



*The importance of
lake monitoring for
fish and lake
management*

Joe Nohner

Lake monitoring data

- Who collects it and how it is used?
 - Cooperative Lake Monitoring Program
 - DNR Status and Trends
 - Other resources



Uses for CLMP data: DNR

- Status of the Fishery Reports
- Large Lake Special Reports
- Lake water quality
 - Invasive species, land cover, nutrient additions
- Aquatic invasive species early detection



Uses for CLMP data: Academic

- Screening tool for research study sites
- Water quality database for big data projects



MICHIGAN STATE
UNIVERSITY



DNR lake monitoring

- Status and Trends Program
 - Data generated
 - Use
 - Accessing the data
- About 30 lakes per year since 2002
- ~430 lakes total



DNR lake monitoring

- Chemical
 - Total alkalinity
 - Total phosphorus
 - Total nitrogen
- Biological indicators
 - Chlorophyll a
 - Trophic status
 - Zooplankton
 - Fish community (fyke nets, trap nets, gill nets, seines, electrofishing)
- Physical
 - Temperature profile
 - Dissolved oxygen profile
 - Stratification
 - Transparency
 - Dwelling density
 - Boat docks
 - Shoreline armoring
 - Large woody debris



DNR lake monitoring

Status and Trends Inland Lake Habitat Viewer



Other monitoring

- Midwest Glacial Lakes Partnership
 - Assessment of fish habitats in inland lakes

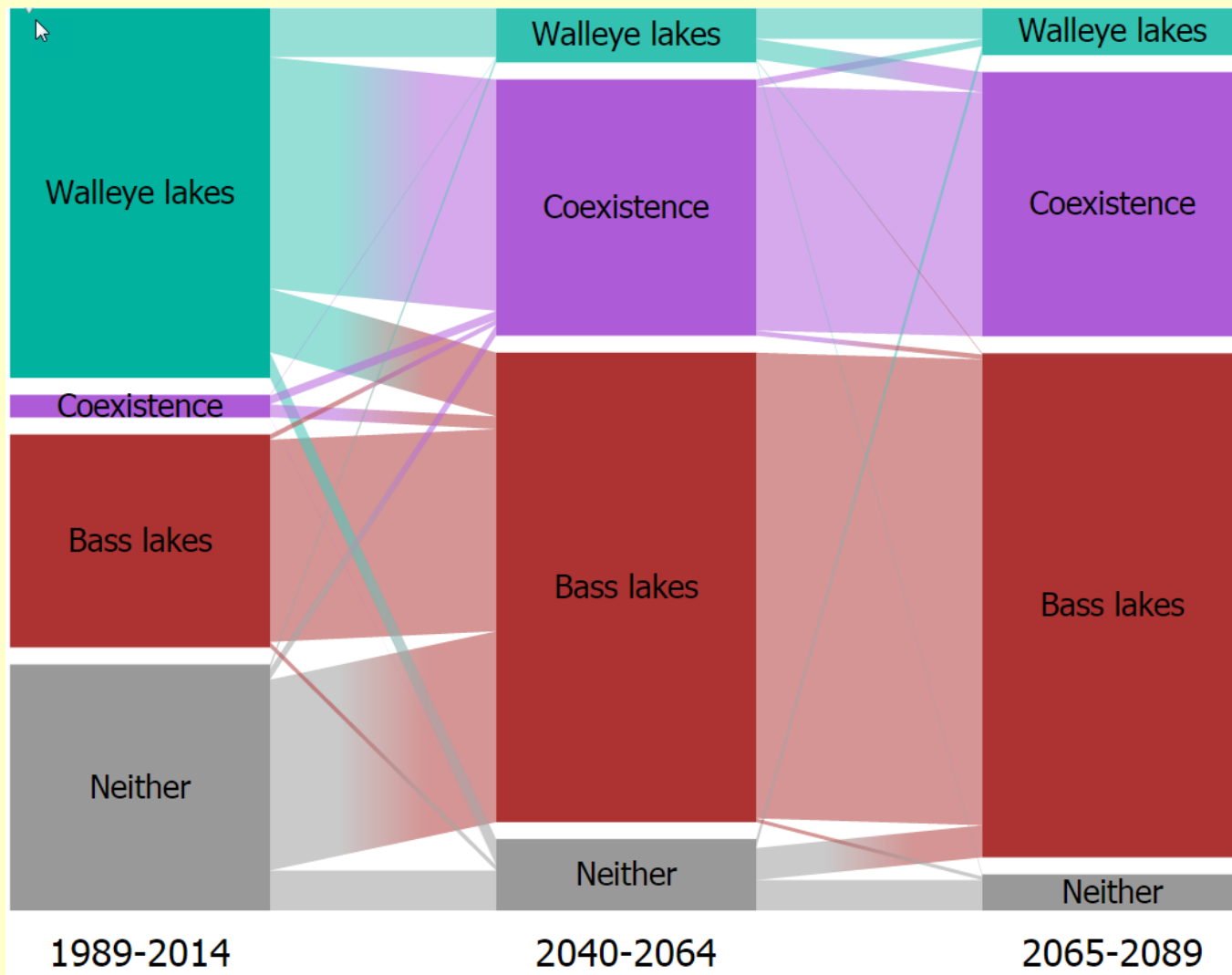


Other monitoring

- Midwest Glacial Lakes Partnership
 - Assessment of fish habitats in inland lakes
 - Assessment of Cisco and Walleye habitat under changing climate

