



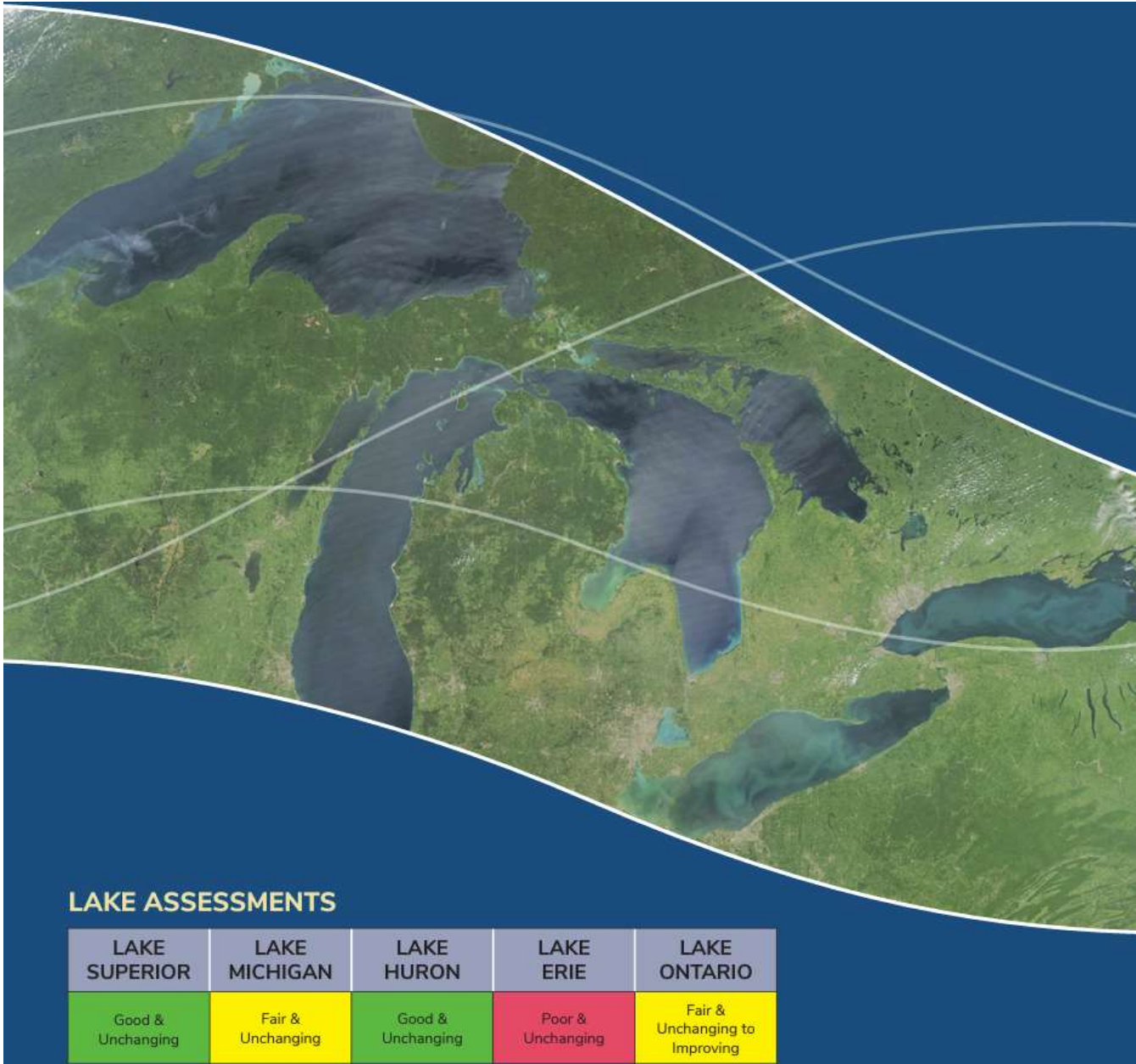
# Michigan Water Use and Water Quality Updates

