

# Ohio's Domestic Action Plan 2023

## Public Workshop

*April 26, 2024*



Department of Agriculture

Department of Natural Resources

Department of Health

Environmental Protection Agency

Lake Erie Commission

# Agenda Overview

Welcome

Implementation Efforts

- Overview of the Ohio Domestic Action Plan (OLEC)
- Progress on Implementing Agricultural BMPs through H2Ohio (ODA)
- Progress on Creating and Enhancing Wetlands through H2Ohio (ODNR)
- Role of the Maumee River Watershed Nutrient TMDL (Ohio EPA)
- Watershed Planning Efforts (Ohio EPA)
- USDA NRCS Implementation Update

What is the status of HABs and nutrient levels in the lake and its tributaries in Ohio? (OLEC)

What's next? (OLEC)

Close

# Focus in Ohio's DAP *four sets of actions:*

Promoting Clean and Safe Water in Lake Erie:  
Ohio's Domestic Action Plan 2023 to Address Nutrients



In accordance with  
the Great Lakes Water Quality Agreement  
January 2024



Department of Agriculture  
Department of Natural Resources  
Department of Health  
Environmental Protection Agency  
Lake Erie Commission



Agricultural best management practices  
(BMPs);



Wetland restoration and enhancements;

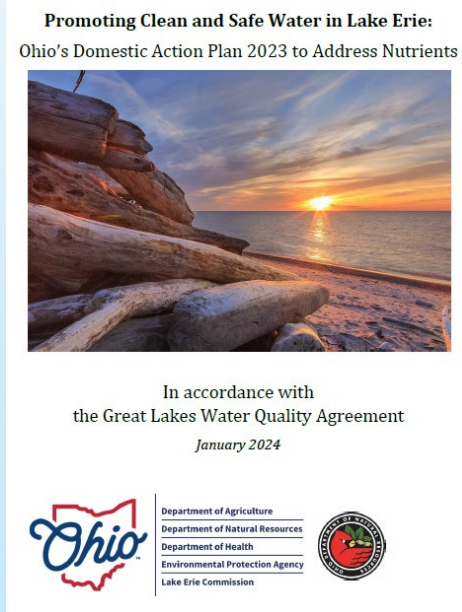


Community support for home sewage  
treatment system remediation;



Watershed planning, including a distribution of  
the load reduction in the Maumee River  
watershed.

# Additional Actions in Ohio's DAP:



TMDLs;



Support Actions including  
Monitoring, Tracking, Reporting,  
Research, Modeling, and Outreach;

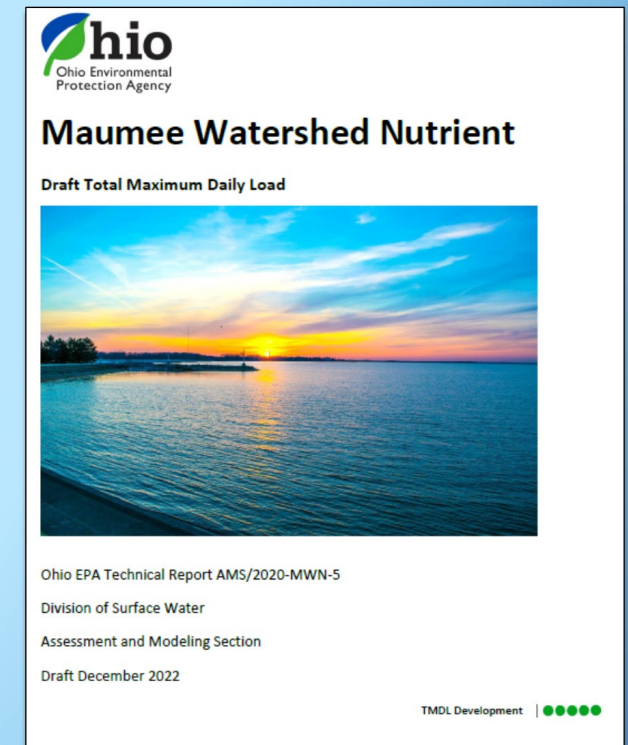


Partner Actions.

