

# Governance Challenges to Addressing Algal Blooms in the Great Lakes:

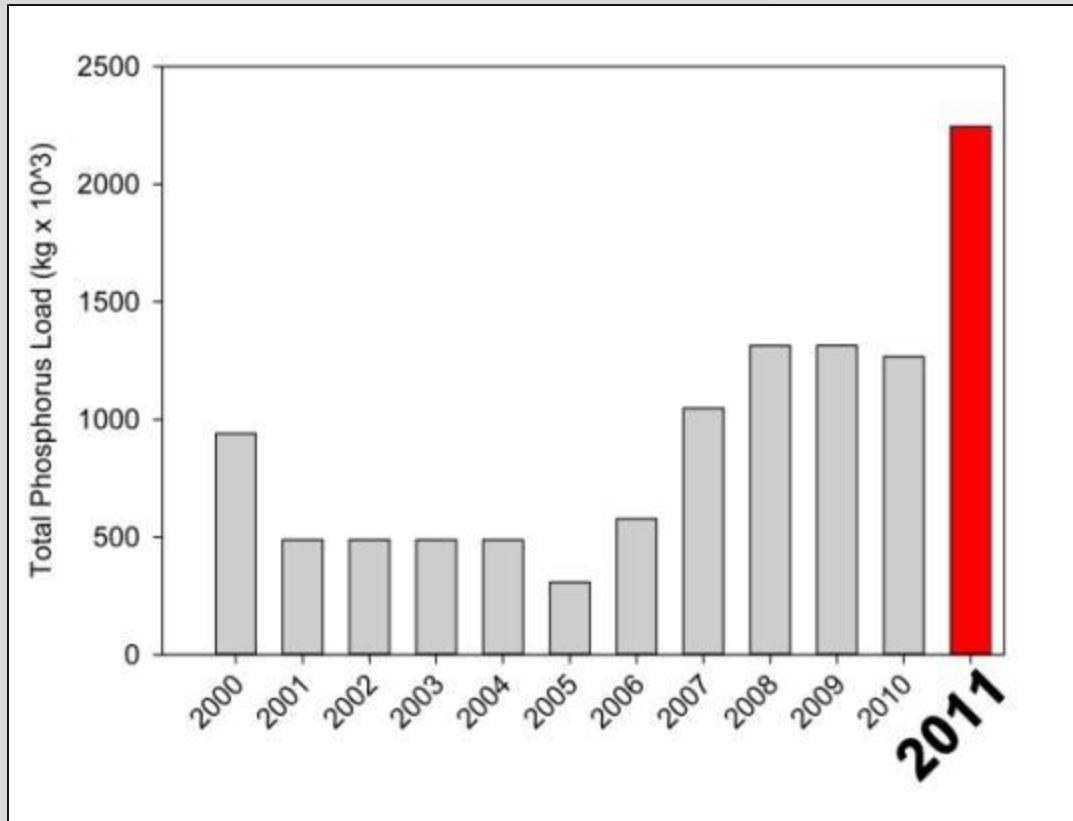
## EPA-Great Lakes National Program Office Perspective

T. Kevin O'Donnell  
NCER 2013  
August 2, 2013



# 2011 Spring Phosphorus & Harmful Algal Blooms (HABs)

Maumee River @ Waterville, Ohio (March-June)