Laura Campbell, Michigan Farm Bureau  
2023 Winter Potato Conference



# Water Use and Water Quality – Why Does it Matter?

- Great Lakes = 6 quadrillion gallons
- Drinking water = 30+ million people
- Shipping = \$77 billion per year
- Fisheries = \$7 billion per year
- Tourism = \$52 billion per year
- Irrigation = \$15 billion per year in farm gate value
  - Irrigation in Michigan = 7% of agricultural land is irrigated
  - That 7% produces 40% of the state's farm gate value = \$3 billion per year



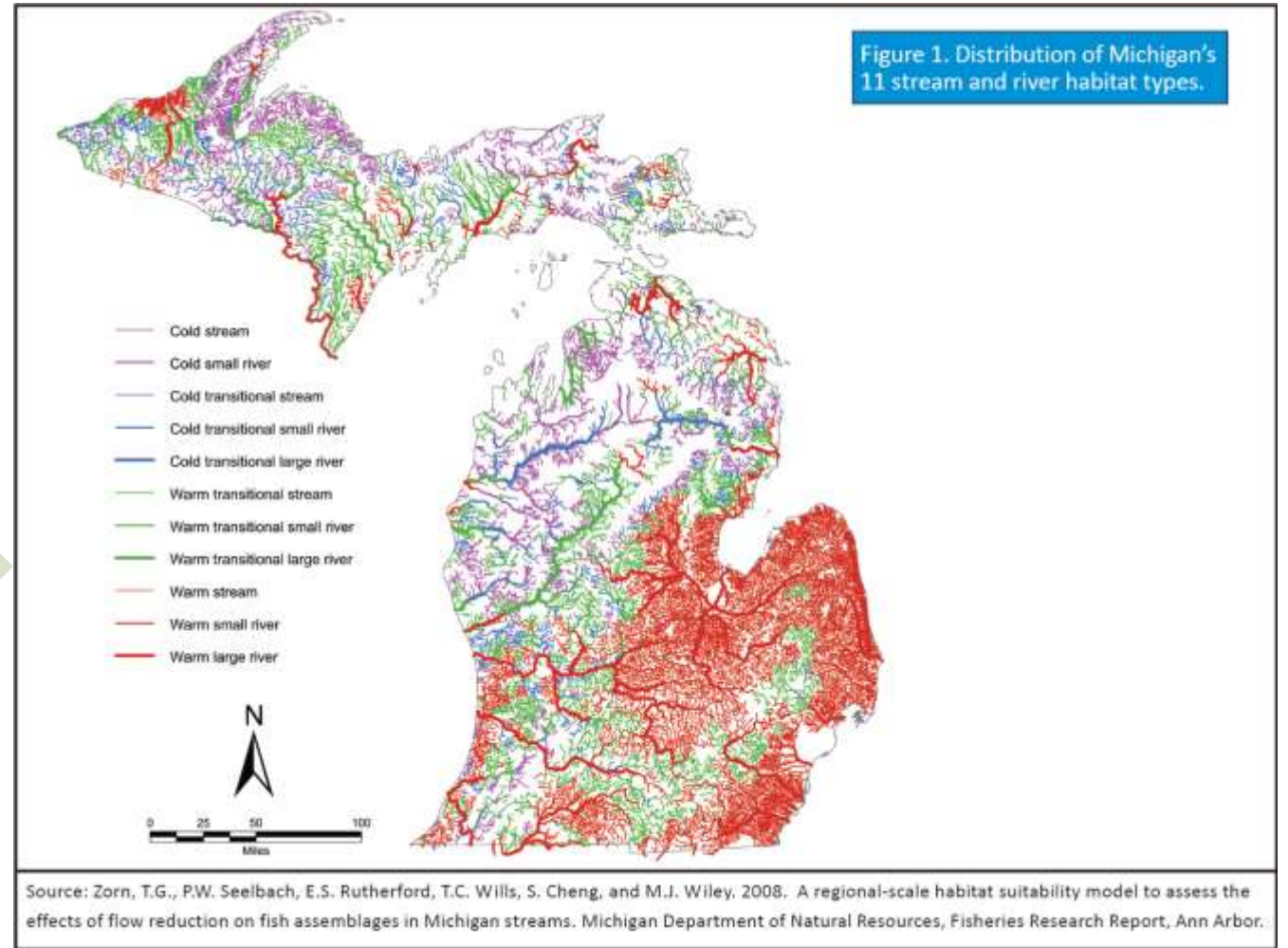
# Implementing Science on Water Use and Quality

