Management Plan for Walleye in Michigan's Inland Waters

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NRC Fisheries Subcommittee Meeting
May 11, 2023

Seth Herbst, Ph.D.

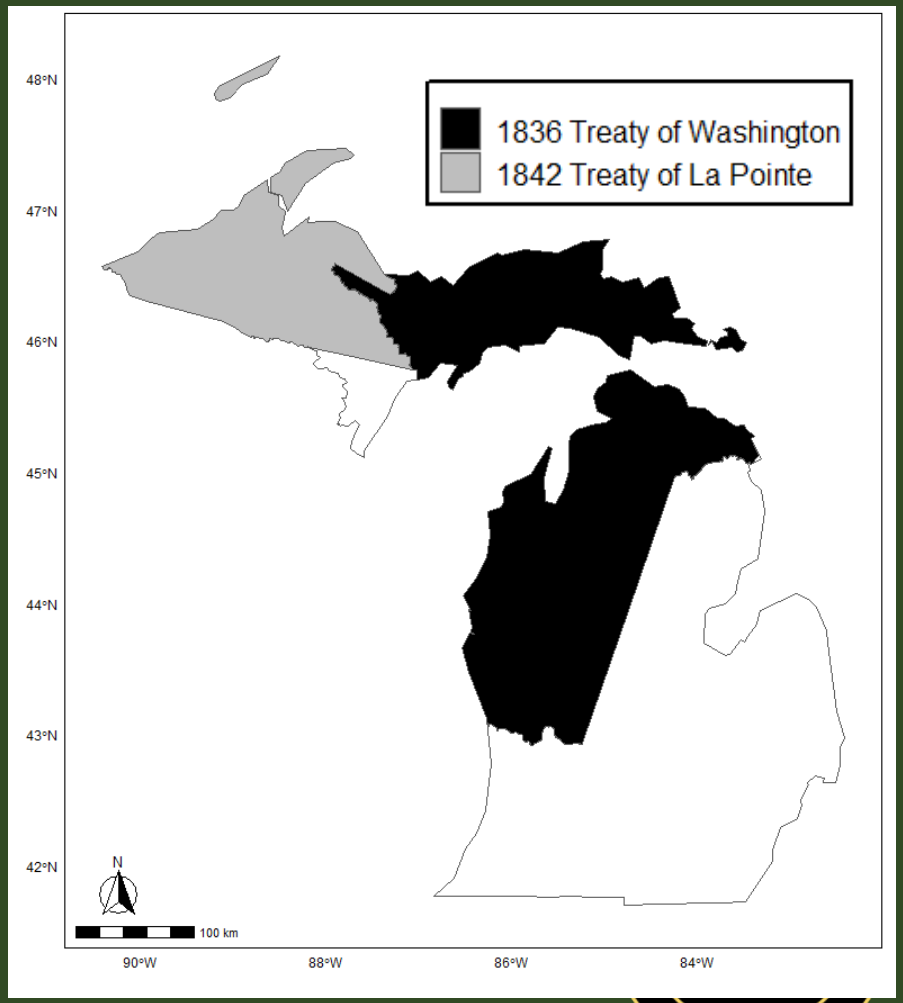
MDNR - Fisheries Division

Walleye life history

- Native to large rivers and lakes
- Top predator – ecologically important
- Habitat characteristics drive population status
  - Coolwater species – northern regions are more suitable
  - Large – mesotrophic lakes
  - Spawn successfully on coarse substrate in nearshore areas or rivers in spring
  - Sensitive to light – water clarity matters!

Co-management with Tribal governments

- "Coordinate activities between the State and Tribal entities with regards to fishery resources"
- Inland
  - Implement the 2007 Inland Decree in 1836 Treaty ceded waters
  - Monitor and manage Walleye populations that support both the exercise of treaty-reserved rights by tribal members and recreational fishing by state-licensed anglers