# Ohio Domestic Action Plan 2023: What's New

- Project and program updates from H2Ohio efforts and other agency specific changes
- Target setting: Portage new target, discussion for Huron and Grand
- Post-TMDL development: revision of farfield loads and related info
- Incorporate new info from and ideas for research & modeling
  - New ideas for studying prioritization of practices
  - Technology solutions

H2Ohio

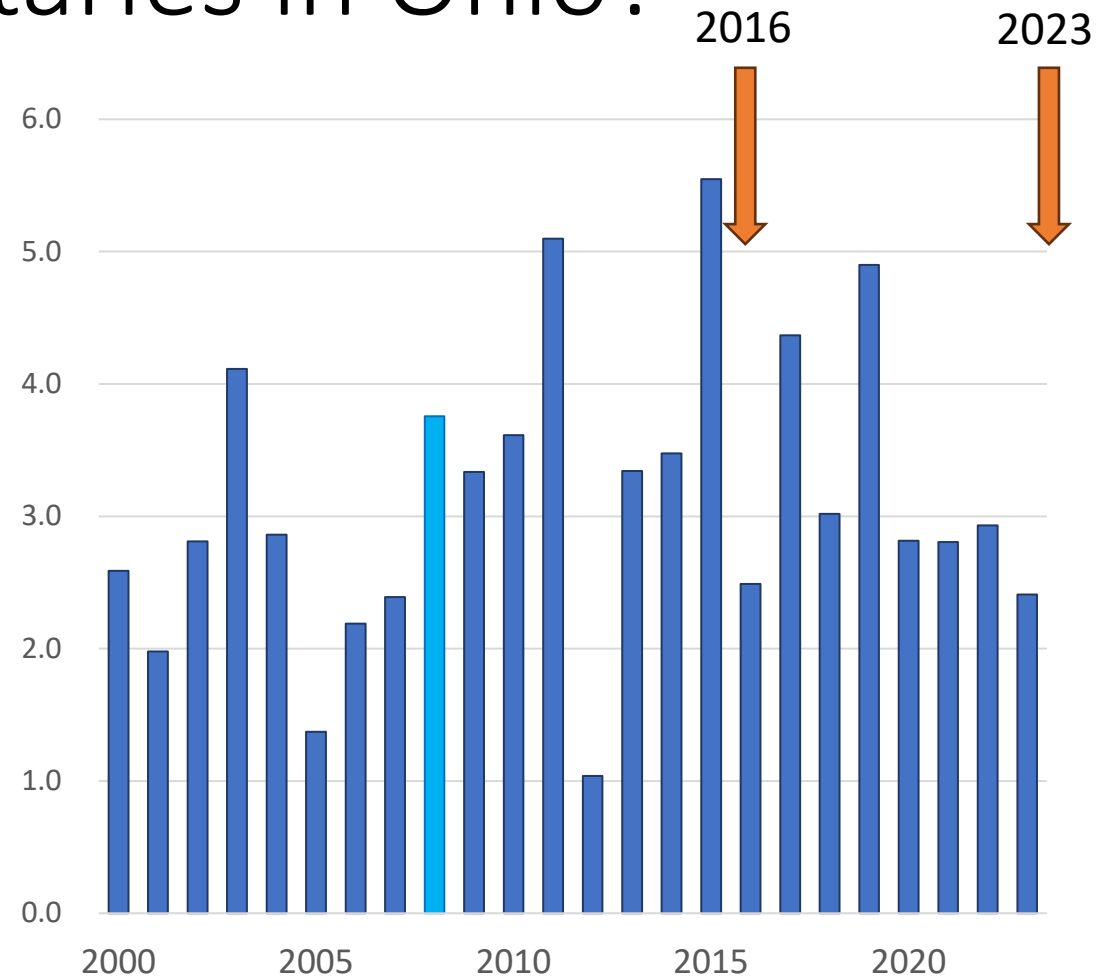




# What is the status of HABs and nutrient levels in the lake and its tributaries in Ohio?

First, keep in mind:

- The amount of rainfall/discharge is a significant driver
  - 2023 was about 36% less than 2008
- We do not currently have a good method to separate rainfall effects from management effort effects
- Both load and concentration are important
- Bioavailable phosphorus is part of both TP and DRP and is used for the HAB Forecast and HAB Severity Index, but the targets are not set for bioavailable phosphorus