Lake Erie  
October 9, 2011

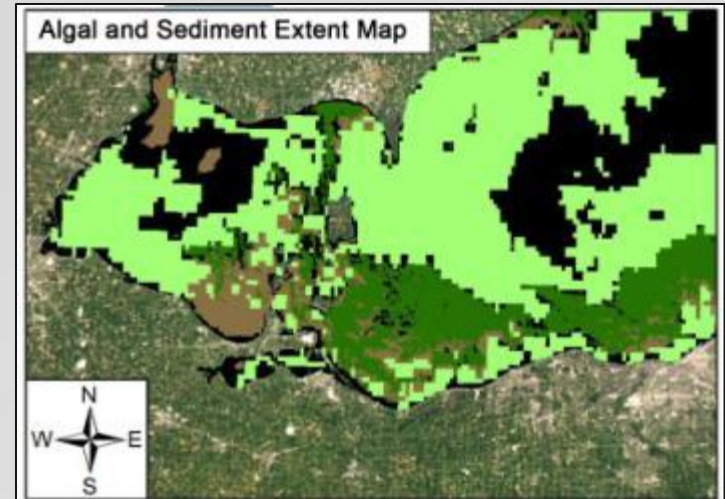


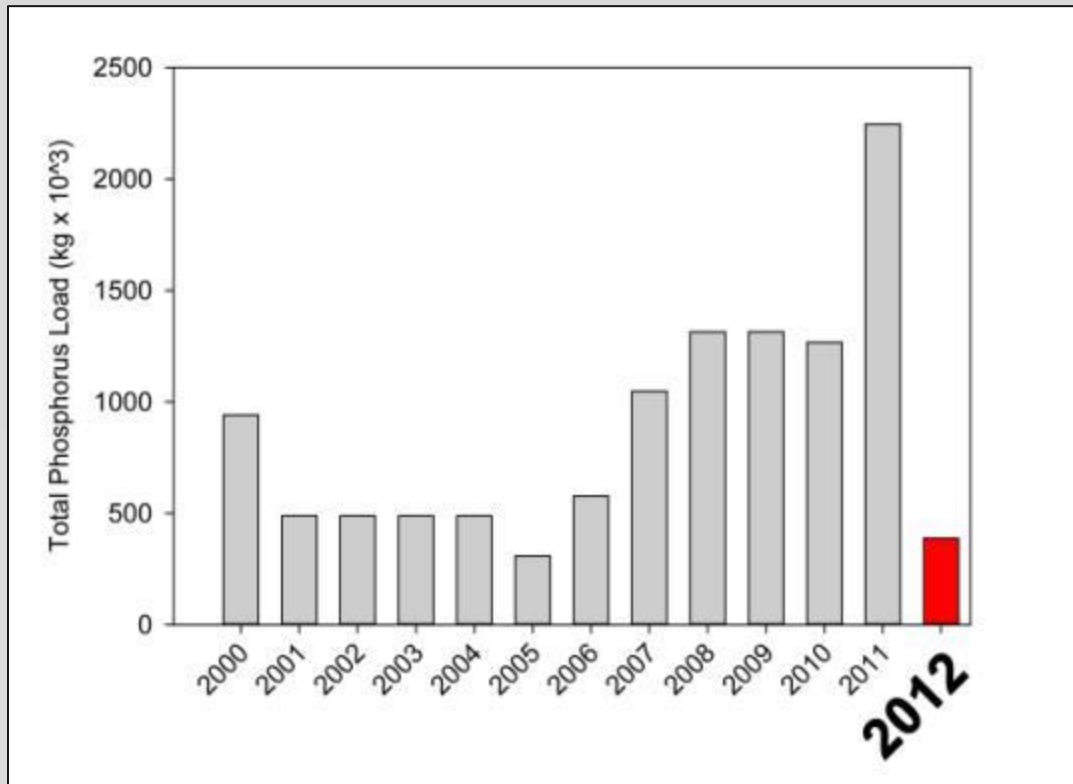


Photo: Thomas Bridgeman, Univ. Toledo & Steve Davis, NRCS

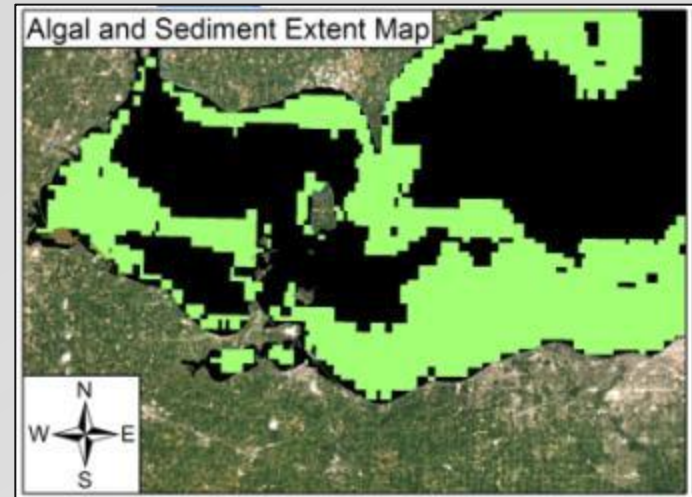


# 2012 Spring Phosphorus & Harmful Algal Blooms (HABs)

Maumee River @ Waterville, Ohio (March-June)