MDNR Management Plan

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

FR36 August 2022

Management plan for Walleye in Michigan's inland waters

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www.michigan.gov/dnr/

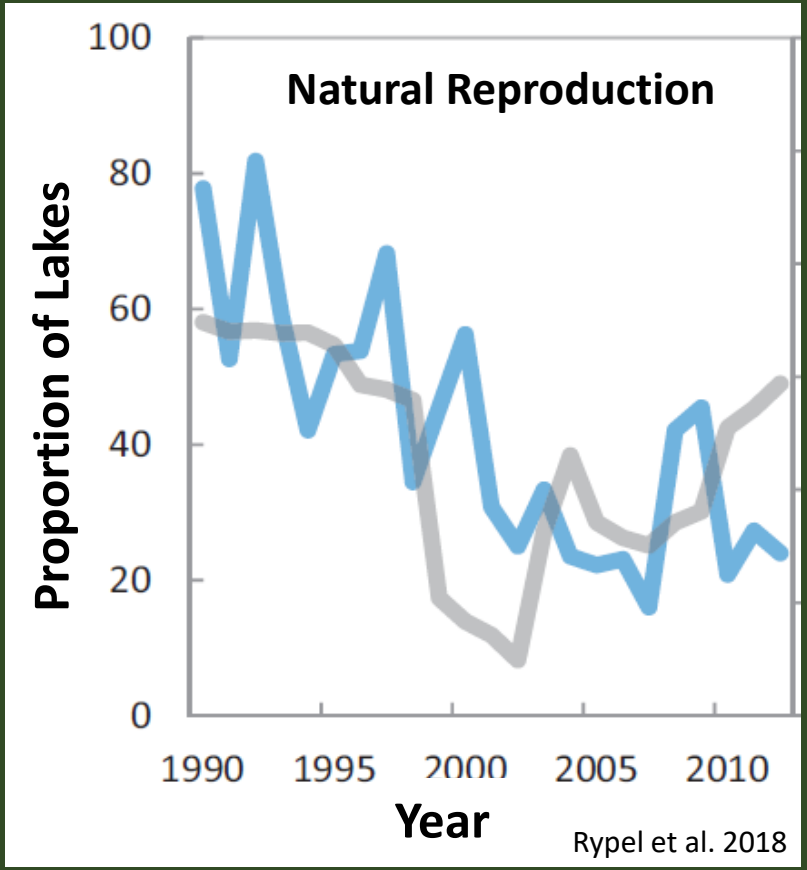
FISHERIES DIVISION
FISHERIES REPORT 36

Purpose & Scope

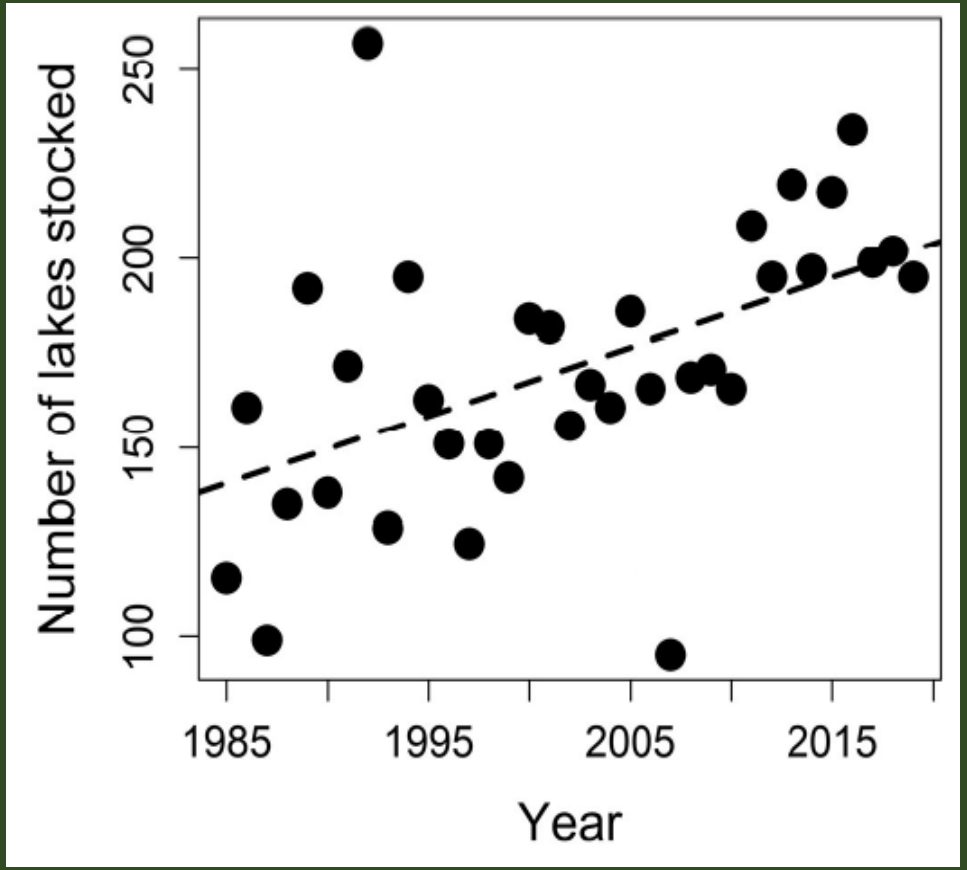
- **High priority species** - ecological, social, and cultural significance
- **Emerging threats** to Walleye populations
  - Climate change
  - Recruitment & abundance declines
  - Aquatic Invasive Species
  - Exploitation