Michigan has funded data collection and practice implementation:

\$10 million for data collection and models to improve water use program

\$3 million to continue Michigan Geological Survey's mapping work

\$25 million for data collection and on-farm practices in Western Lake Erie watershed



## What Does This Funding Provide?

**\$10 million for Water Use Advisory Council recommendations**

- **Stream gages, groundwater monitoring wells**
- **Database to streamline data from other programs**
- **Hydrologic Framework model to incorporate regional and watershed models into statewide system, link to GIS and other databases**
- **Glacial aquifer mapping**
- **MSU Extension educators to help growers with irrigation efficiency and management**
- **Digitizing Wellogic information**
- **Updating model estimates of transmissivity and storage**
- **Water and energy use assessment**



## What Does this Funding Provide?

**\$3 million for Michigan Geologic Survey**

- **Groundwater mapping in 25 priority counties**
- **Soil sampling, seismic and gamma ray logging to create accurate geological maps**
- **Static groundwater levels, bedrock topography**
- **Expanded subsurface information for water use program and for other programs including water quality**

# What Does This Funding Provide?

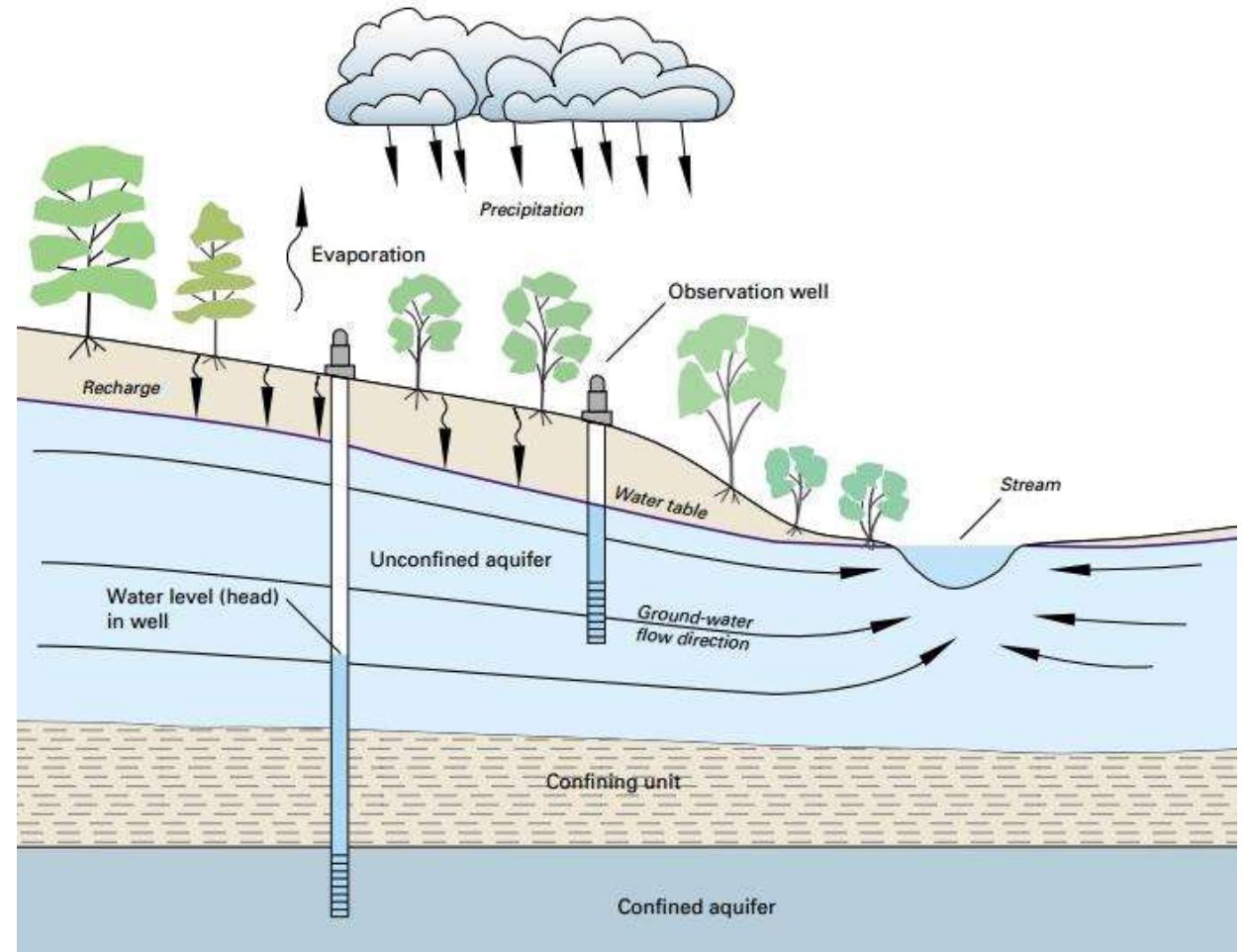
**\$25 million for Western Lake Erie watershed phosphorus reduction goal**

