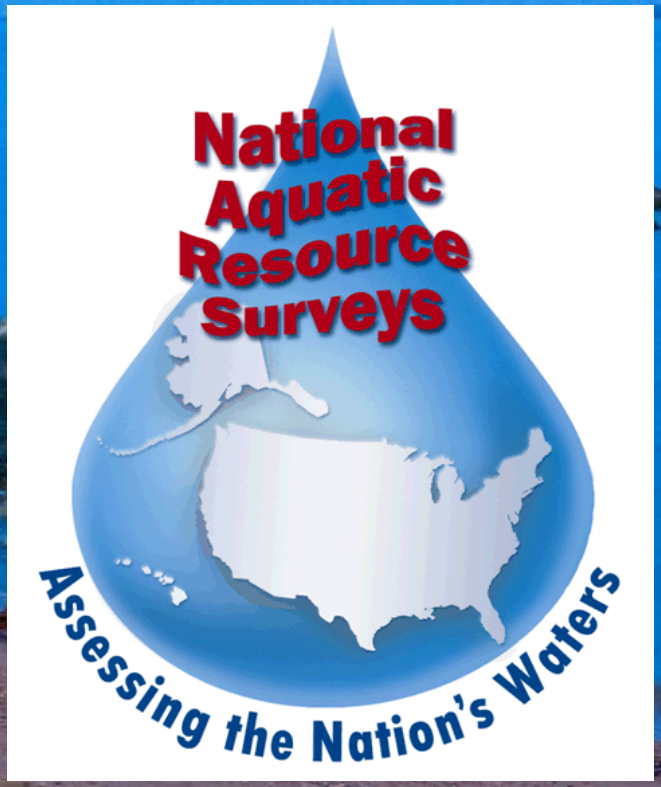
The National Coastal Condition Assessment (NCCA)



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Agenda

- What is the National Aquatic Resource Surveys (NARS) Program?
- The National Coastal Condition Assessment
  - Background
  - Indicators
  - 2010 Benthic results
    - Problem with OTI
- Charge to the Great Lakes Benthic Work Group

What is NARS?

- The National Aquatic Resource Surveys Program
  - Statistically valid assessments of the nation's waters.
    - NLA (does not include the Great Lakes)
    - NRSA
    - NWCA
    - NCCA
  - Led by the US EPA Office of Water

NARS Objectives

- Assessing Status and Trends - Indicators of Condition & Stressors
- Documenting Associations between Indicators of Condition and Indicators of Stressors
- Building State Monitoring and Assessment Capacity
- Supporting Agency Priority Setting and Resource Allocation

The National Coastal Condition Assessment

- Originated from EPA's Environmental Monitoring and Assessment Program.
  - Originally the National Coastal Assessment research program conducted by EPA's ORD.
  - In 2010 transitioned to an Office of Water monitoring program under the NARS.
  - 2010: NCCA first sampled the Great Lakes
  - Coastal assessments are conducted every 5 years (2010, 2015, 2020...)

Designed to answer key questions

- What percent of coastal and Great Lakes nearshore waters are in good, fair, and poor condition for key indicators of water quality, ecological health, and recreation?
- Is the condition getting better or worse?
- What is the relative importance of key stressors such as nutrients and pathogens?