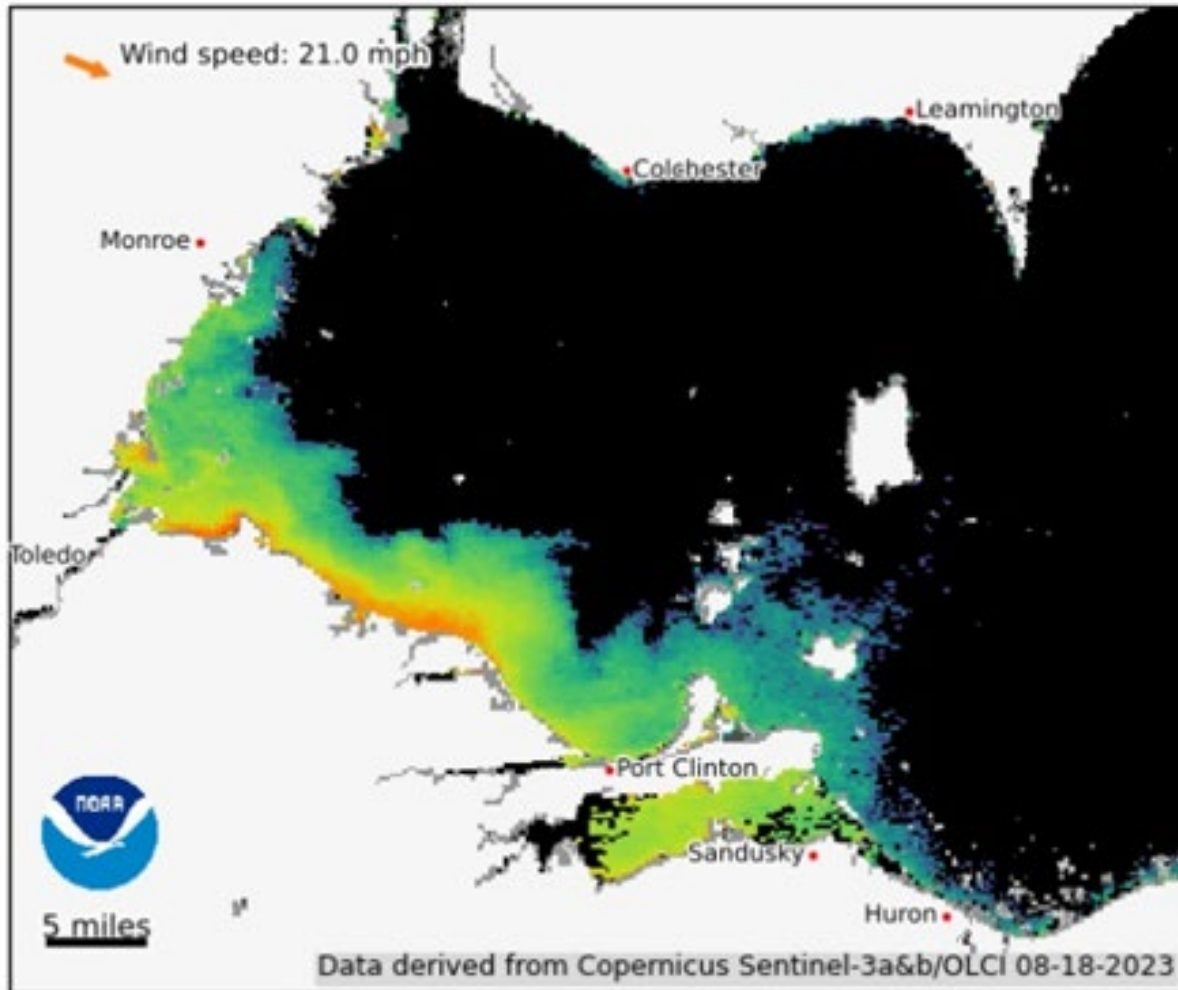


Discharge (or flow) at Maumee Waterville by year

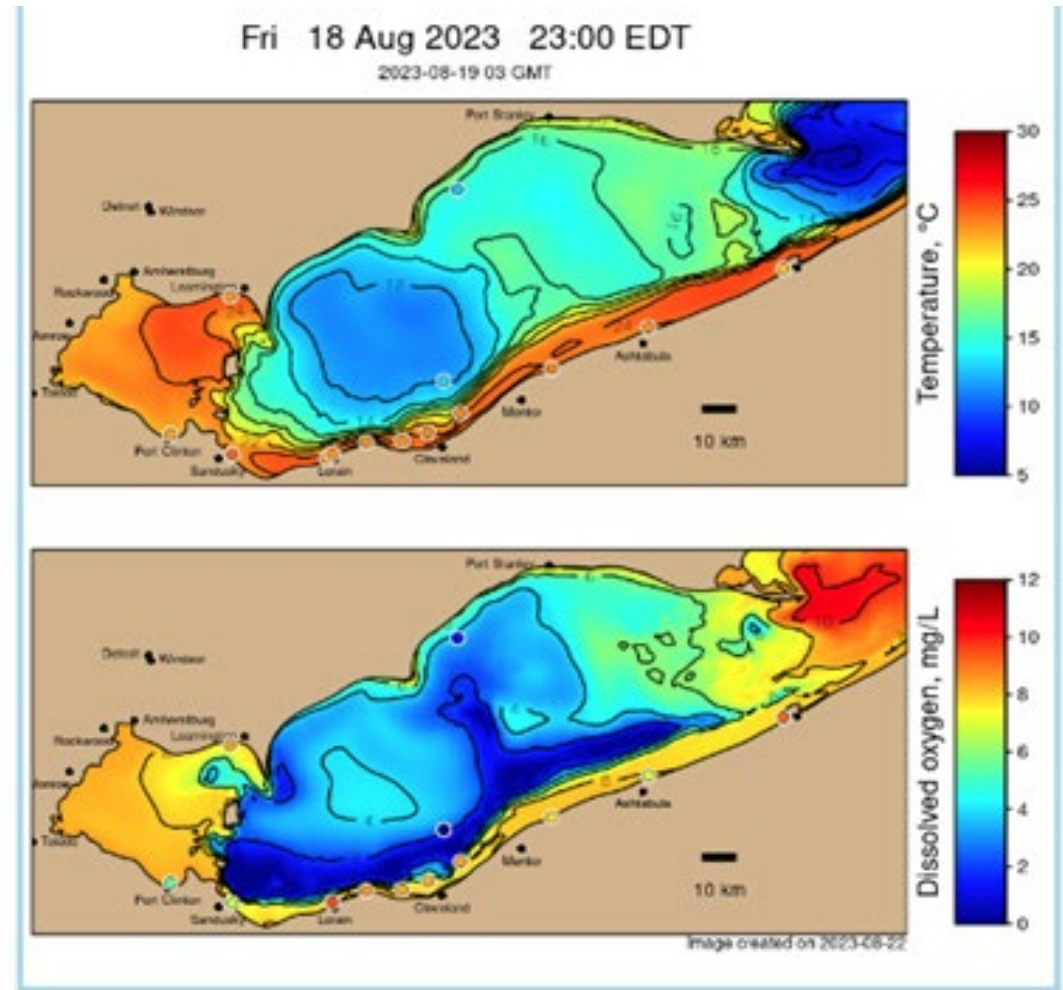
# Maximum bloom severity was August 