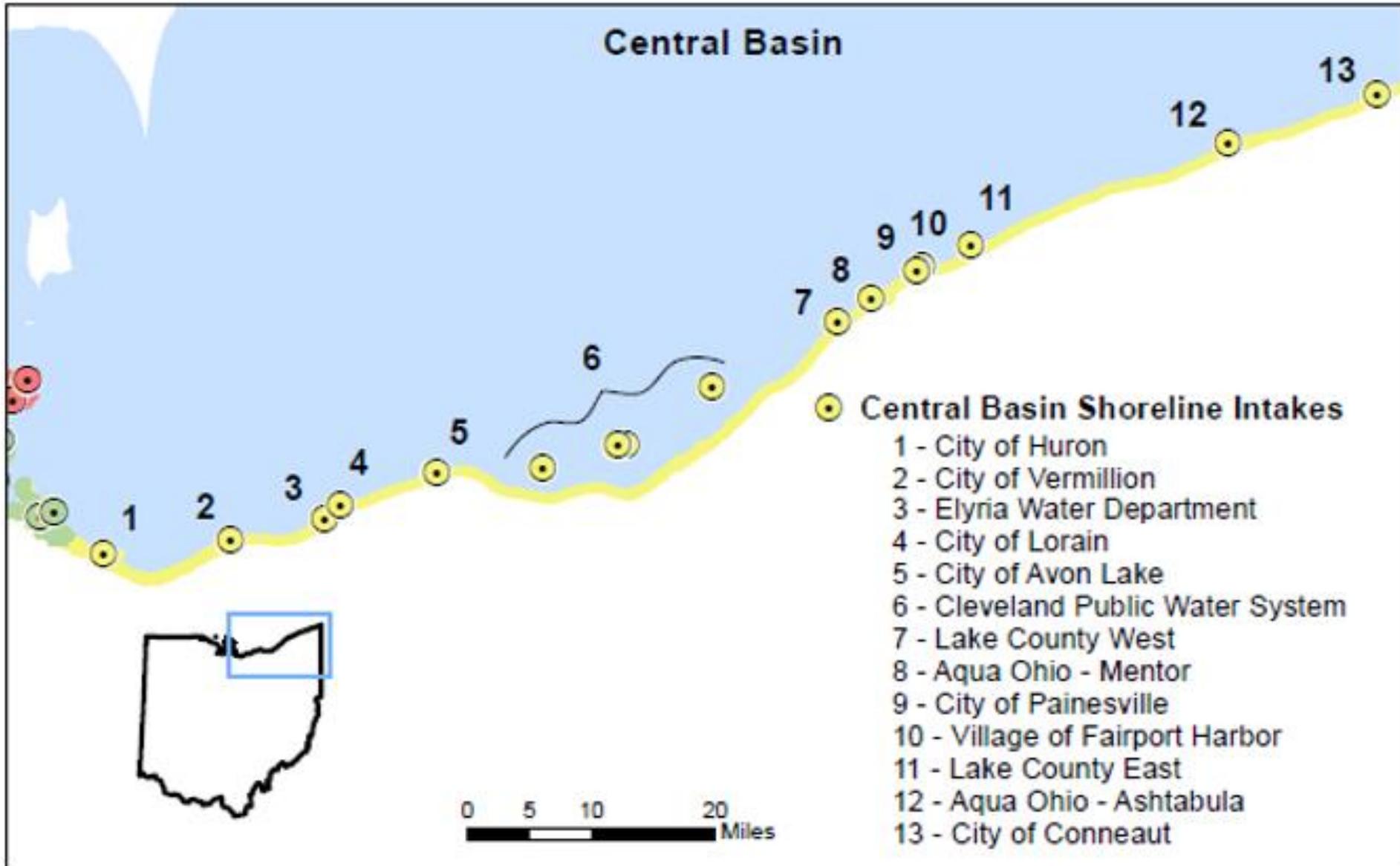
Central Basin Shoreline



Western Basin Shoreline

Lake Erie Islands

Central Basin Shoreline



Lake Erie

Ohio is actively addressing nutrients in Lake Erie

- Great Lakes Water Quality Agreement
- Great Lakes Commission: Lake Erie Nutrient Targets (LENT) Working Group
- Lake Erie Collaborative Agreement
- TMDLs for Lake Erie Watershed