- **Financial assistance for implementing on-farm practices: improved soil sampling, precision application, yield calibration, manure management**
- **New stream gages where data is not well known**
- **Pilot programs:**
  - **4R Nutrient Certification**
  - **Easements and filter strips along county drains**
  - **Assessments of practice adoption**
- **Conservation Technicians to assist farmers**
- **\*\*\*Success here leads to programs moving to other watersheds or statewide\*\*\***

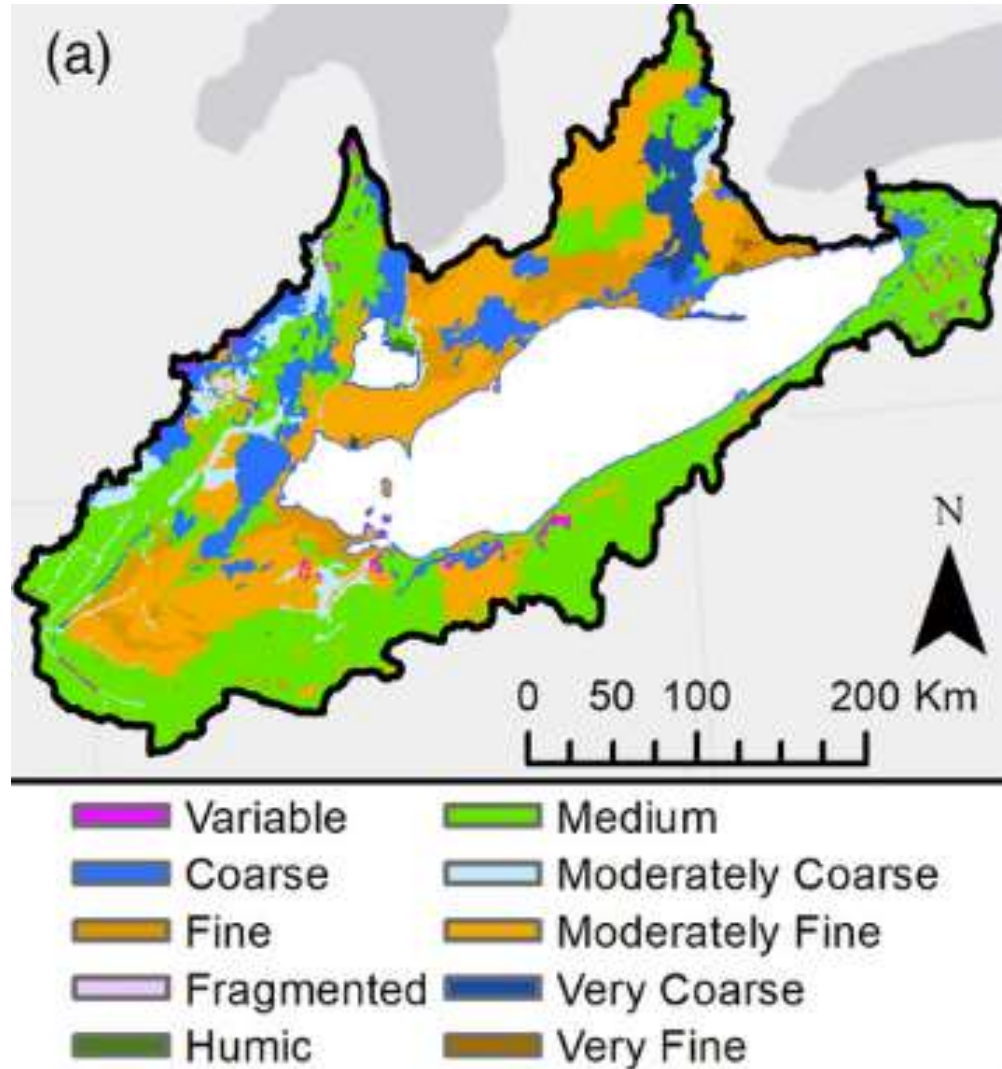
# Does This Mean All the Problems Are Solved?