Results of Ecological Change

- Decline in natural recruitment (WI lakes)
- Increased reliance on stocking

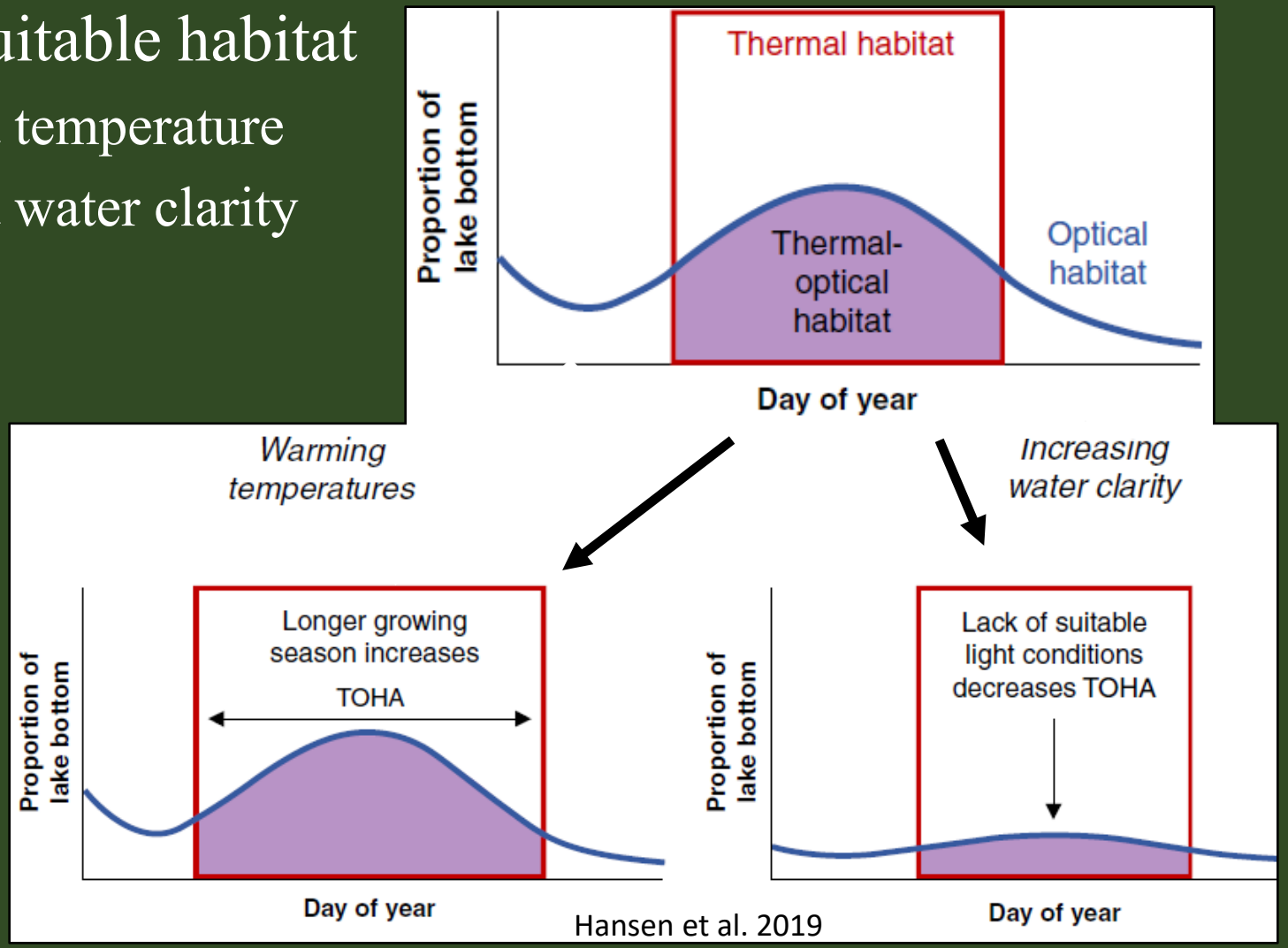


Rypel et al. 2018



Results of Ecological Change

- Reduced suitable habitat
  - Increased temperature
  - Increased water clarity



Hansen et al. 2019

Results of Ecological Change

- Redu
  - Inc
  - Inc
- Shift
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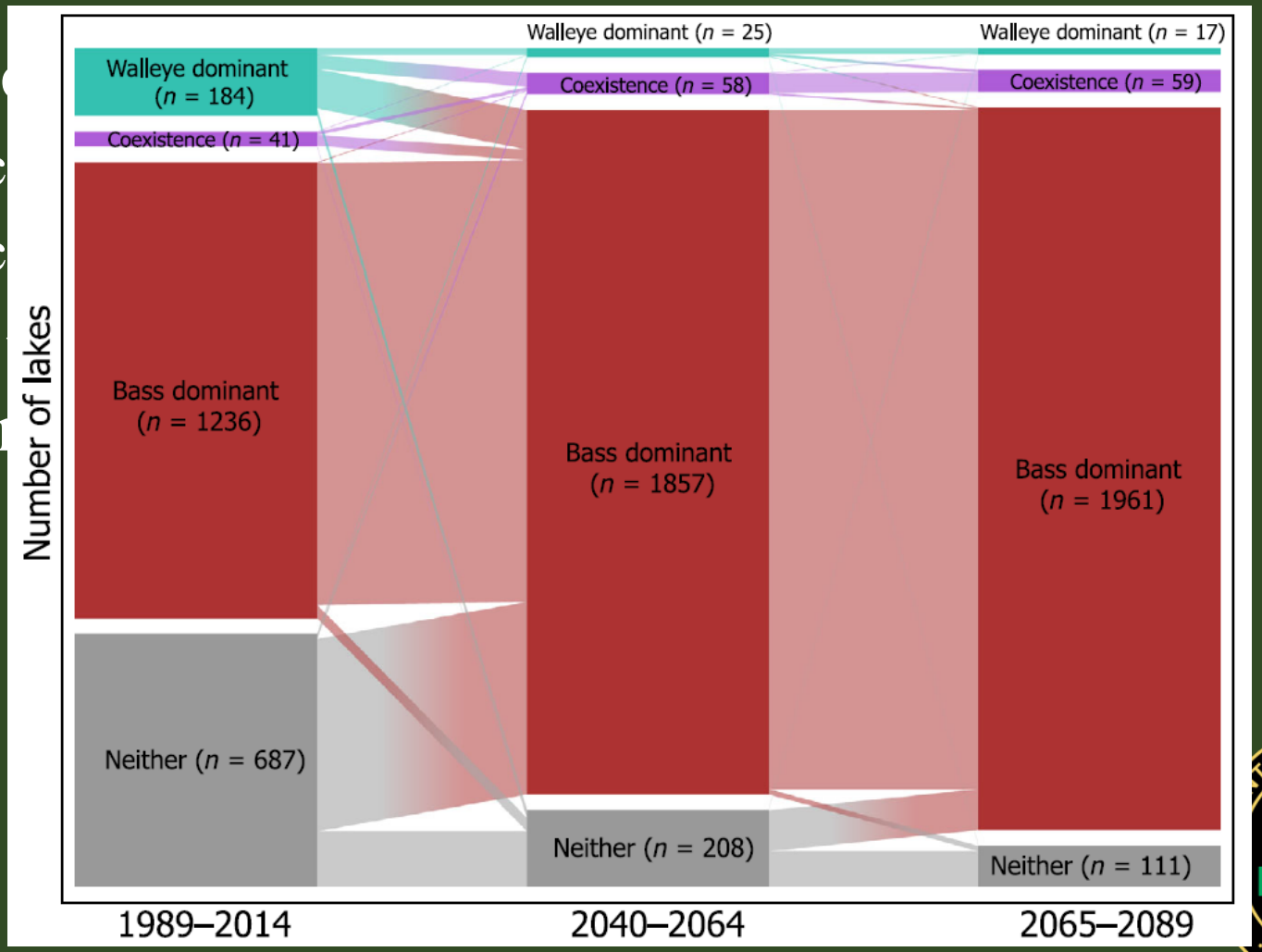


