

2024 Big Eau Pleine (BEP) Comprehensive Survey



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BEPCO - June 8, 2024

BEP Surveys

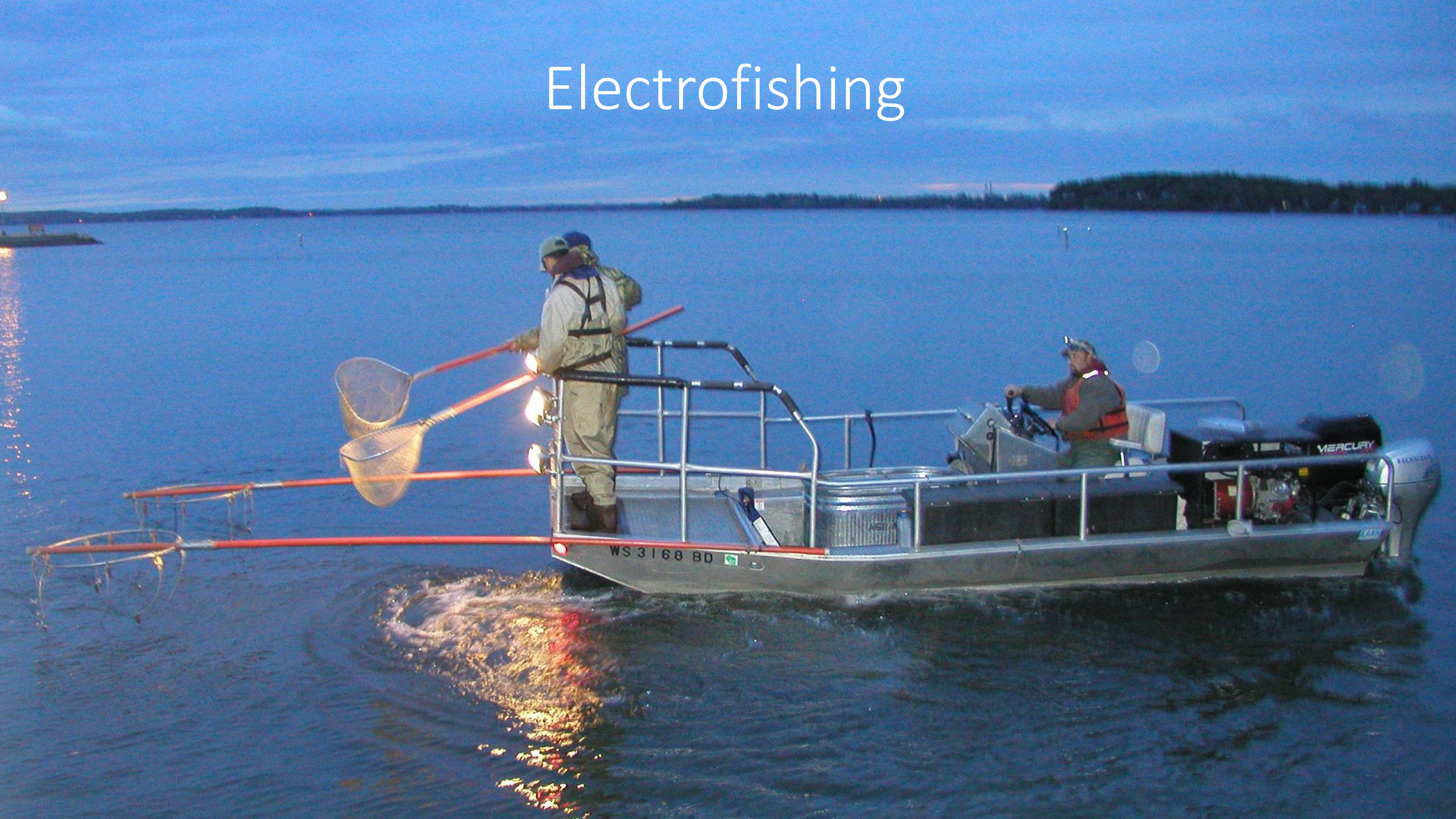
- Comprehensive Fish Surveys
 - 7-year rotation
 - Successful surveys
 - 2003
 - 2017
 - 2024
 - Unsuccessful in 2011
- Annual Fall Recruitment Survey
 - YOY walleye electrofishing
 - Since 2016
 - Four 1-mile stations
- New for 2024
 - Bass surveys
 - Electrofishing upriver