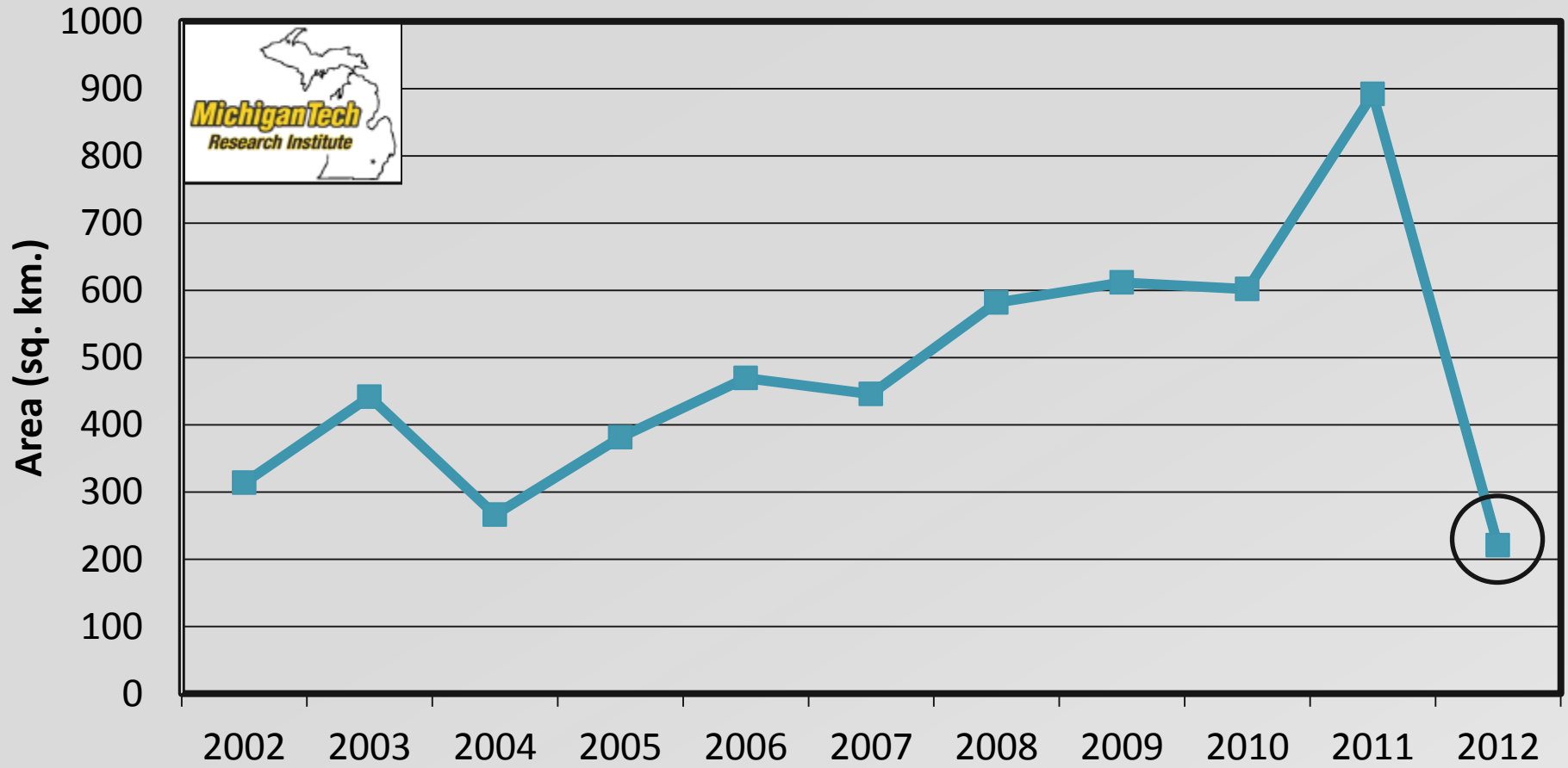


Lake Erie  
July 11, 2012



# Year-to-Year Issue or Trend?

## Western Lake Erie Basin Average HAB Area

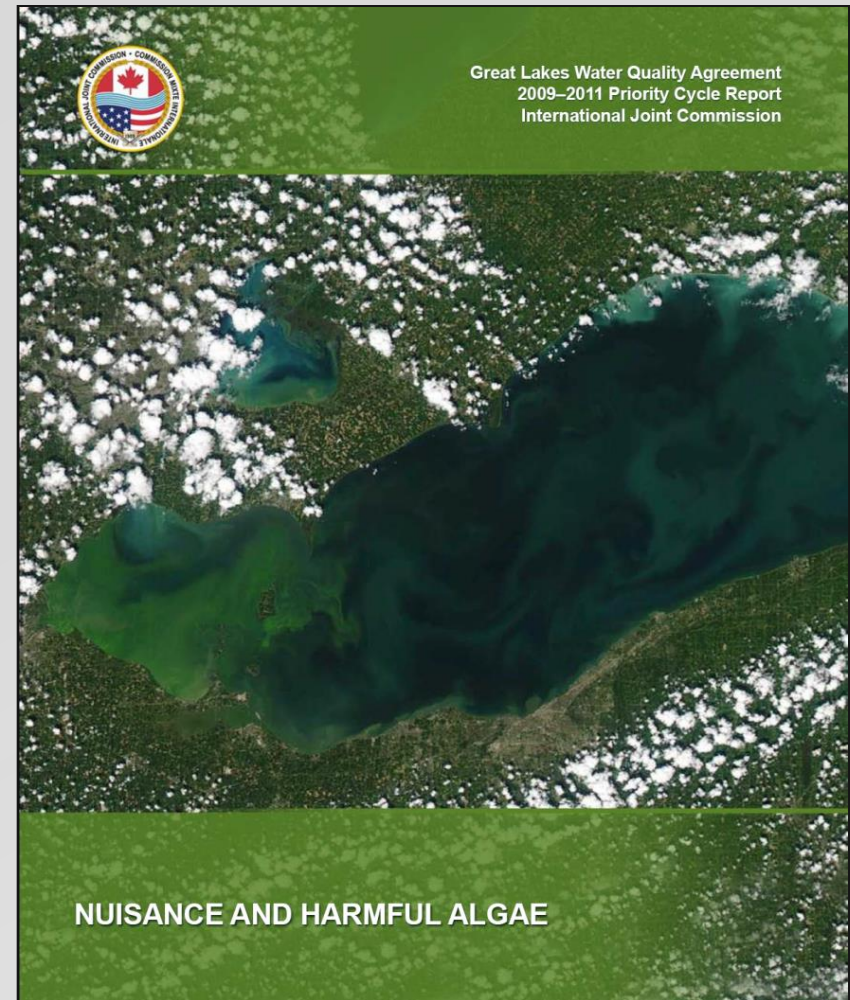


# Governance Challenges Highlighted in Today's Presentation

- State of HAB Science
- From Planning to Implementation to Assessment
- Setting Realistic and Understandable Goals Going Forward

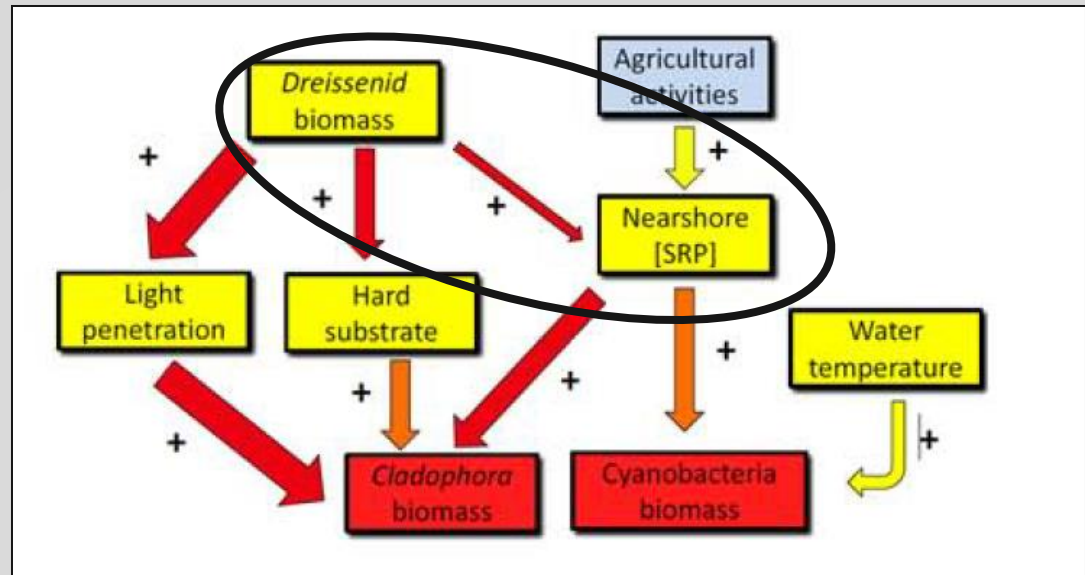


# Synthesizing Available Science & Recommendations



# International Joint Commission Great Lakes Eutrophication Work Group

- Dreissenid to Nearshore Soluble Reactive Phosphorus Relationship



- 26 Studies
  - 12 indicate (+) relationship
  - 13 indicate (–) relationship
  - 1 indicate no relationship