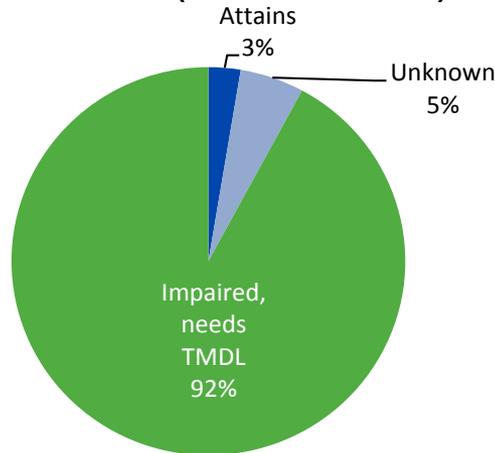
Lake Erie

- Statewide Nutrient Reduction Strategy
- GLRI Demonstration and Nutrient Reduction Projects
- Various legislation
 - Ohio SB 1; Ohio SB 150; Ohio HB 64
 - Ohio Clean Lakes Initiative
 - Healthy Lake Erie Initiative
- Targeted Funding to Ohio Public Water Systems and WWTPs

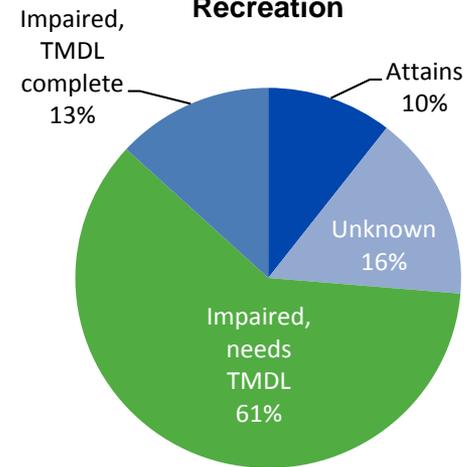
Large River Results by Beneficial Use

(% of assessment units indicated by status)

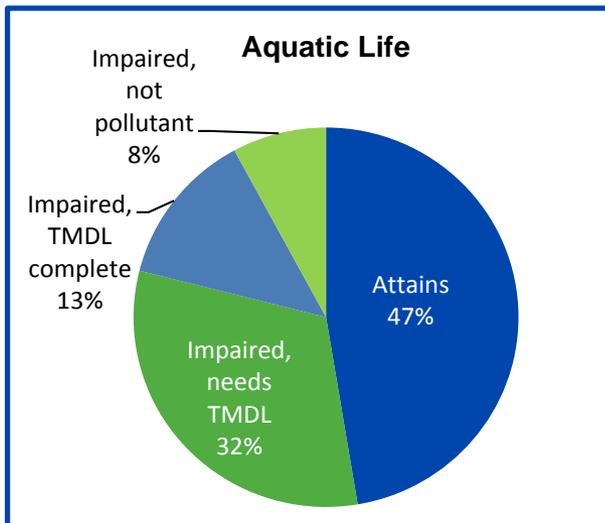
Human Health (fish contaminants)