Fyke Netting

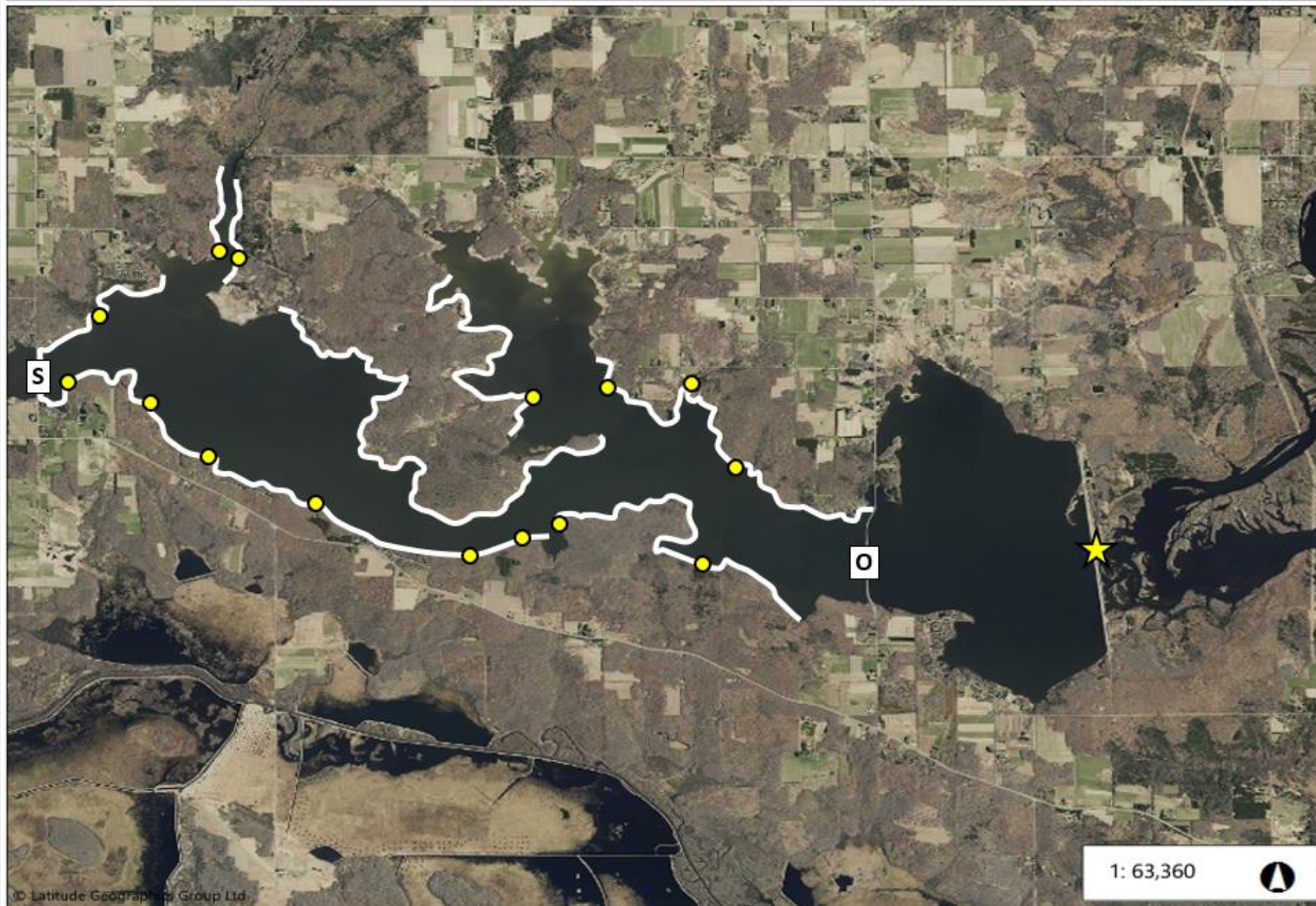


Electrofishing

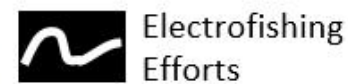




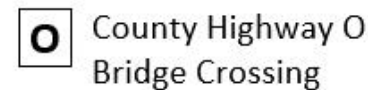
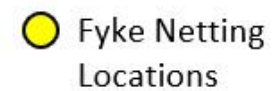
Lower Big Eau Pleine Reservoir (Moon Dam to County Highway S)



Map Features



Electrofishing Efforts



Notes

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Projection: NAD_1983_HARN_Wisconsin_TM