NCCA Indicators

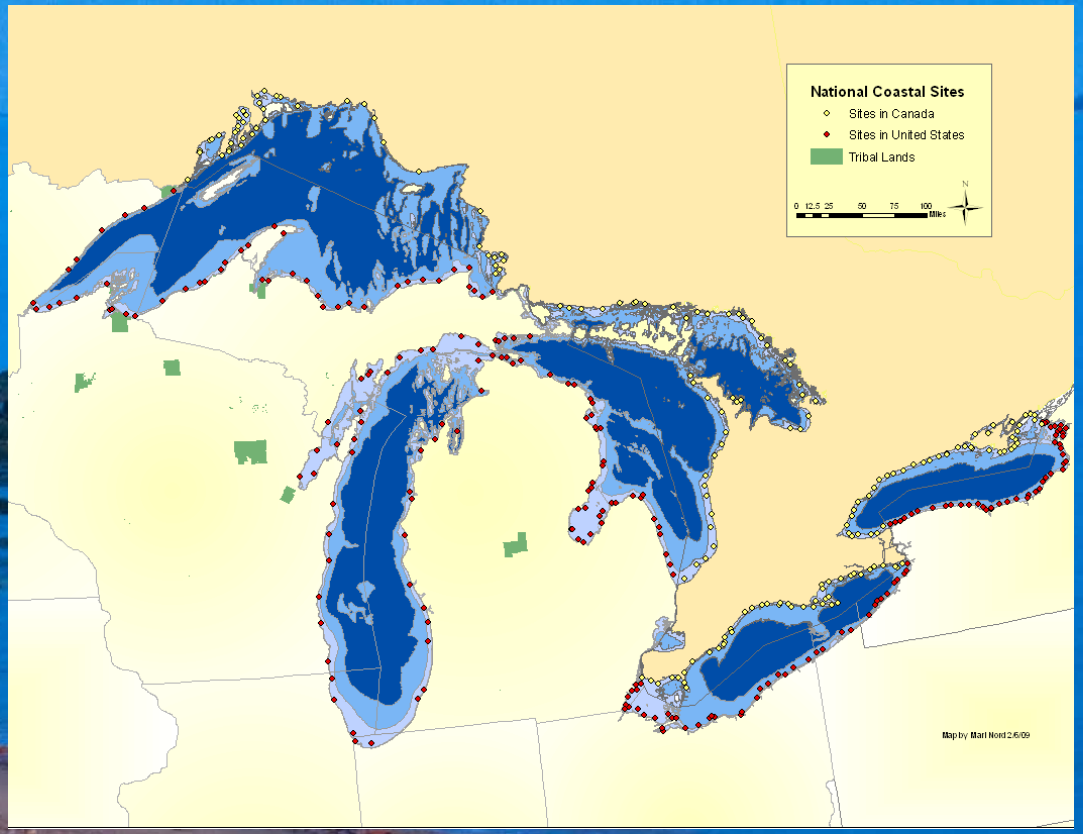
- Water Column
  - Salinity
  - Conductivity (GL)
  - Temperature
  - pH
  - DO
  - PAR
  - Secchi depth
  - DIN, DIP, TN, TP
  - chlorophyll *a*
  - *Enterococci*
  - Total Microcystins
  - Algal Toxins
  - Phytoplankton & underwater video (Great Lakes)