Hansen et al. 2017

Purpose & Scope

Fisheries Division felt it was prudent to **update goals, objectives, and strategies to guide statewide** Walleye management in future years

Overarching Goal

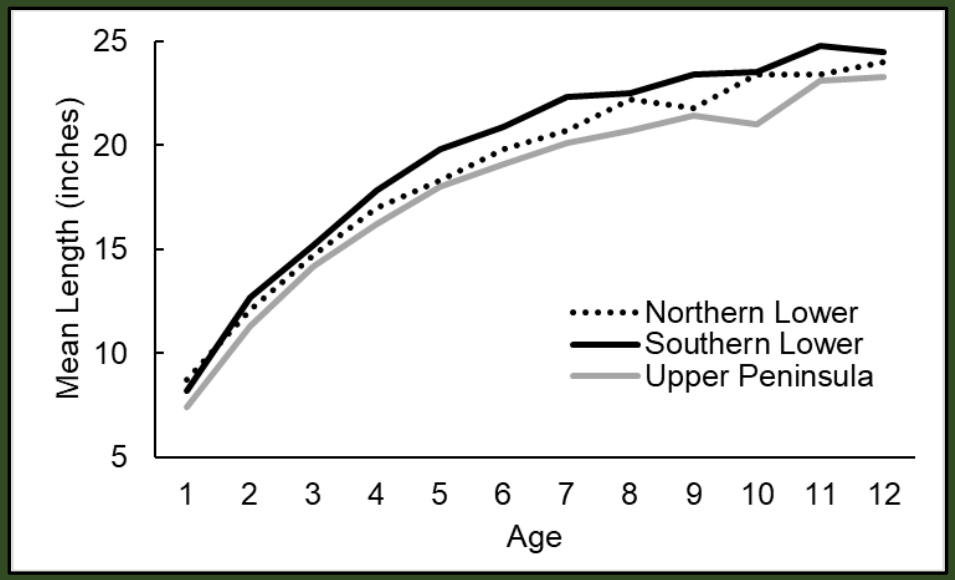
- **Protect, conserve, and adaptively manage Walleye populations** to maximize ecological benefits and angler satisfaction derived from healthy Walleye populations and fisheries