10-19, 2023

## Hypoxia is shown for the same period

Red = highest intensity of bloom

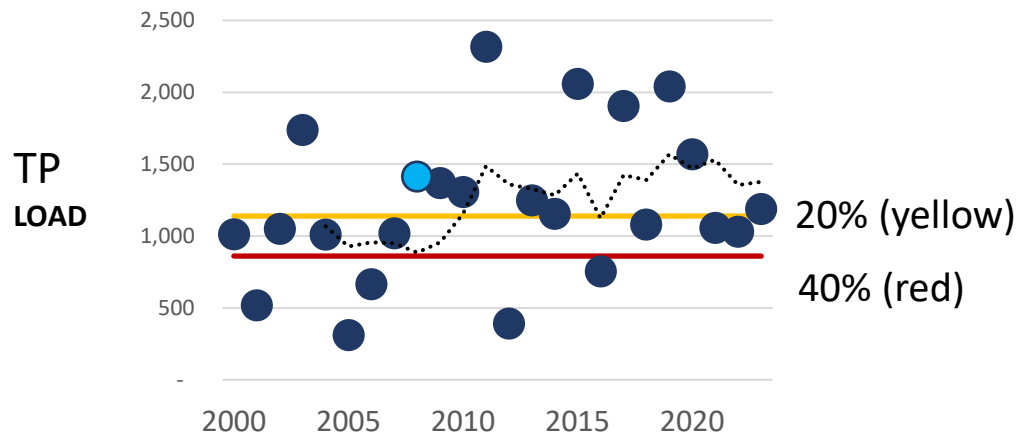
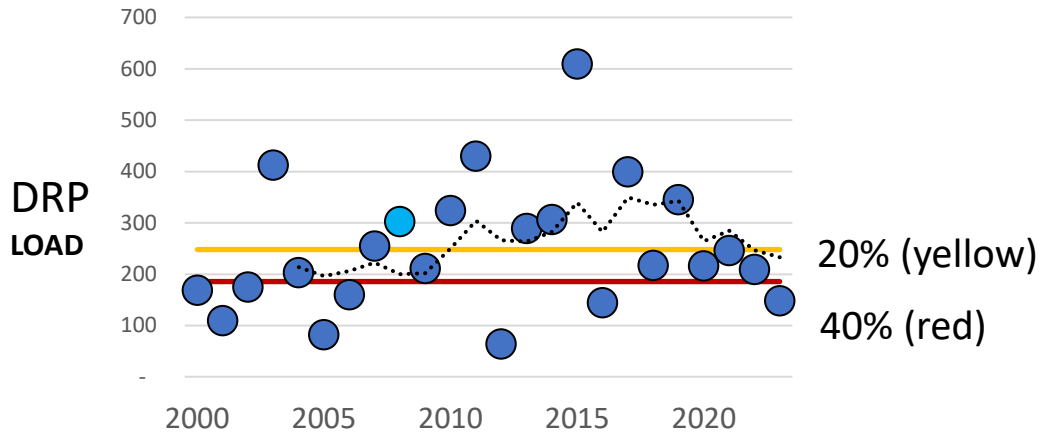