NCCA Indicators

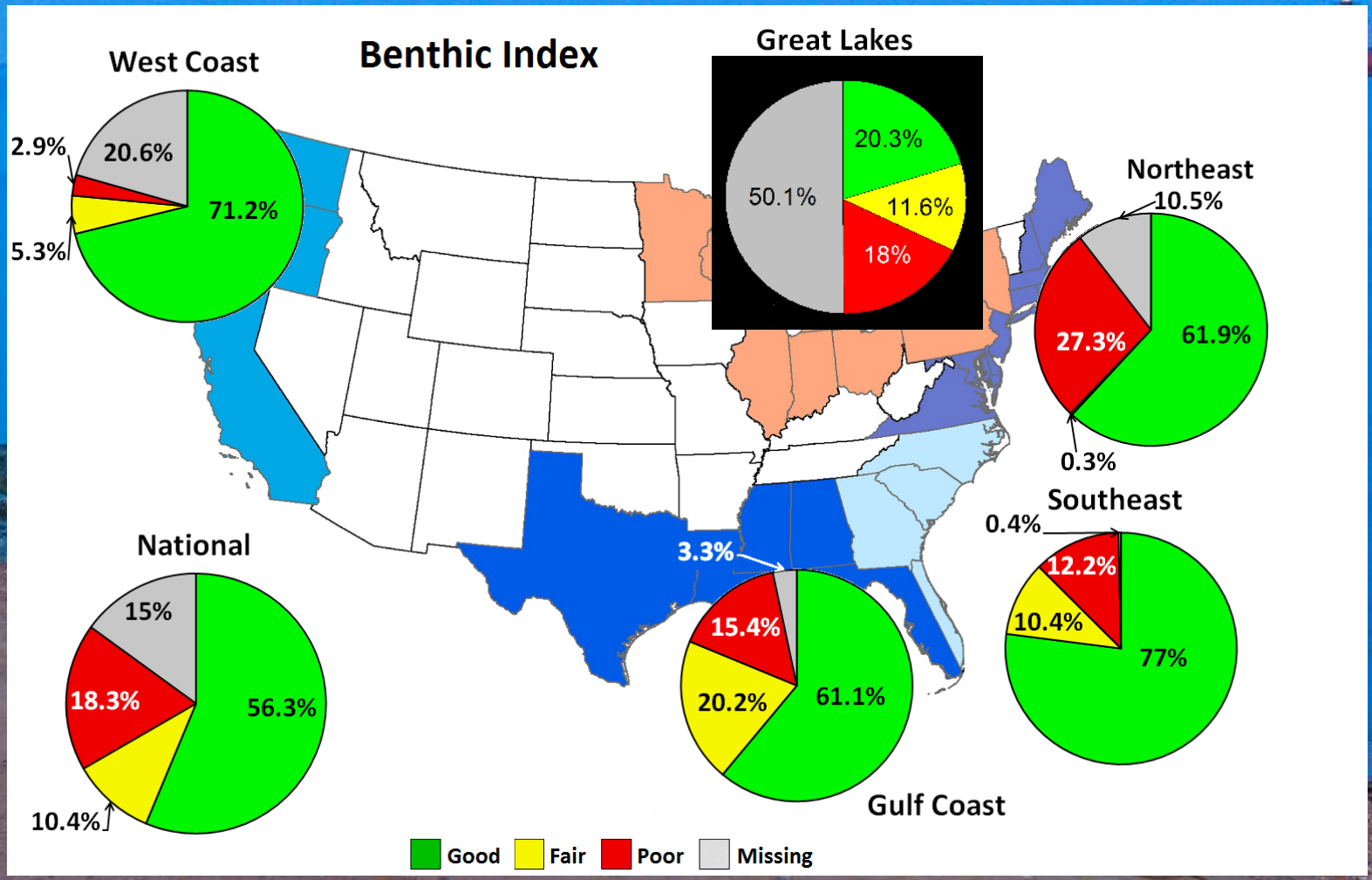
- Fish
  - Ecological
  - Human Health Indicators
    - Fish plugs (Hg)
    - Fish fillet (GL only)
- Sediment
  - Chemistry
  - Toxicity
  - TOC
  - % silt/clay
- Benthic macrofauna

2010 Great Lakes Sampling Design

- No more than 5km out or 30m deep.
- 45 sites per Lake. 5 revisits each. U.S. waters.(225)
- 10% revisit
- Embayment sites (152)
  - semi-enclosed no smaller than 1 km^2 and no larger than 100 km^2
- National Park Service Sites (50)
  - within 5 parks.