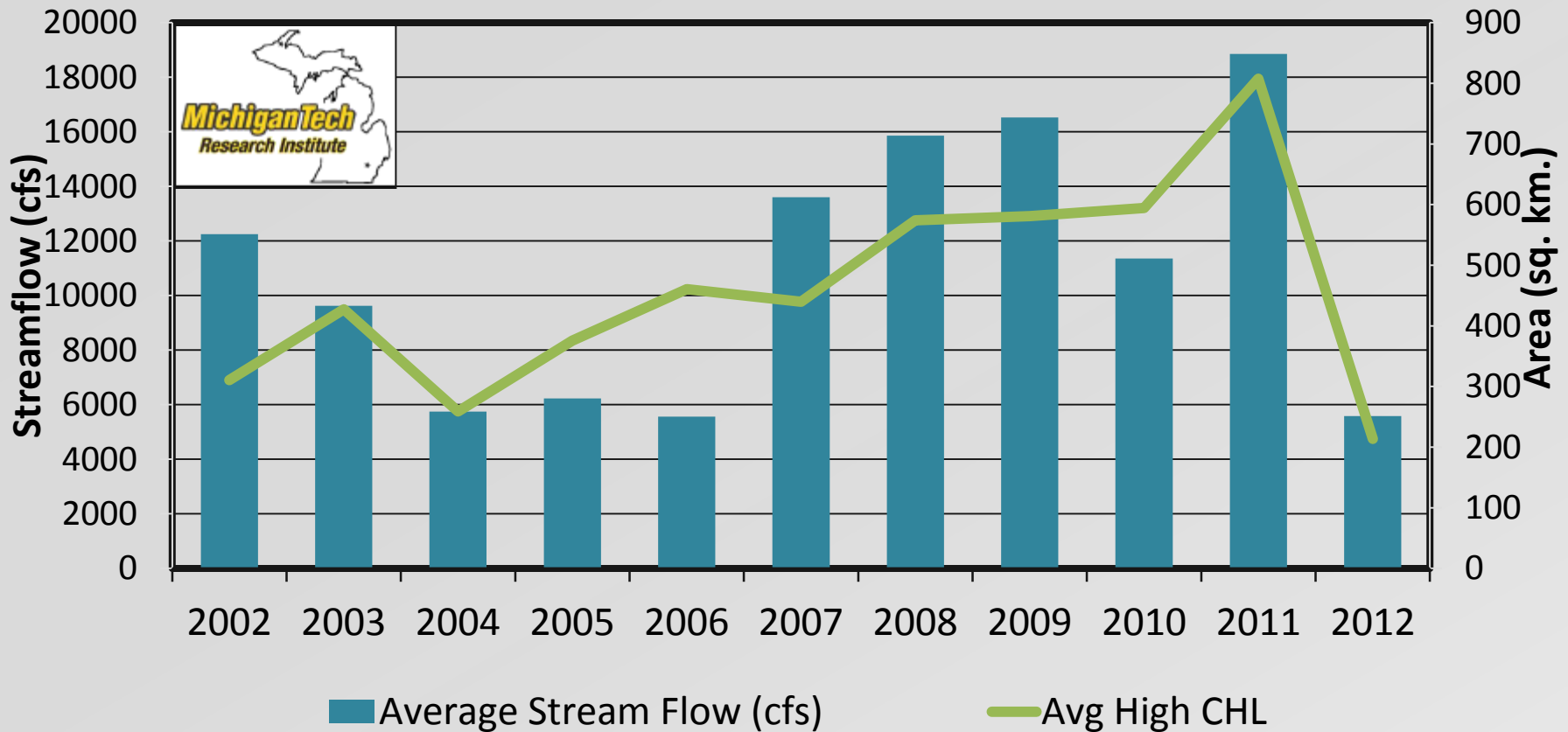
Weight of Evidence?





# Forecasting Lake Erie HABs

## HAB Area vs. Spring Maumee River Stream Flow @ Waterville, OH



# Governance Challenges Highlighted in Today's Presentation

- State of HAB Science
- **From Planning to Implementation to Assessment**
- Setting Realistic and Understandable Goals Going Forward



# Great Lakes Restoration Initiative (GLRI)

- Obama Administration Initiative
  - FY2010: \$475 million
  - FY2011: \$300 million
  - FY2012: \$300 million
  - FY2013: \$284 million



FY2010 – FY2014

## Great Lakes Restoration Initiative Action Plan



February 21, 2010

White House Council on Environmental Quality  
U.S. Department of Agriculture  
U.S. Department of Commerce  
U.S. Department of Health and Human Services  
U.S. Department of Homeland Security  
U.S. Department of Housing and Urban Development  
U.S. Department of State  
U.S. Department of the Army  
U.S. Department of the Interior  
U.S. Department of Transportation  
U.S. Environmental Protection Agency





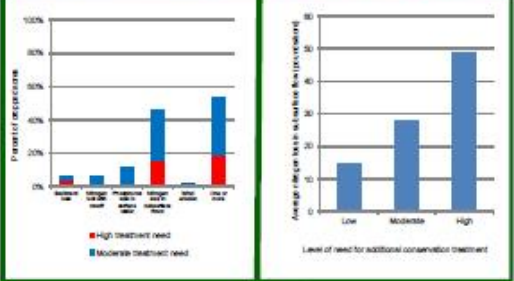
# Collaborative GLRI Work Groups




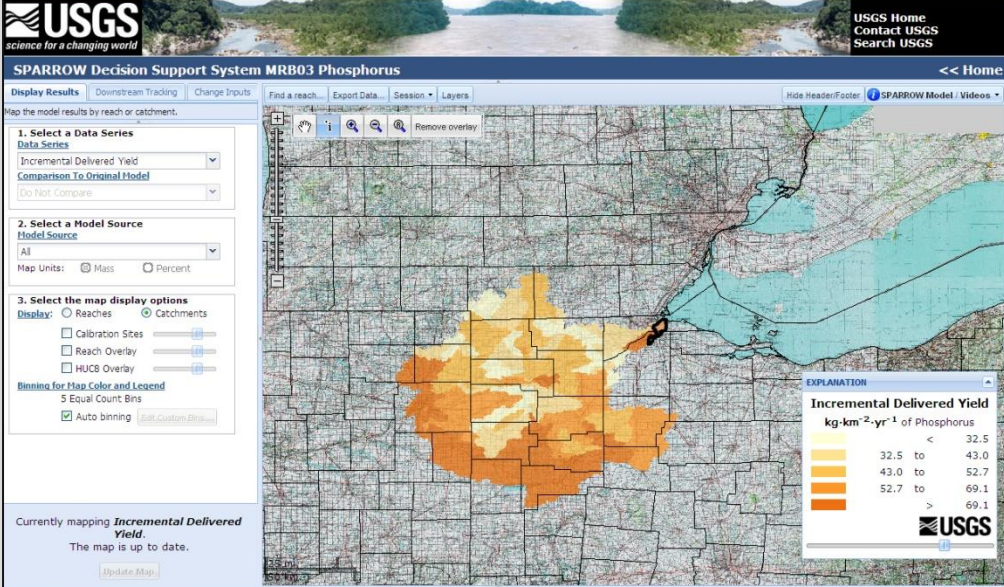


# Using Available Agency Expertise and Planning Tools


**Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Great Lakes Region**  
 Conservation Effects Assessment Project (CEAP)  
 August 2011


**SPARROW Decision Support System MRB03 Phosphorus**



Currently mapping **Incremental Delivered Yield**.  
 The map is up to date.