Goals

1. Protect, restore, or enhance habitats supporting Walleye populations
2. Maintain self-sustaining Walleye populations
3. Maintain and further develop relations with tribal governments and stakeholders
4. Provide production capacity for Walleye stocking
5. Provide diverse opportunities for Walleye fishing
6. Manage Walleye populations to achieve desirable fish community characteristics

What is in the plan?

- Statewide status
  - Distribution
  - Relative abundance
  - Growth rates
  - Reproduction



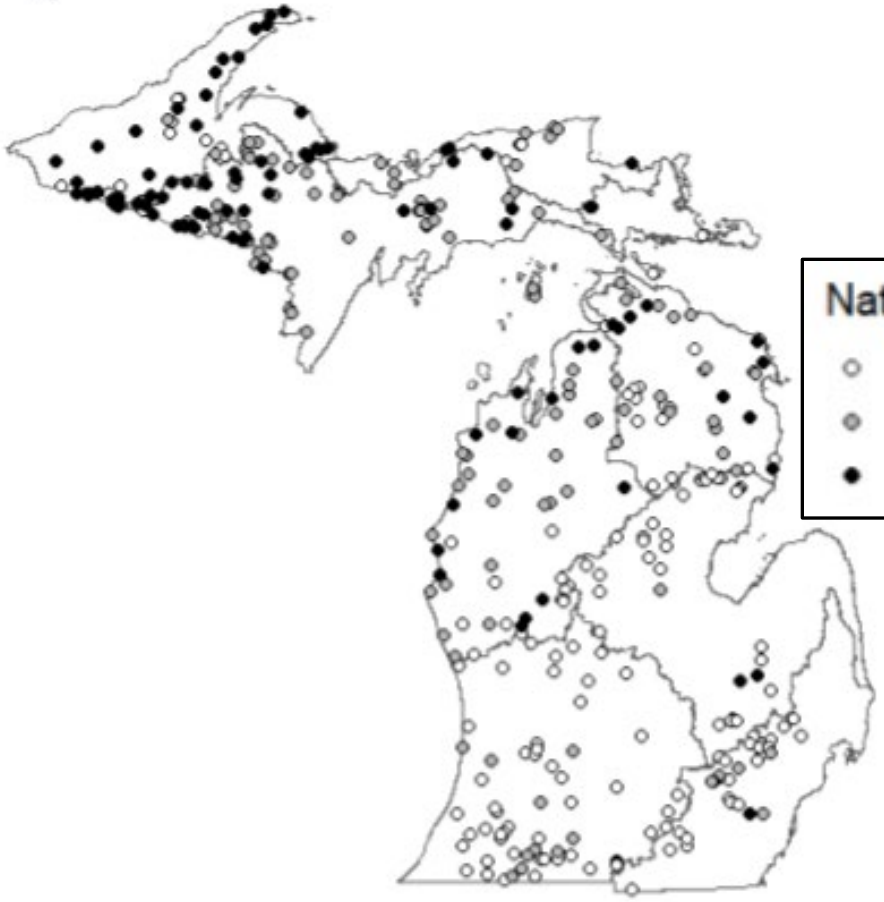
- Population metrics will be used for evaluating effectiveness of management activities

Assessing Walleye populations

- Adult population estimates
- Status and trends program
- Recruitment surveys
- Large lakes survey program