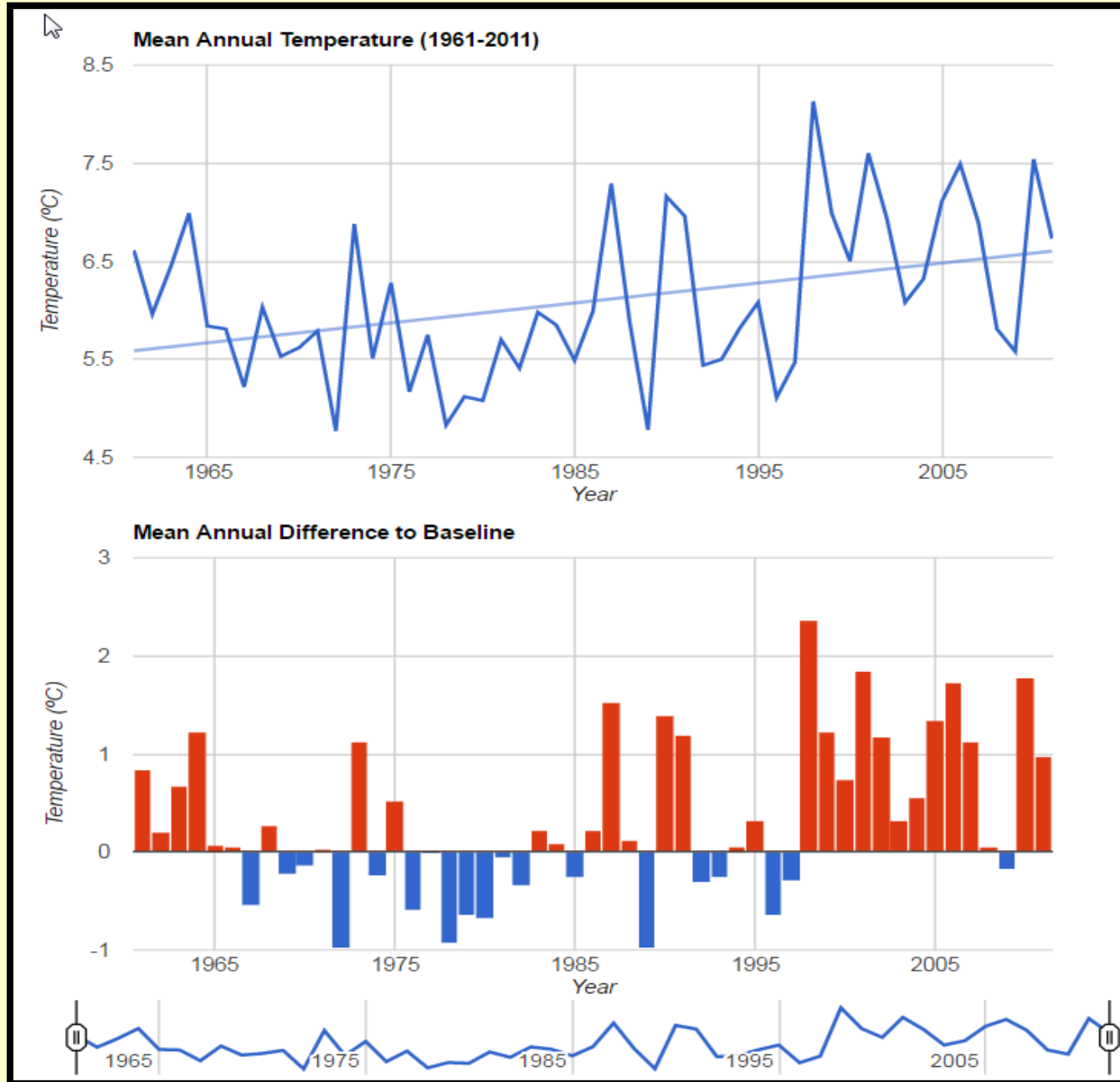


Climate change impacts to Wisconsin lake fishes



Hansen et al. 2016. Projected shifts in fish dominance in Wisconsin lakes under climate change