Blue = lowest temperature or oxygen levels

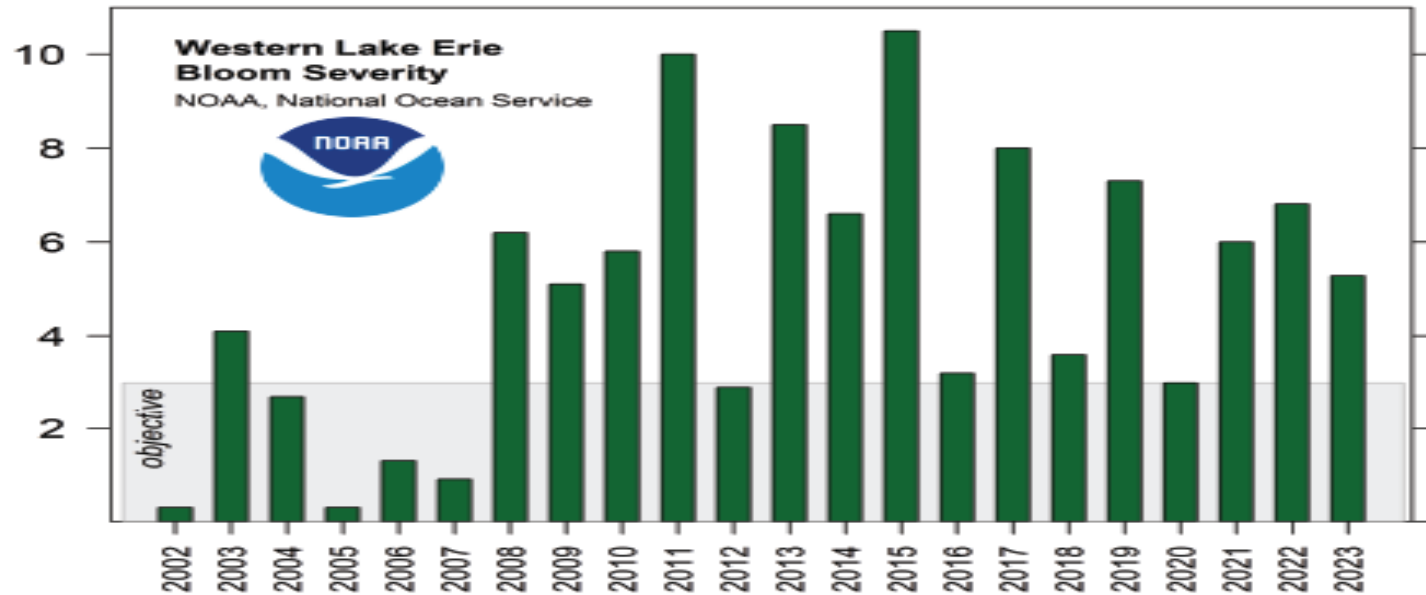
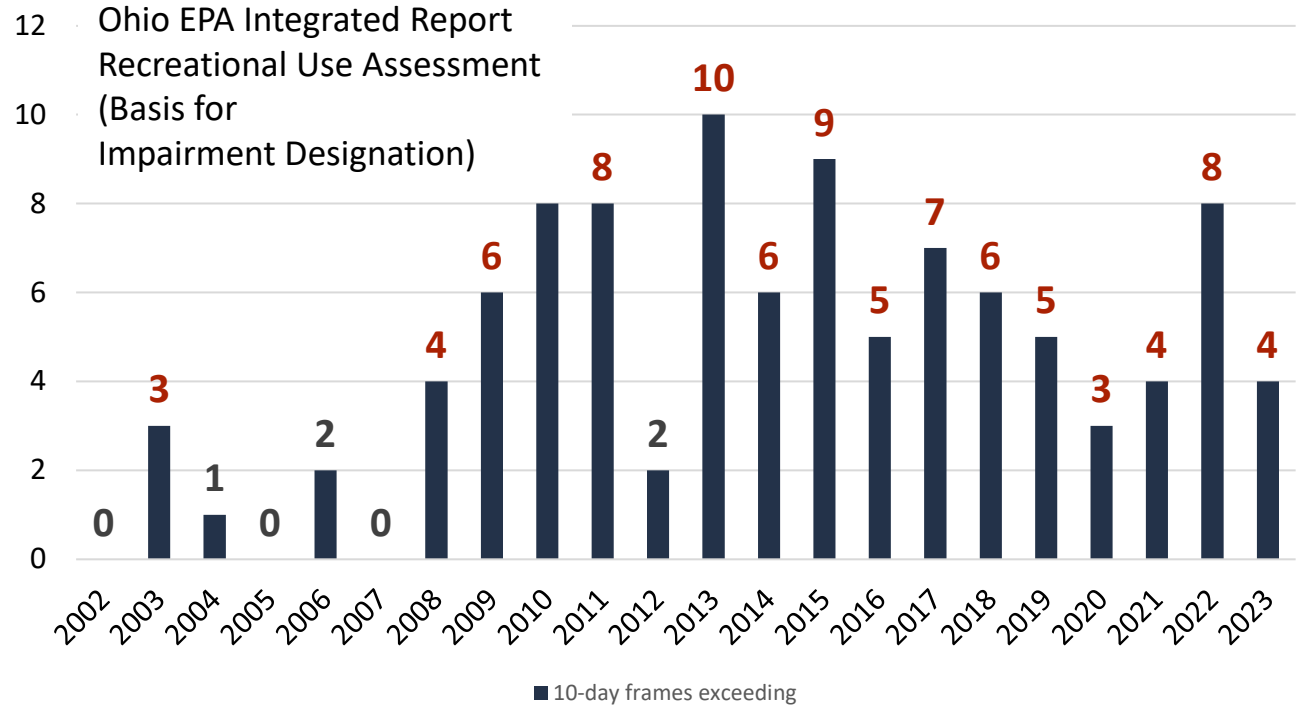