Reproduction dynamics

Prioritize protection in lakes with natural reproduction



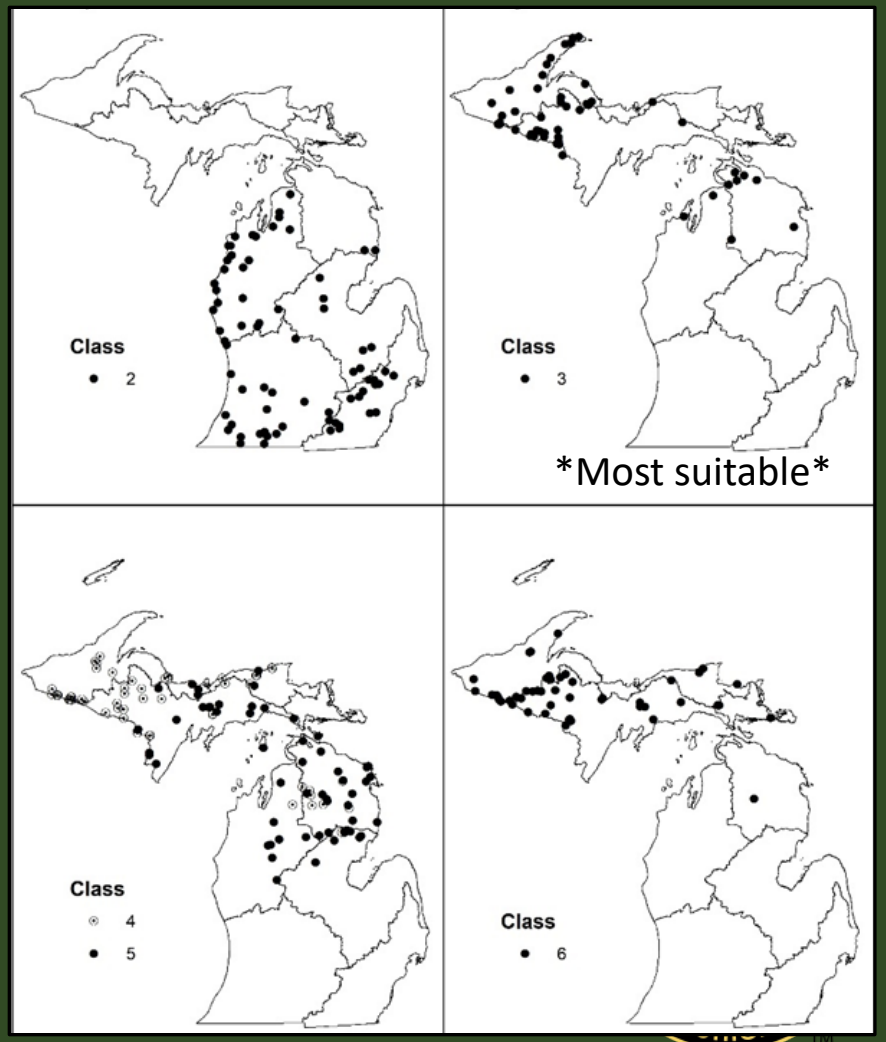
Natural Reproduction Category

- None
- Variable
- Consistent

What is in the plan?

Lake Classification – Habitat is critical!

- Statewide Walleye habitat suitability to prioritize management efforts
  - Large and coolwater lakes
  - Suitable spawning habitat
  - Ample food resources
  - Predicted resiliency to environmental change



What is in the plan?

Lake Classification – Habitat is critical!

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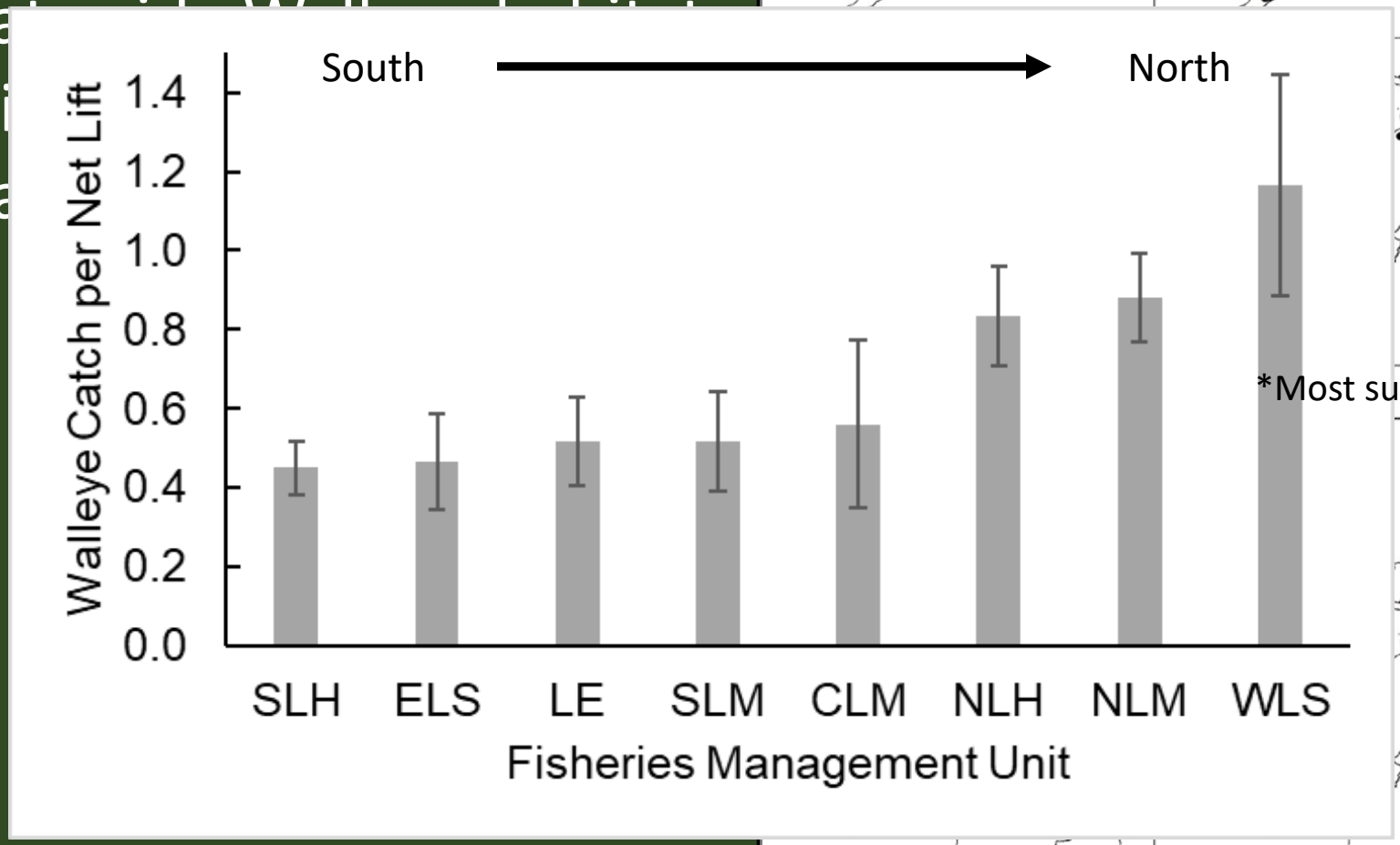