U.S. Department of the Interior | U.S. Geological Survey  
 URL: <http://water.usgs.gov/nawqa/sparrow/dss/>  
 Page Contact Information: SPARROW DSS Administrator  
 Page Last modified: 04/23/2012 16:24:39 (Version: 1.4.21-SNAPSHOT [04/23/2012 16:24:39] - Production)



# GLRI Priority Watershed Meeting Findlay, Ohio – July 11, 2013

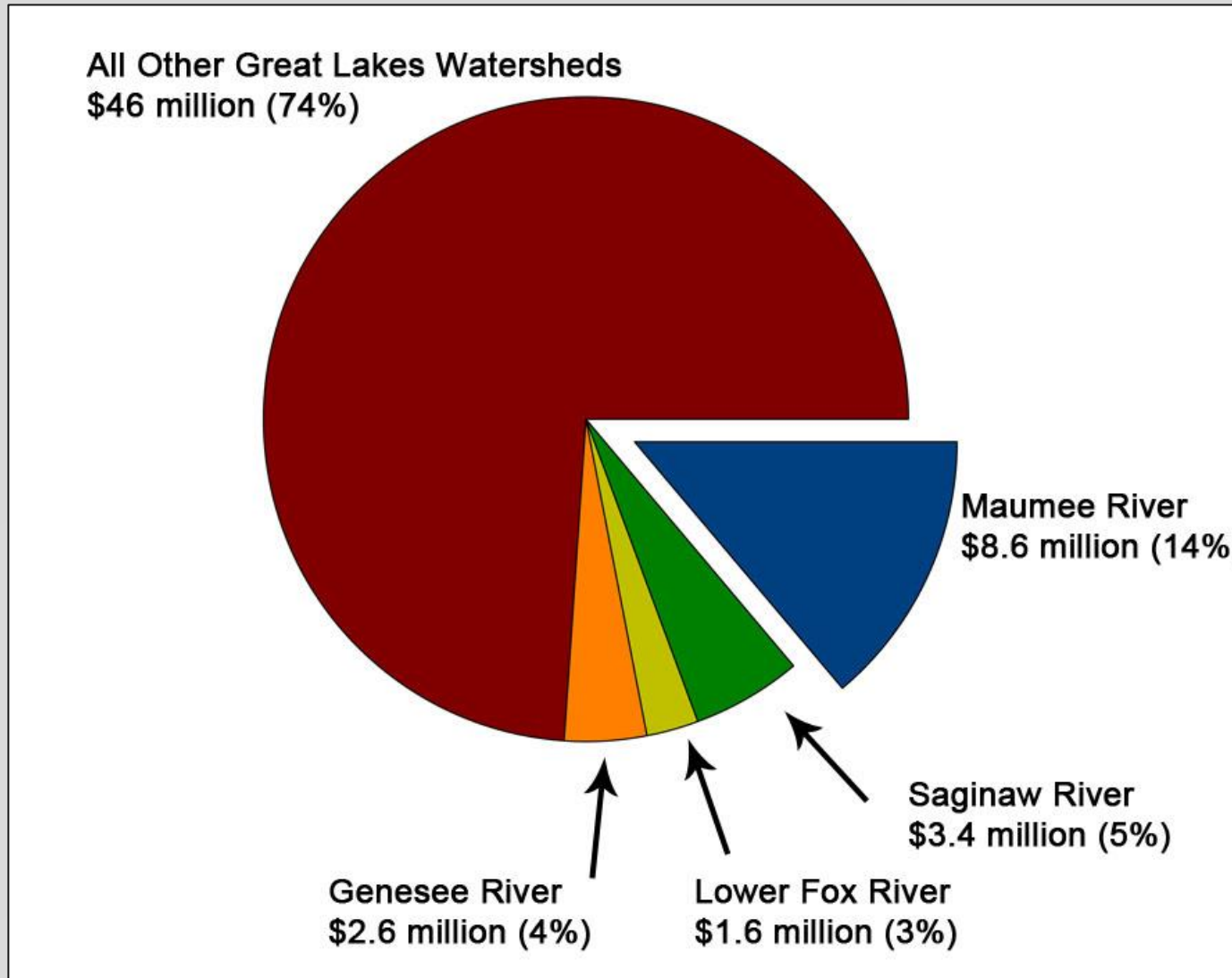


*Feedback Used for Planning Actions & Needed Adaptations*

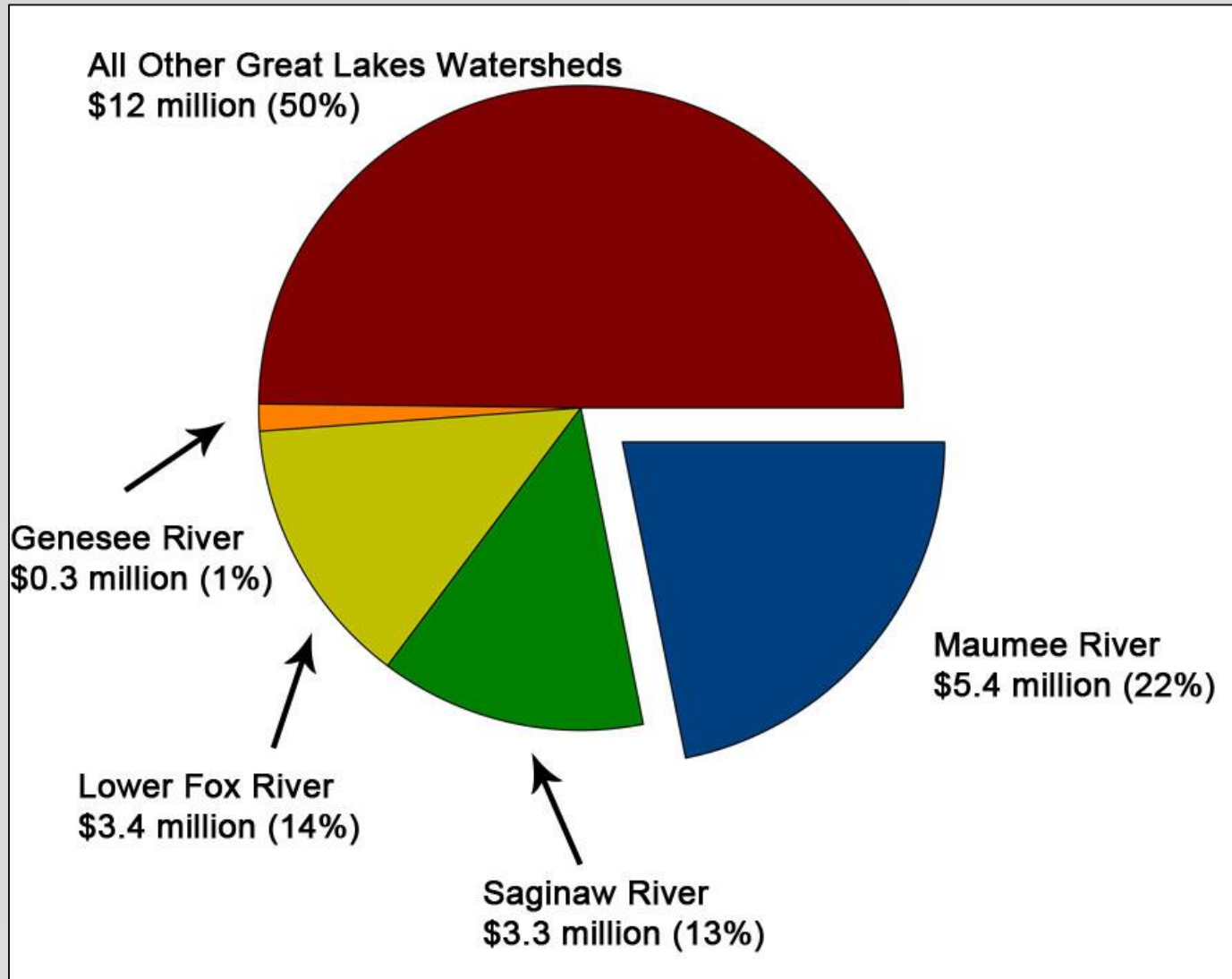