## Water Use:

- We need more data
  - Public and private – data sharing with privacy protection
- We need to DO something with the data we collect
  - Better models, more accurate assessments incorporated into process
- We need better communication between state and private industry
  - Site specific reviews, hydrogeologic studies, regional studies
- We need better understanding of lake/stream impacts
  - Discharges, climate change, rainfall



# Does This Mean All the Problems Are Solved?



Western Lake Erie watershed:

- We need more streamlined incentives
  - For farmers not already participating in programs
- We need better assessment of practice adoption
  - Assessments, surveys, capturing data across all programs
- We need better understanding of lag time and legacy impacts
  - Nutrients don't disappear overnight

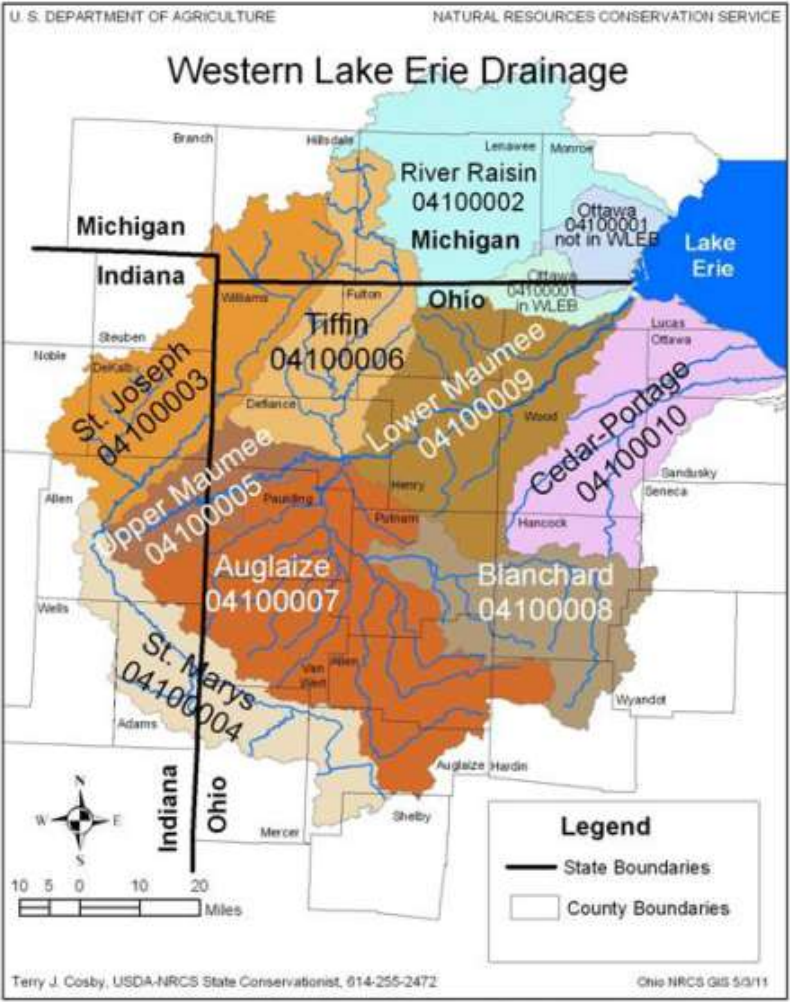


# So What's Next?

- Partnership – communication with all groups involved, use connecting points:
  - Water Use Advisory Council
  - Water User Groups
  - Landowner and private data collection groups