Lake Erie HAB status is variable but (mostly) still exceeds objectives or targets.

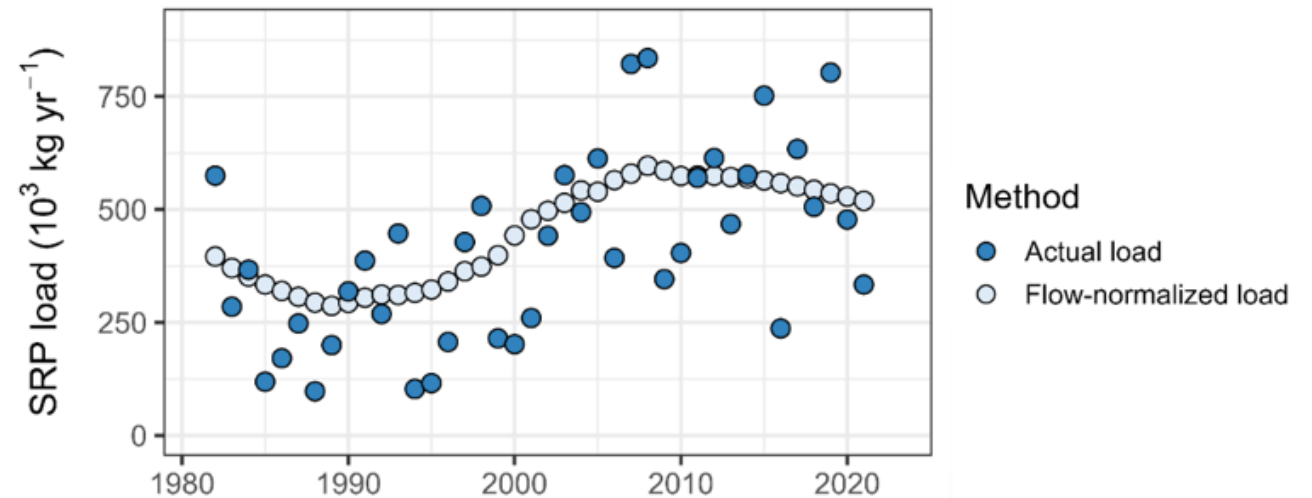
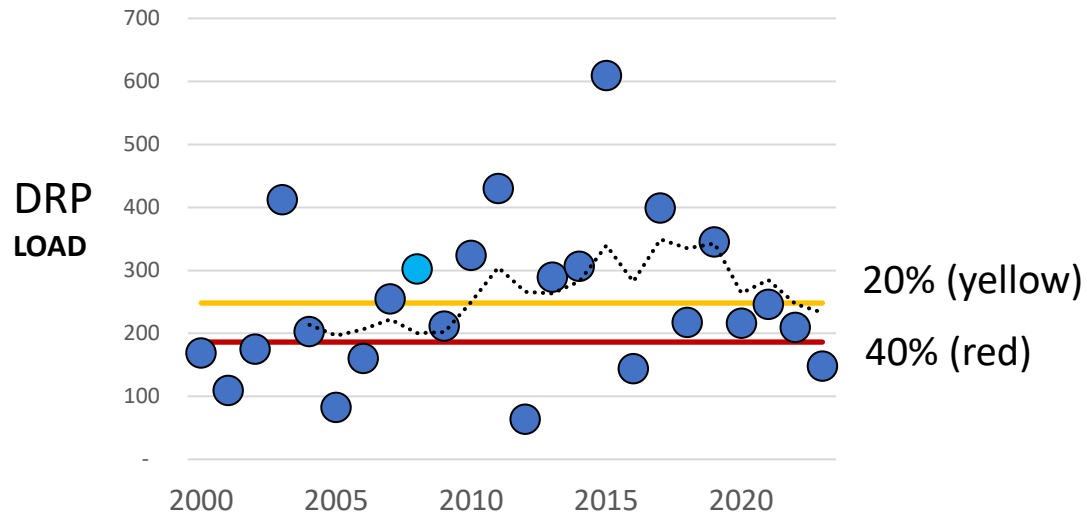


Spring loads at Maumee Waterville by year