# GLRI Watershed/Water Quality Projects FY2010-11



# GLRI Watershed/Water Quality Projects FY2012





# Use of Science in GLRI Efforts

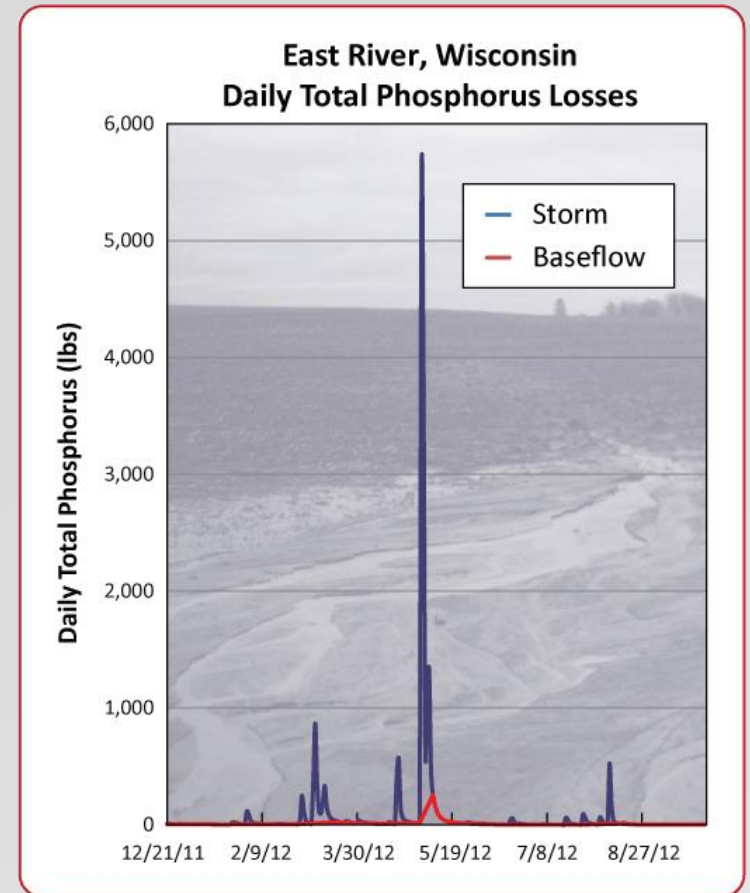
## Data dissemination



## Data collection



## Analysis and results



# Governance Challenges Highlighted in Today's Presentation

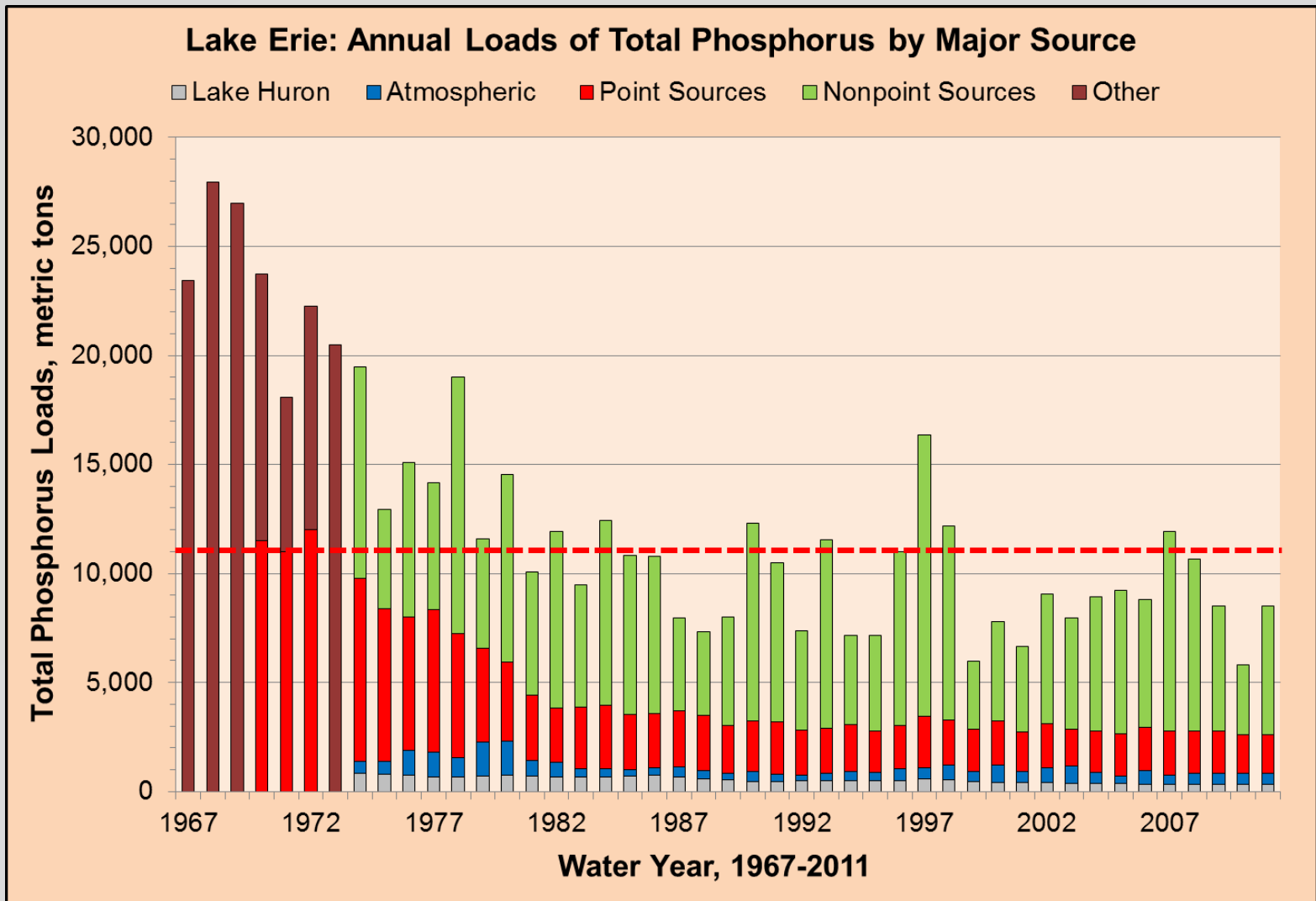
- State of HAB Science
- From Planning to Implementation to Assessment
- **Setting Realistic and Understandable Goals Going Forward**