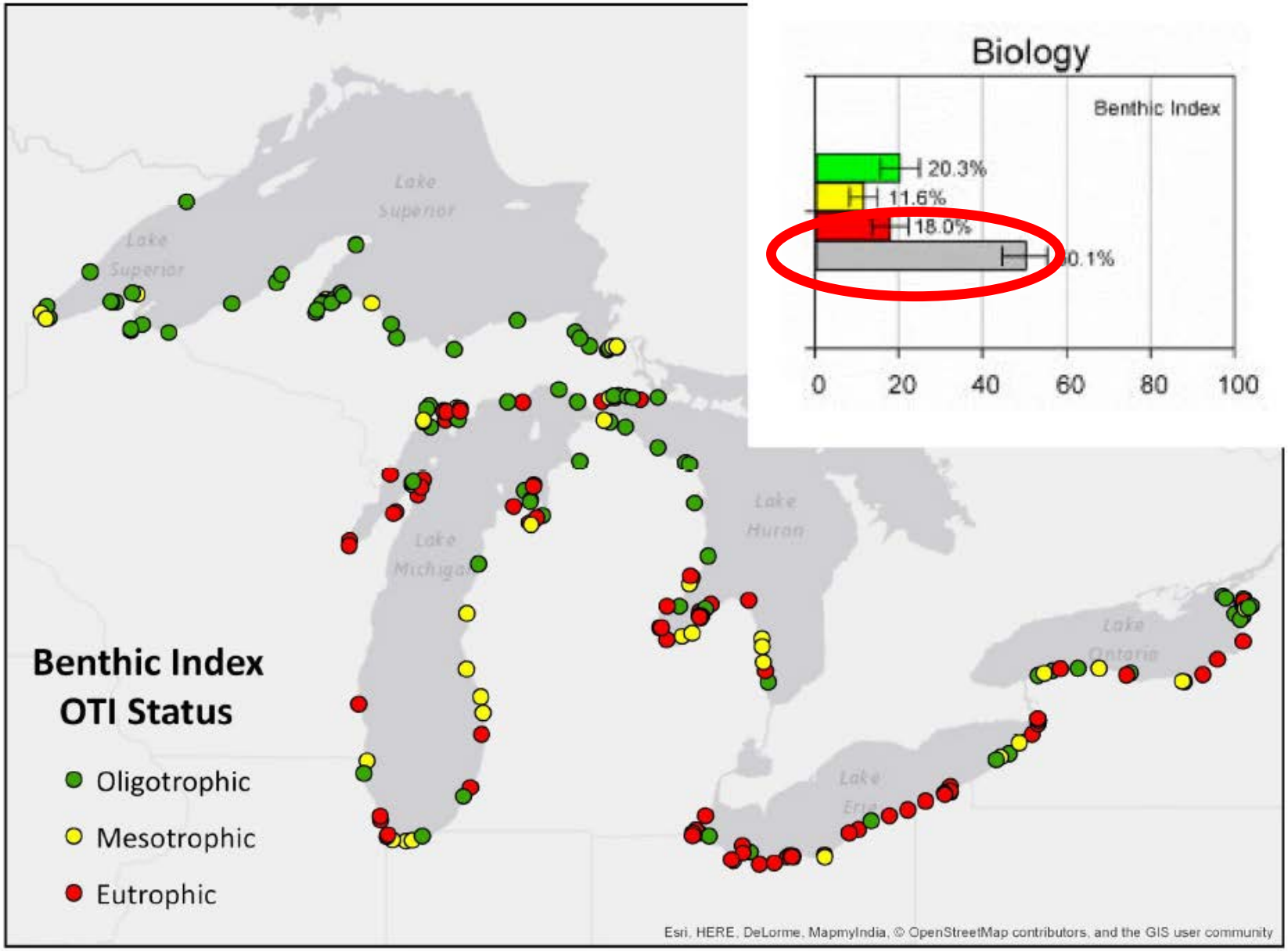
National and Regional Assessments



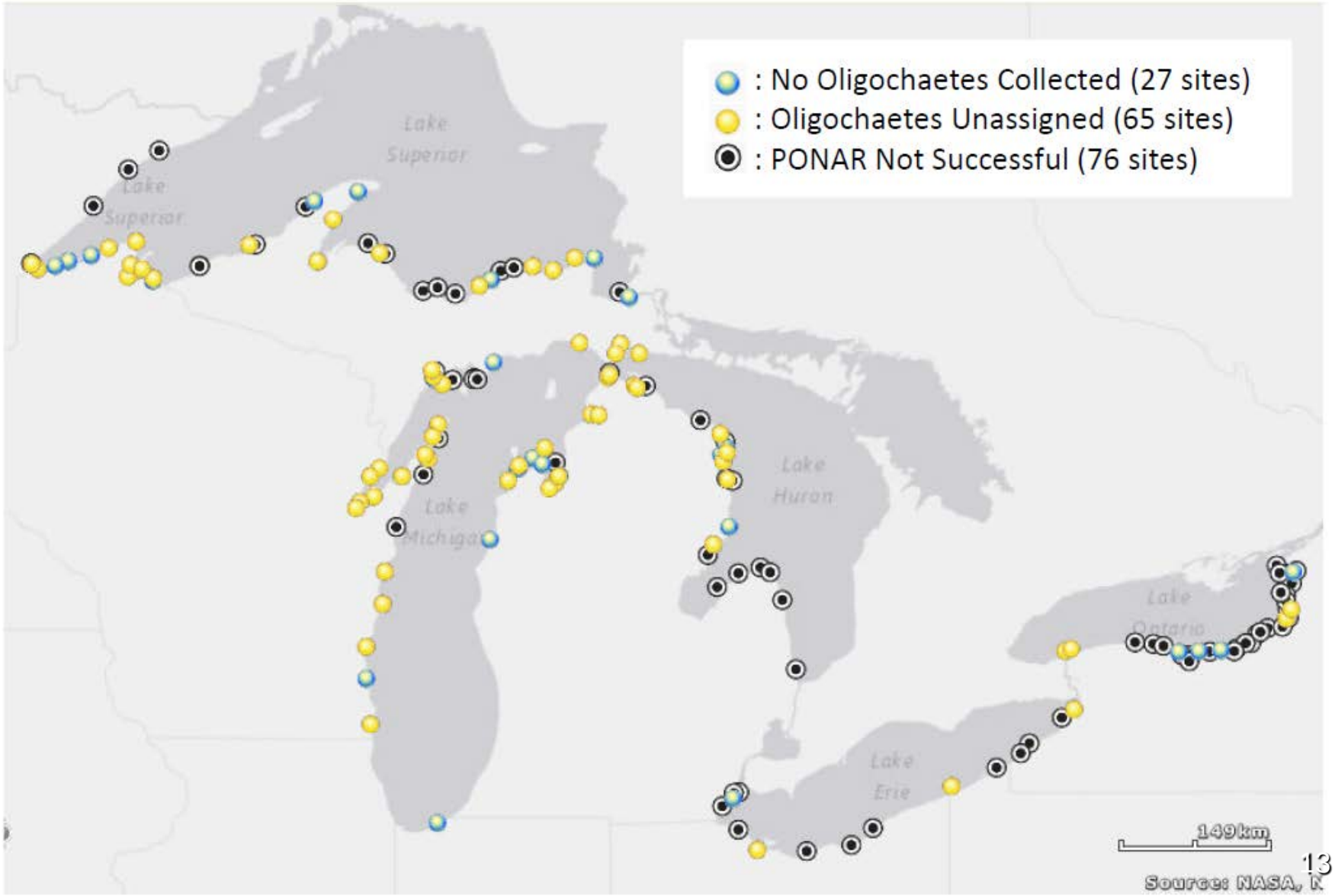
How NCCA 2010 used OTI

1. Classify oligochaete species in sample from Tubificidae and Lumbriculidae families into trophic groups.
2. Calculate OTI
3. Assign OTI Status
   - 0.0-0.59– Oligotrophic (NCCA Good rating)
   - 0.60-1.0– Mesotrophic (NCCA Fair rating)
   - 1.01-3.0– Eutrophic (NCCA Poor rating)

NCCA 2010 condition ratings based upon OTI results



OTI Problem: 50% of waters are unassessed



Charge to Great Lakes Benthic Work Group

- Find a way to reduce the “missing” percentage of assessed waters in the Great Lakes.
  - Goal: Comparable with estuarine method and applicable across all Great Lakes
  - Constraints:
    - Linkage with estuarine methods to support national and regional assessment.
    - Scientifically defensible
    - Consistent measure of condition for routine monitoring
    - Assess previously collected and future data