# New methods are being used to look at trends (removing flow)

## Loads at Maumee Waterville by year



## Spring loads at Maumee Waterville by year

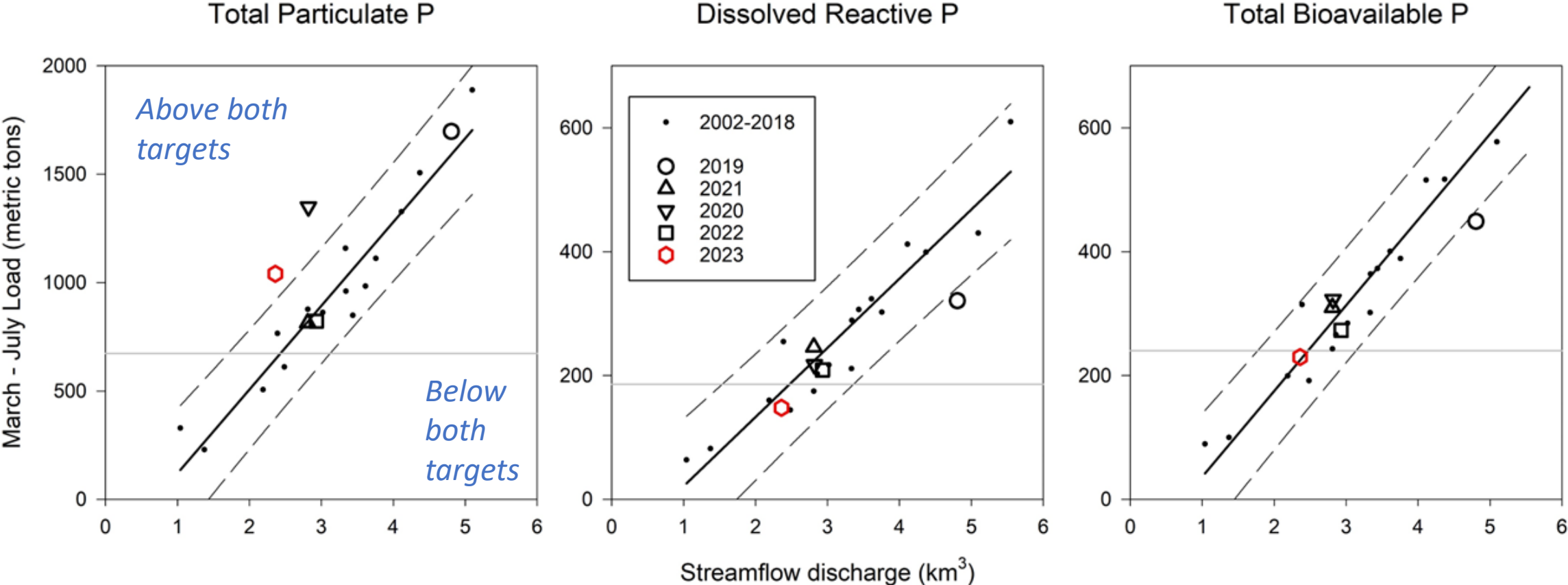
(same chart as previous slide)