# Previous Lake Erie Water Quality Goal Setting

- Total Phosphorus Target Load
  - Developed in 1978 as part of the Great Lakes Water Quality Agreement
  - 11,000 metric tons/year
  - Objective of year-round aerobic conditions in Central Lake Erie Basin





*Annual loading of total phosphorus to Lake Erie by major source from 1967-2011.*

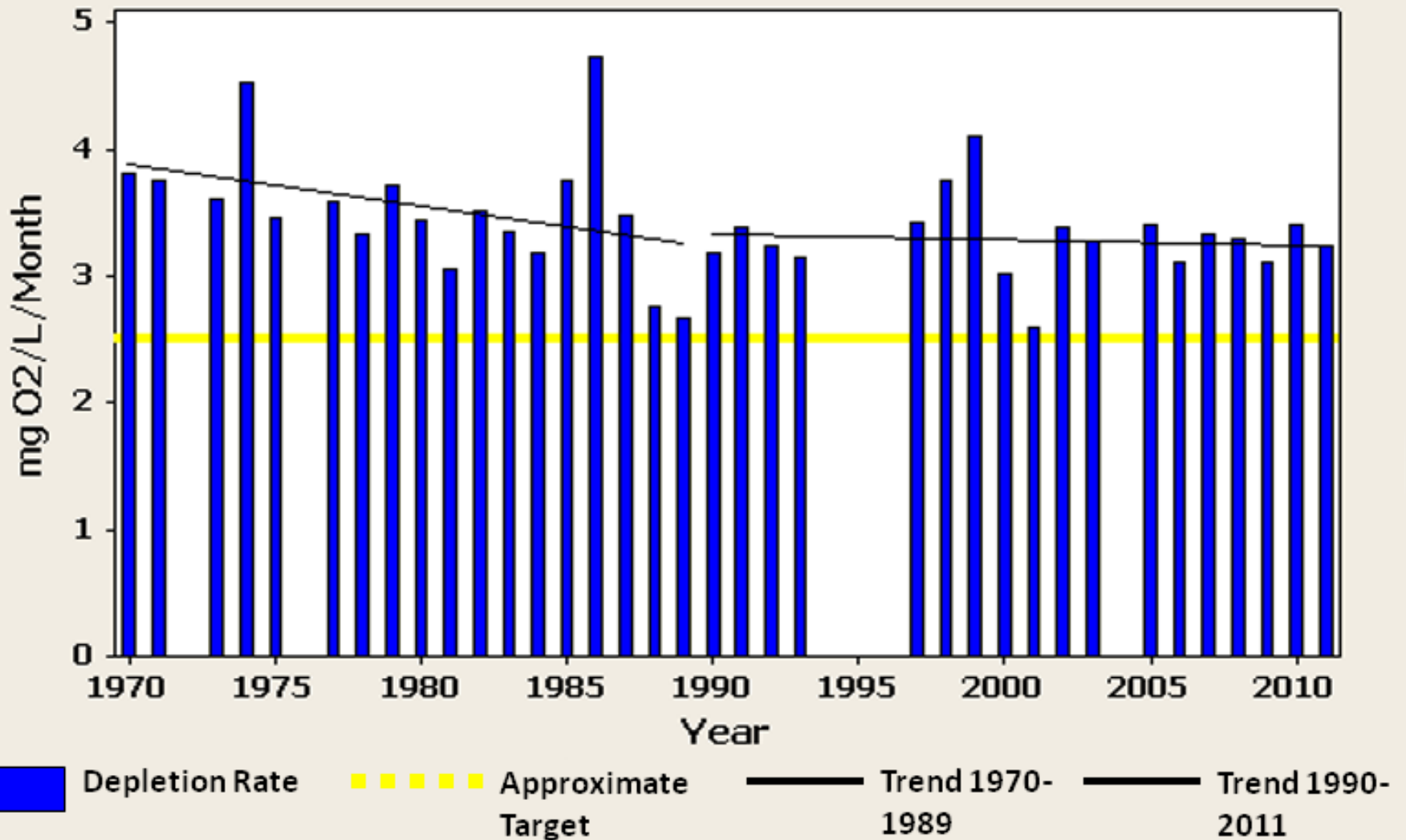
*(Data provided by Dr. David Dolan of the University of Wisconsin Green Bay (May 2013).)*