What is in the plan?

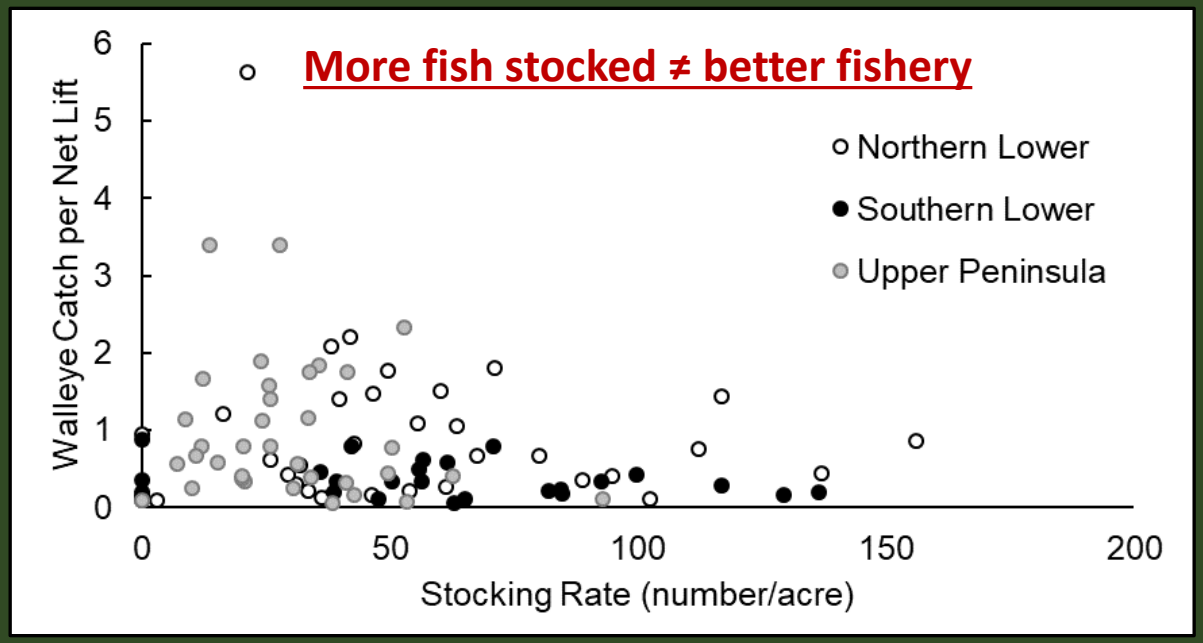
- Angler behaviors & perceptions
  - Online survey in 2019
    - Prefer statewide regulation
    - Supportive of restrictive regulations when protection is needed
  - Long-term mail survey
    - ~50% anglers target Walleye
    - Travel relatively further for Walleye fishing
- List of lakes managed for Walleye
- Regulation toolbox

Regulations Toolbox

- 15-inch min. size limit and daily limit of 5
- 18-inch min. size limit and daily limit of 2
- No possession of Walleye
- 13-inch min. size limit and daily limit of 5+
- Experimental Protected Slot Limit
  - *Length ranges for restricted harvest and daily possession limits will vary based on available data pertaining to population metrics*