Weighted Regression for Time, Discharge, and Season (WRTDS)

- **ANNUAL loads** (but most discharged during spring)
- This is another way to attempt to remove the effect of flow and see if management actions are having an effect.
- Method developed by USGS for Chesapeake Bay
- *Source: F. Rowland, updated from Rowland et al. (2021).*

# Comparing expected to actual loads (considering flow)

TP loads above and below expected; DRP loads below expected 4/5 past years; total Bioavailable close to expected but close to load target

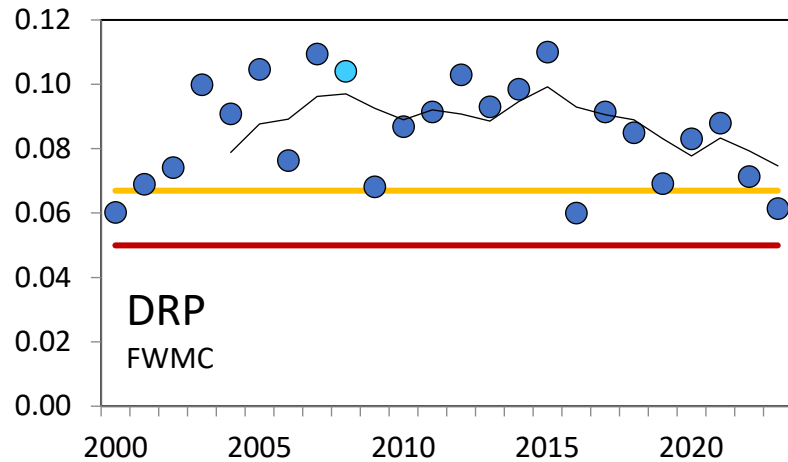


Gray horizontal line: 40% reduction target; black solid line: expected load based on target concentration

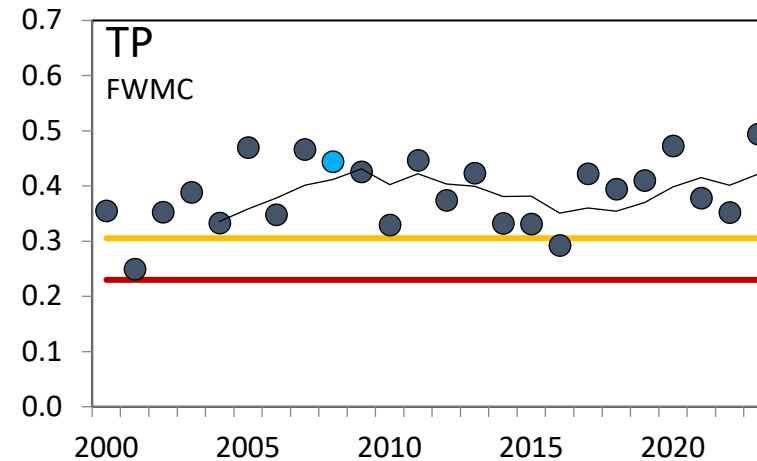
From: Dr. Laura Johnson NCWQR Heidelberg University - data for Maumee Waterville

# Flow Weighted Mean Concentrations - another measure of trends

DRP concentrations seem to be trending downward; TP no trend.



20% (yellow)  
40% (red)



20% (yellow)  
40% (red)

## Concentrations at Maumee Waterville by year

Red horizontal line: 40% reduction target; black solid line: running average; concentrations in mg/L. Bright blue dot is 2008.



# Next Steps

- Continue H2Ohio Program work
- Continue to implement Maumee TMDL
  - Biennial reporting
- US Federal DAP in progress

Thank you for your attention

H2Ohio