*Graph prepared by Heidelberg NCWQR staff.)*



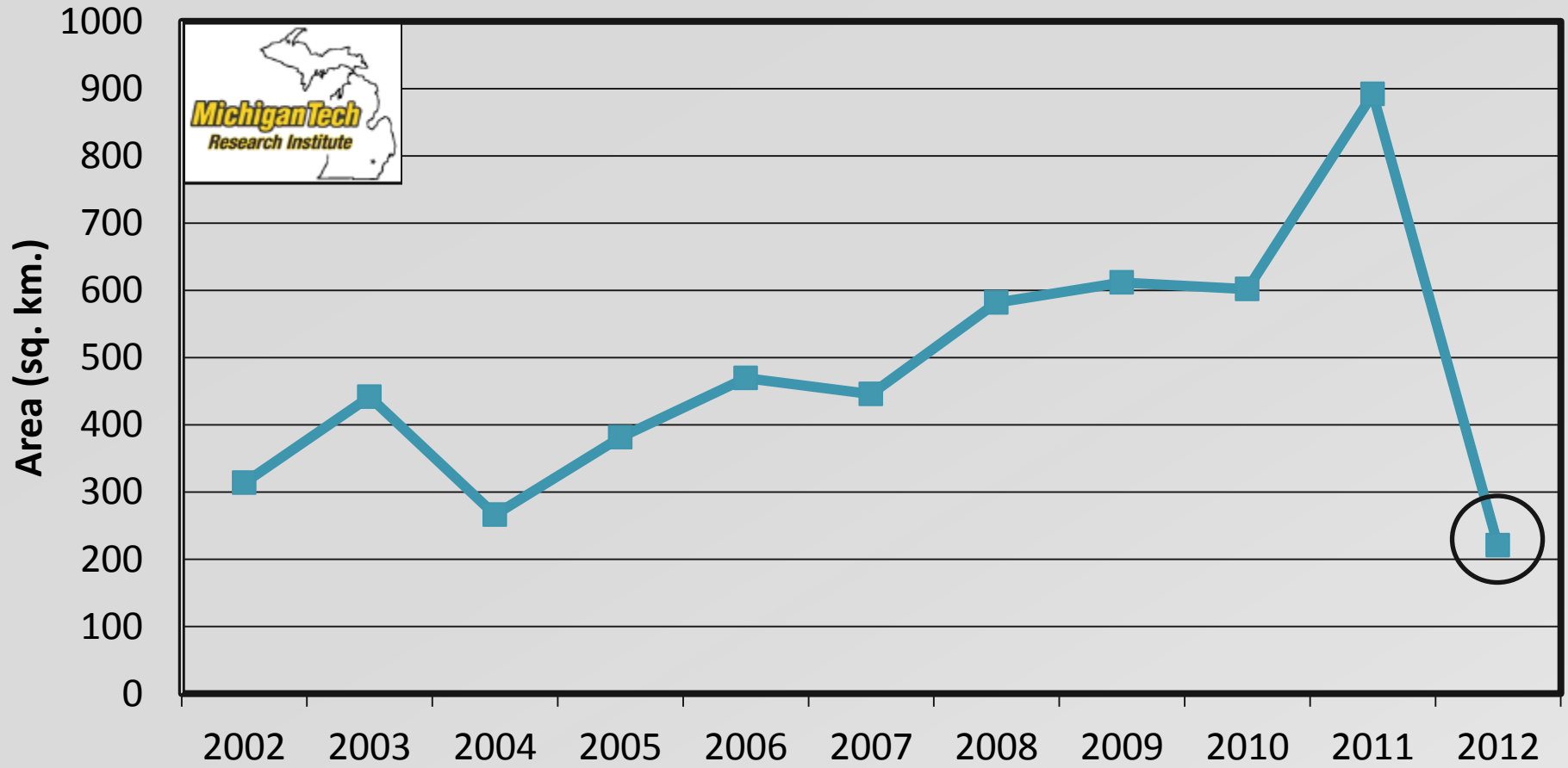


# Oxygen Depletion Rate in Lake Erie Central Basin

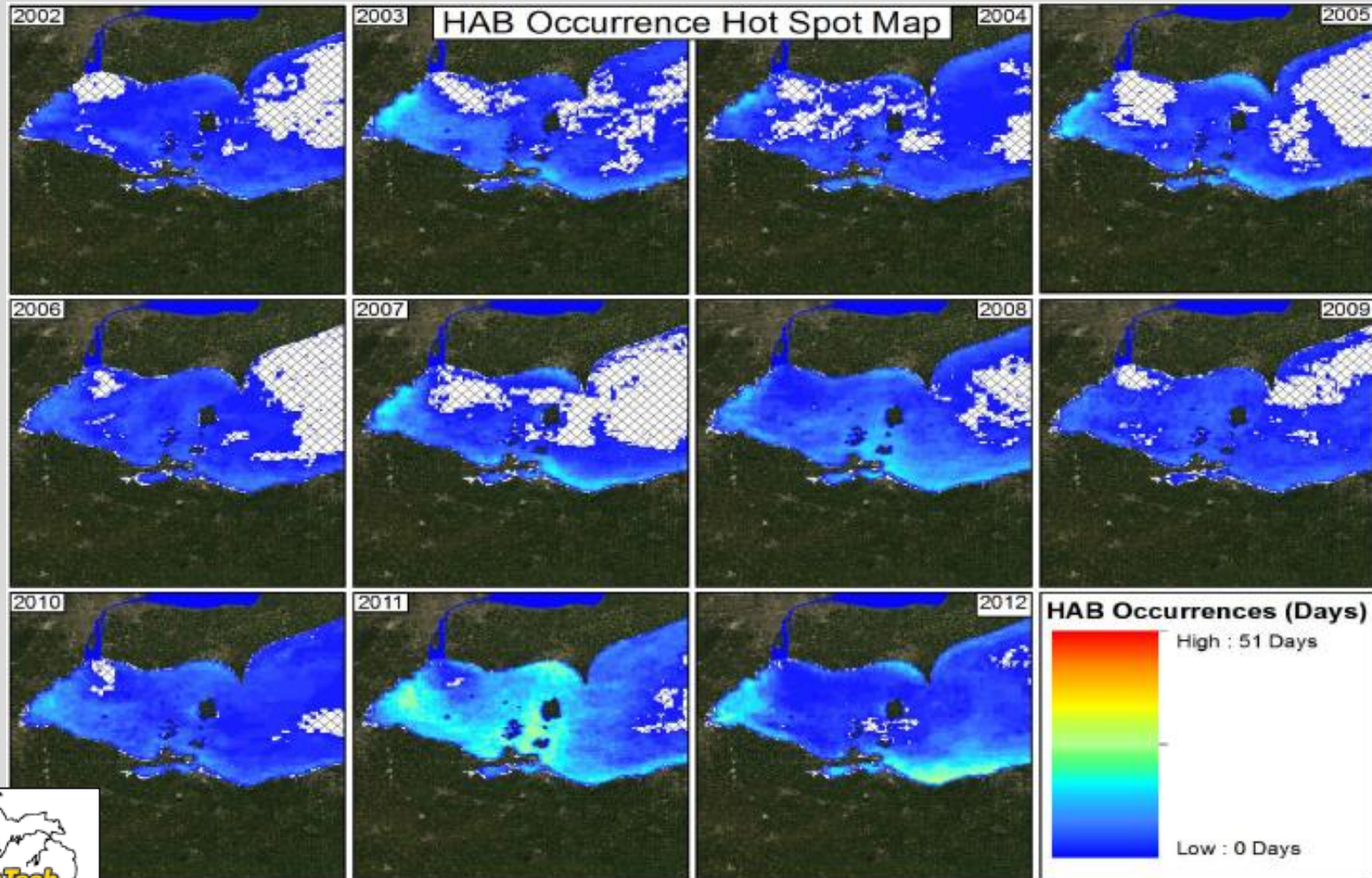


# Year-to-Year Issue or Trend?

## Western Lake Erie Basin Average HAB Area



# Year-to-Year Issue or Trend?



# Questions?

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