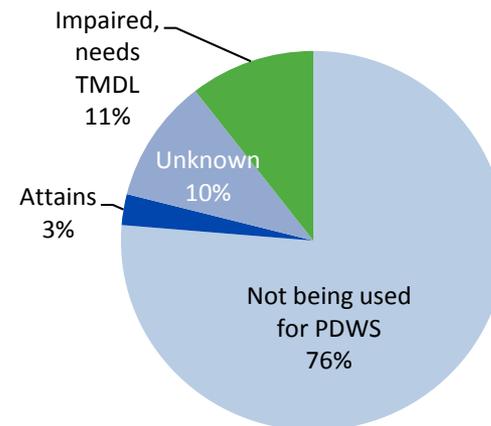
Recreation



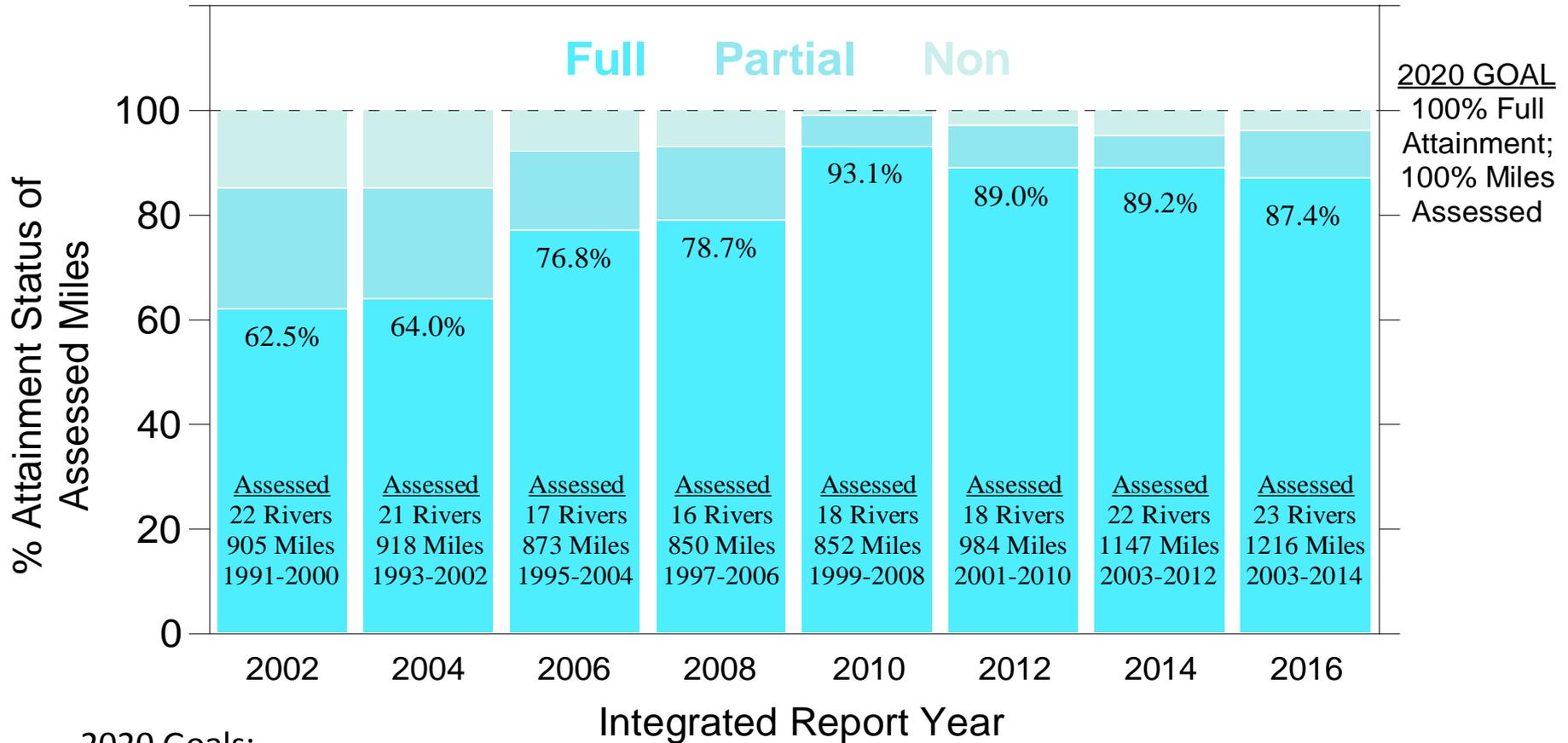
Aquatic Life



Public Drinking Water Supply



Aquatic Life Trends: Large Rivers



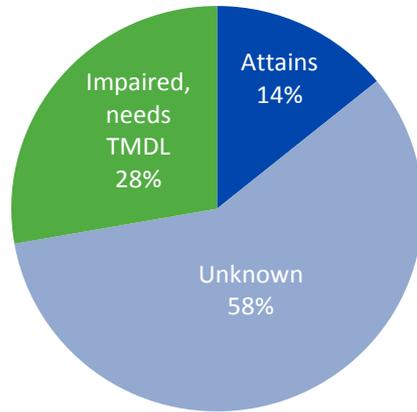
2020 Goals:

- 100% Full Attainment
- 100% Miles Assessed

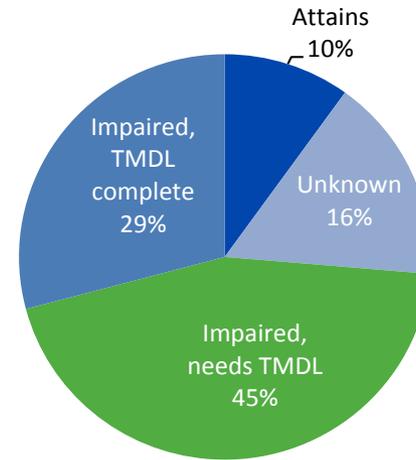
Watershed Results by Beneficial Use

(% of assessment units indicated by status)

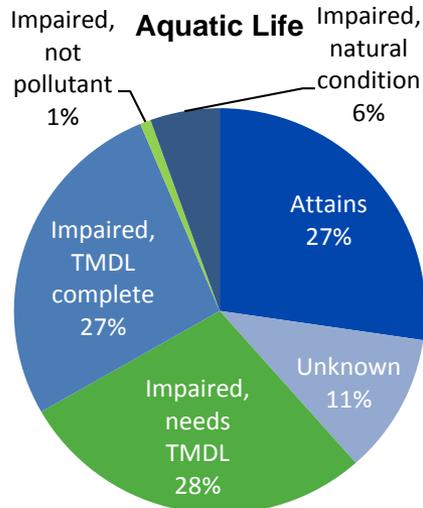
Human Health (fish contaminants)