Center Lake

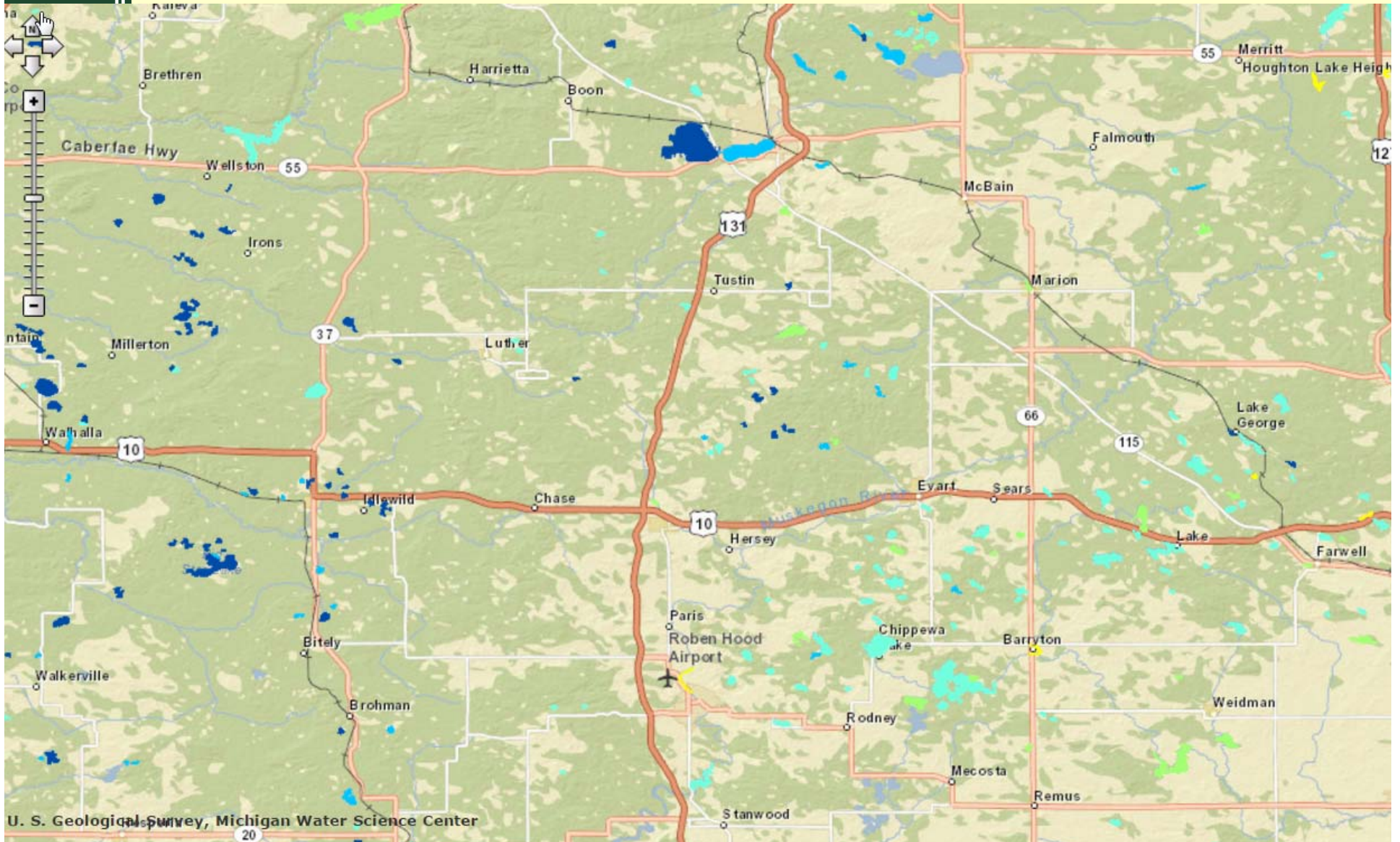


Other monitoring

- Midwest Glacial Lakes Partnership
 - Assessment of fish habitats in inland lakes
 - Assessment of Cisco and Walleye habitat under changing climate
 - Water quality using satellite information



Other monitoring



Lake monitoring data

- Cooperative Lake Monitoring Program
 - State agencies, academics, and conservation organizations
- DNR Status and Trends
 - Understanding state-wide changes over space and time
- Other monitoring efforts
 - Fill in some gaps



Resources

[Michigan Lake Water Clarity Interactive Map Viewer](#)

[Status and Trends Inland Lake Habitat Viewer](#)

[Conservation Guidelines for Michigan Lakes and Associated Natural Resources](#)

[Michigan Natural Shoreline Partnership](#)

[Michigan Inland Lakes Partnership](#)

[Michigan Shoreland Stewards Program](#)

[Midwest Glacial Lakes Partnership](#)

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