  - Irrigation GAAMP
  - MAEAP program
  - Conservation Districts, USDA
- Raise concerns, and bring proposed solutions
  - Outreach
  - Research
  - Education
  - Funding



# Next Steps: Western Lake Erie Watershed



Ag inventories for nutrient reduction

Drainage water management

Anaerobic digesters

Conservation Reserve Enhancement Program

MAEAP

# Next Steps: Water Use

Irrigation efficiency on-farm pilot

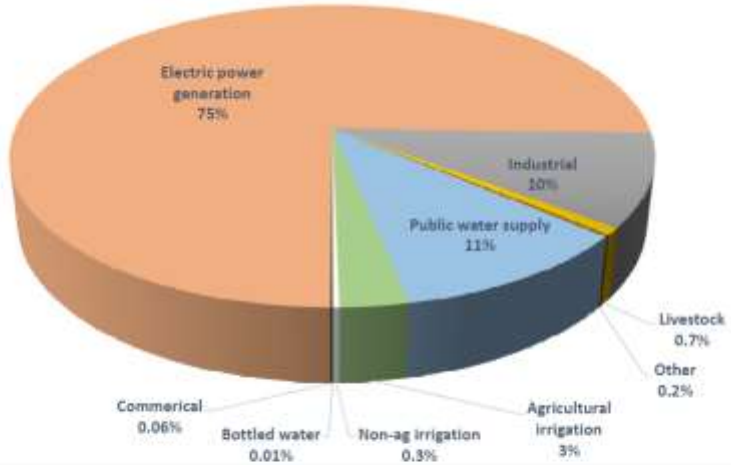
Research streamflow depletions and recharge

Continue funding for Michigan Geological Survey mapping

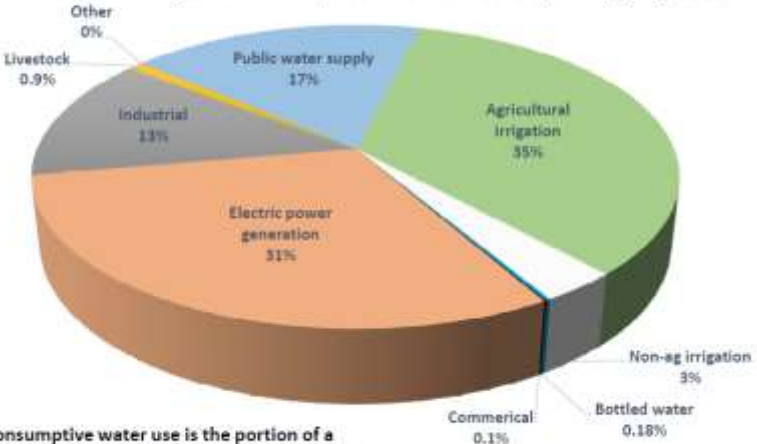
Research how lakes impact water use system

Continue funding for gages and monitoring wells

Michigan Total Water Use by Category, 2019




Michigan Consumptive Water Use by Category, 2019



\* Consumptive water use is the portion of a water withdrawal that is not returned locally due to evaporation, incorporation into products, or transport out of the Great Lakes Basin.





# Thank you! Questions?

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