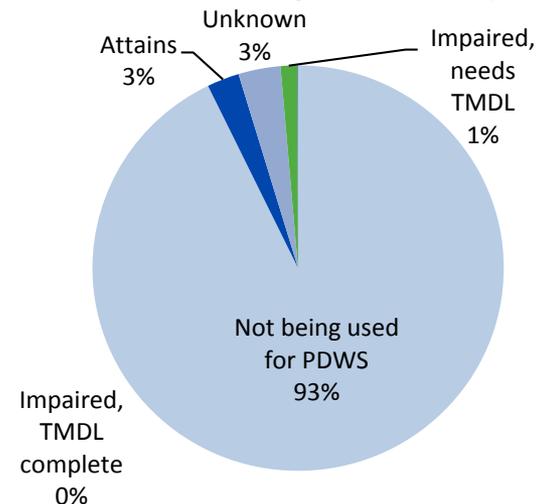
Recreation



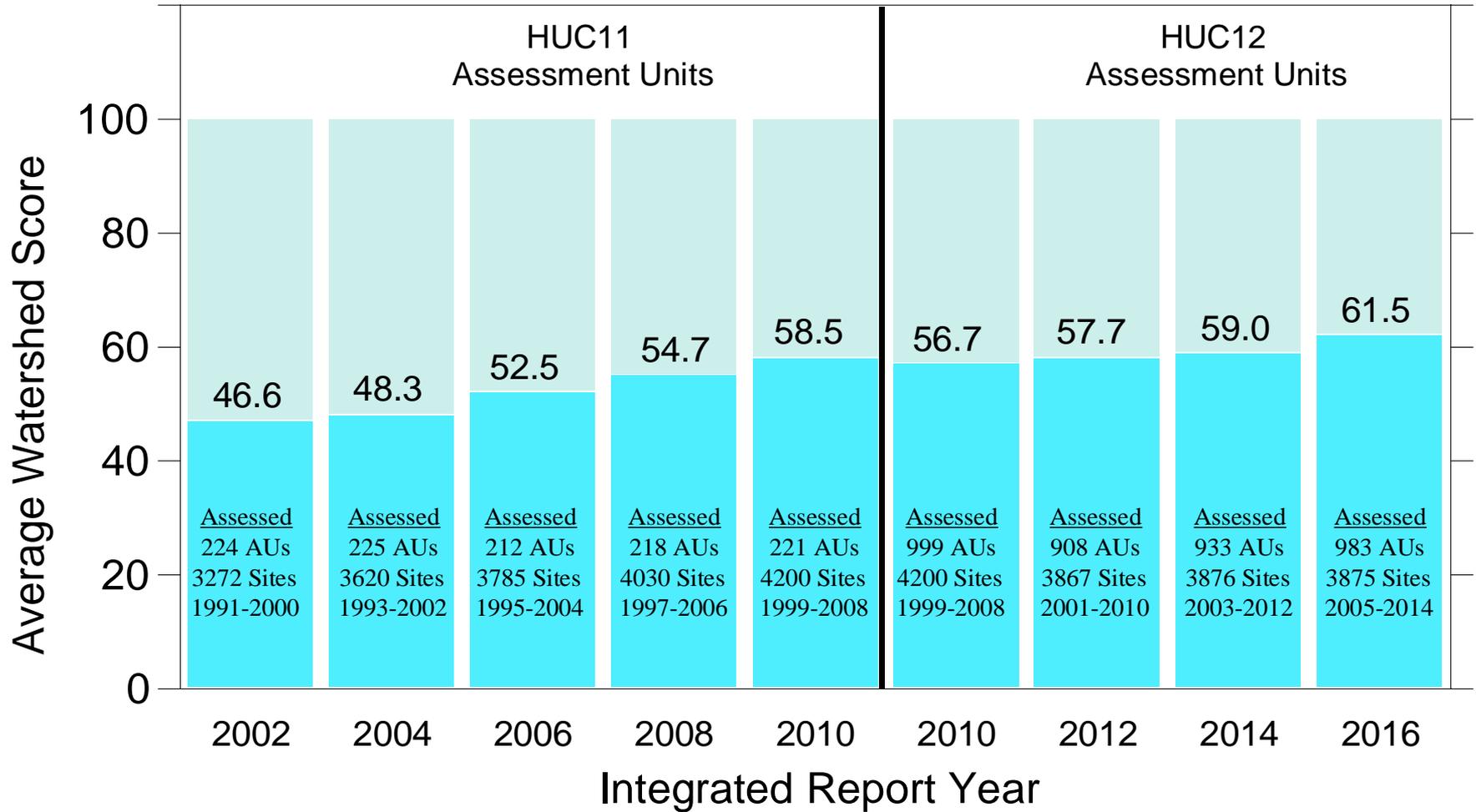
Aquatic Life



Public Drinking Water Supply



Aquatic Life Trends: Watersheds



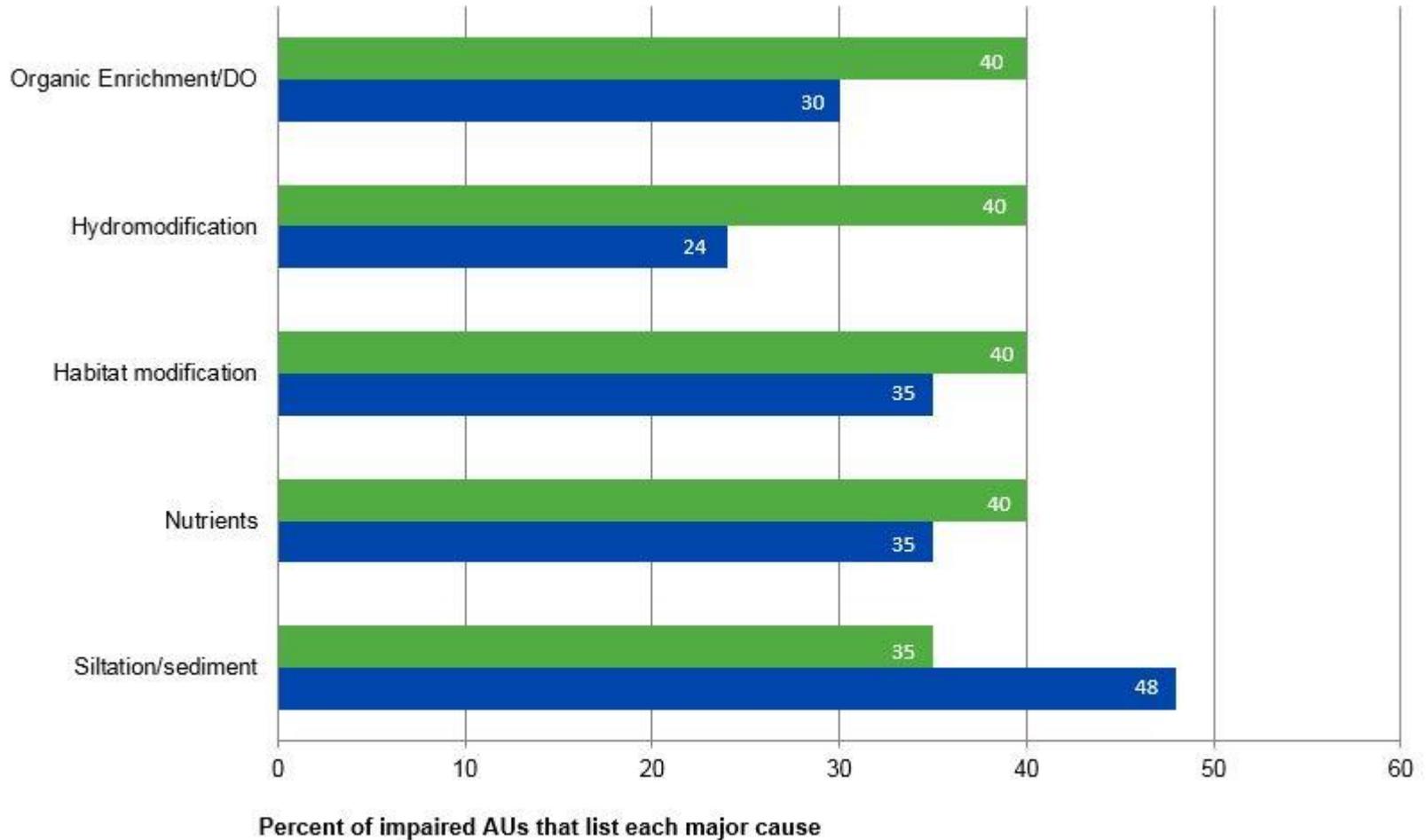
What's Causing the Problems?

Most aquatic life impairment is caused by **land disturbances** related to agriculture activities and urban development.



Five Common Aquatic Life Causes

Percent of impaired assessment units that list each major cause



■ Large River ■ Watershed

Hydromodification



Examples:

- stream impoundments (e.g., low-head dams)
- agricultural drainage systems (e.g., field tiles)
- urbanization (e.g., “hardening”)

Streams impacted by hydromodification:

Large Rivers 40% ↑

Watersheds 24% ↓

Organic Enrichment and Dissolved Oxygen



Examples:

- wastewater treatment plants
- home sewage treatment systems
- livestock manure discharges

Streams impacted by organic enrichment:

Large Rivers 40% ↓
Watersheds 30% ↓

Habitat Modification



Examples:

- removal of riparian vegetation
- channelization
- stream bank modifications
- culverting

Streams impacted by habitat modification:

Large Rivers 40% ↓
Watersheds 35% ↓

Nutrients



Examples:

- crop fertilization
- urban runoff (e.g., lawn fertilizers)

Streams impacted by nutrients:

Large Rivers 40% ↓
Watersheds 35% ↓

Silt and Sediment

Examples:

- construction
- unrestricted livestock access
- overland erosion



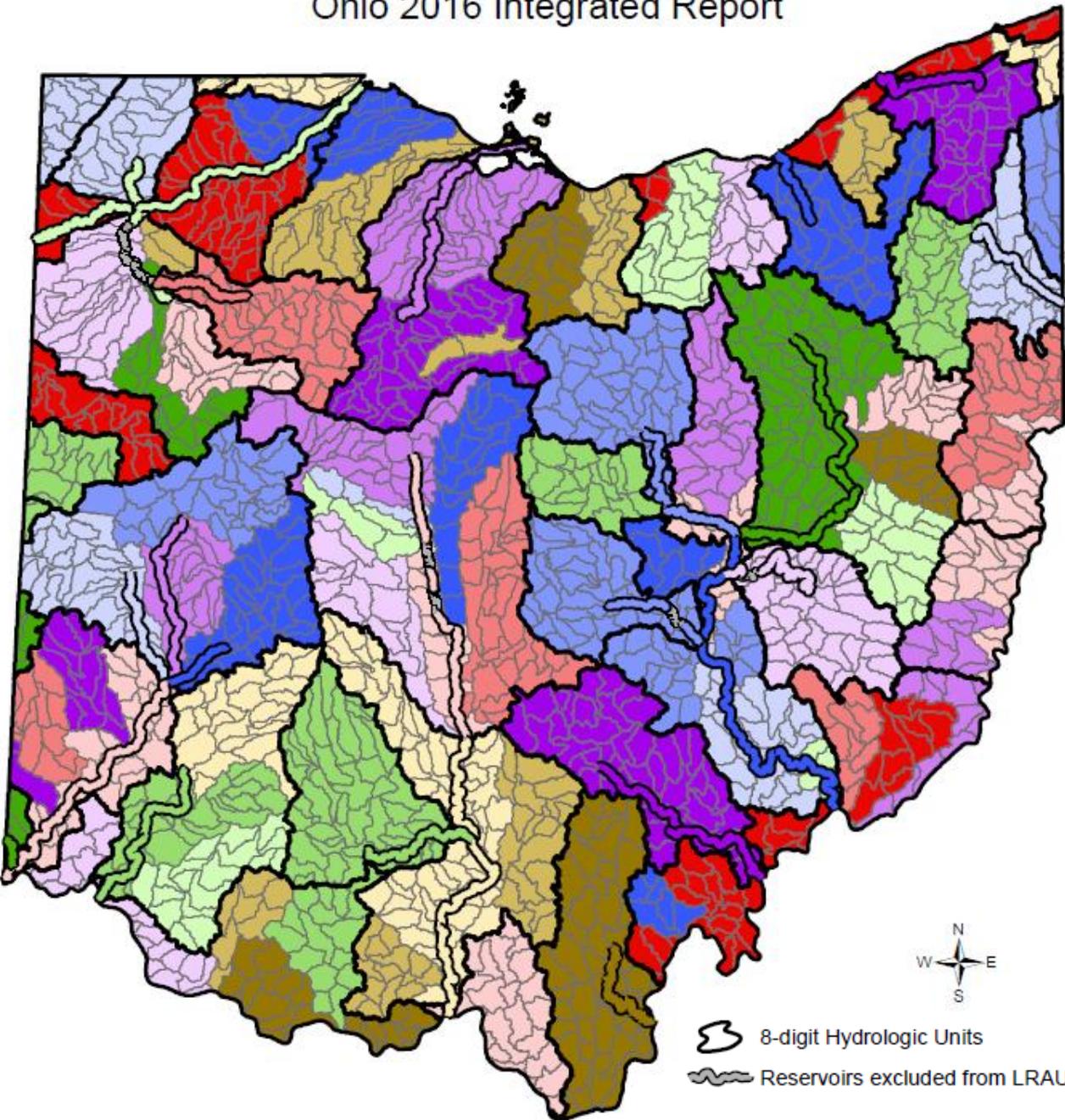
Streams impacted by silt and sediment:

Large Rivers 35%↑

Watersheds 48%↓

Future Monitoring

- Expected, subject to change
- 2016 watersheds:
 - Huron River
 - Conotton Creek
 - SW Ohio R tribs
 - Raccoon Creek
 - Symmes Creek



	2015		2020		2025
	2016		2021		2026
	2017		2022		2027
	2018		2023		2028
	2019		2024		2029

Comments on 303(d) List

Email: dsw.webmail@epa.ohio.gov

Mail: Ohio EPA, Division of Surface Water
Attn: 303(d) Comments
P.O. Box 1049
Columbus, Ohio 43216-1049

Written comments on the 303(d) list must be received by the close of business on **August 29, 2016**. Comments received after this date may be considered as time and circumstances allow.