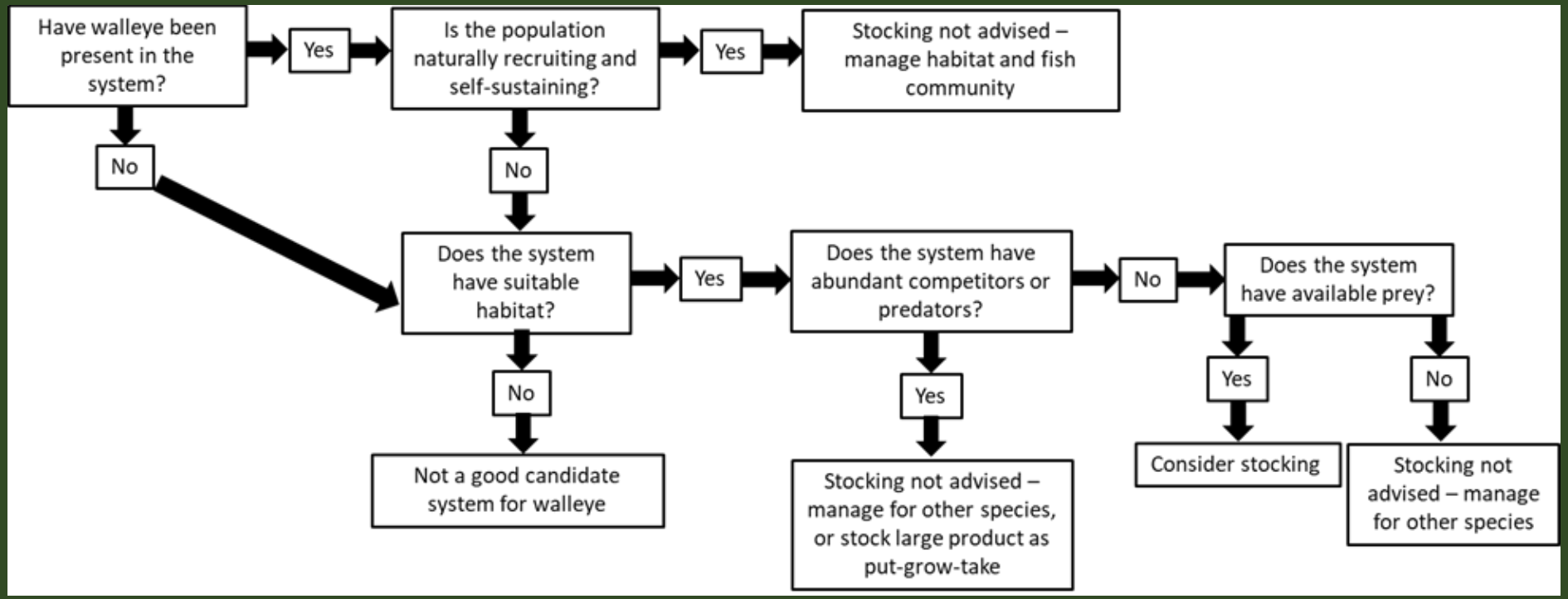
What is in the plan?

- Stocking is useful tool in certain situations
  - Create new fisheries, enhance or supplement suppressed populations, biocontrol for stunted panfish
- Science-based strategy for best use of resources



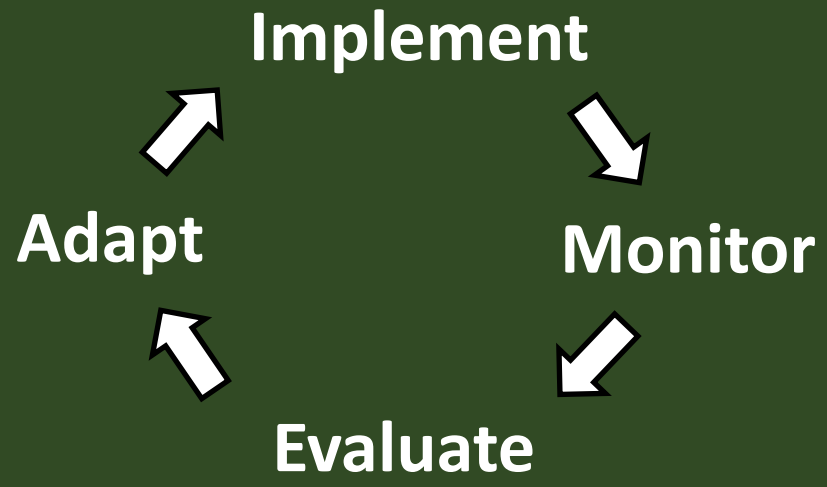
Walleye stocking strategy

- Comprehensive review of Walleye stocking in Midwest
- Decision tree represents synthesized results that are meant to increase the likelihood of a successful stocking event (Raabe et al. 2020)



Adaptive management

- Implement plan
- Prioritize strategic actions based on internal and external feedback
- Partnerships are critical



Questions

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