Map created: 5/29/2024

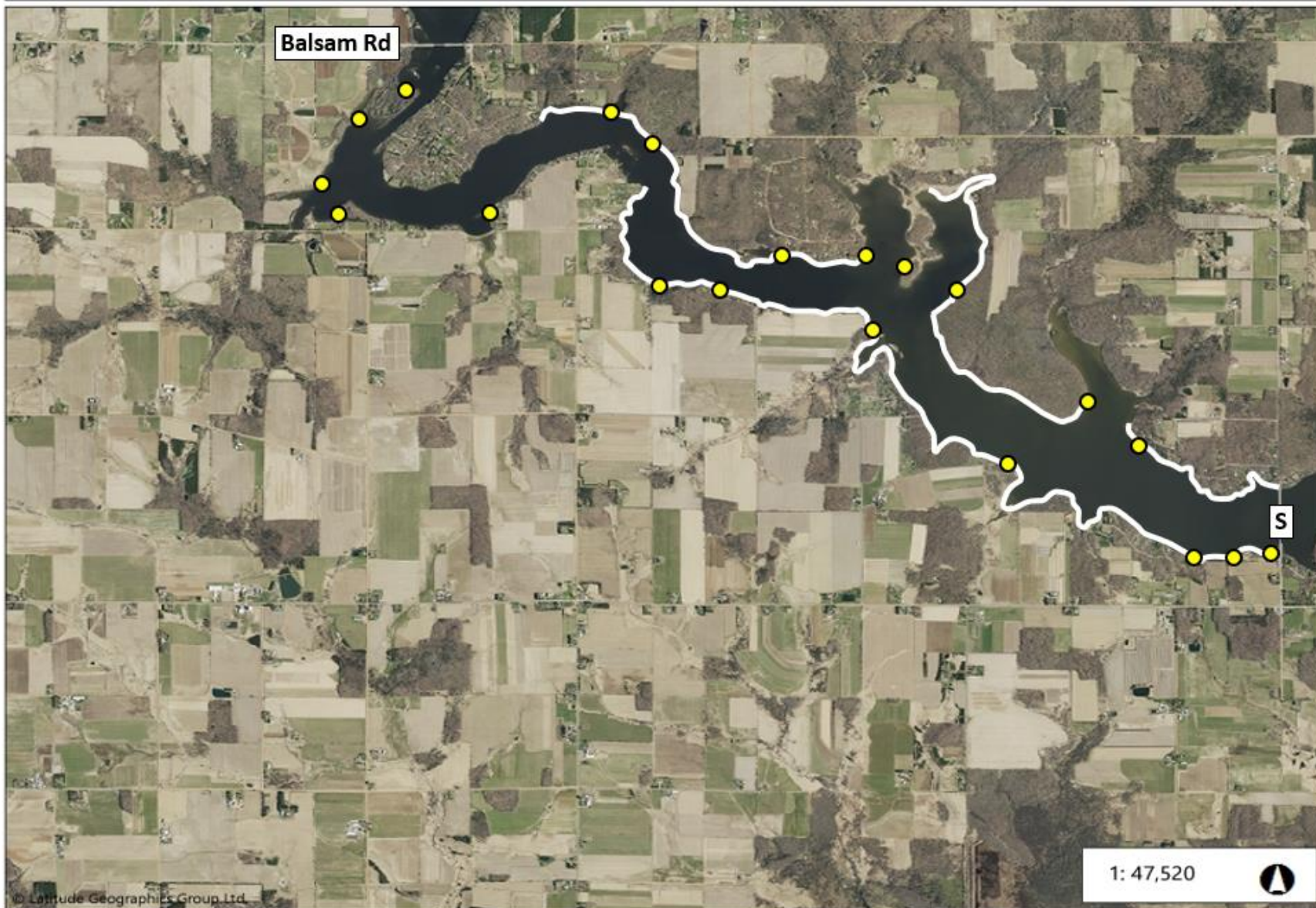
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1: 63,360





Upper Big Eau Pleine Reservoir (County Highway S to Balsam Road)



Map Features



Electrofishing Efforts



Fyke Netting Locations



County Highway S Bridge Crossing

Balsam Rd

Balsam Road Bridge Crossing (Spindler's Bridge)

Notes

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1.50 0 0.75 1.50 Miles

Projection: NAD_1983_HARN_Wisconsin_TM

Map created: 5/29/2024

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Big Eau Pleine River (Upstream of Balsam Road)



Map Features



Electrofishing Efforts



Fyke Netting Locations



County Highway M Bridge Crossing



State Highway 153 Bridge Crossing



Balsam Road Bridge Crossing (Spindler's Bridge)

Notes

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1.00 0 0.50 1.00 Miles

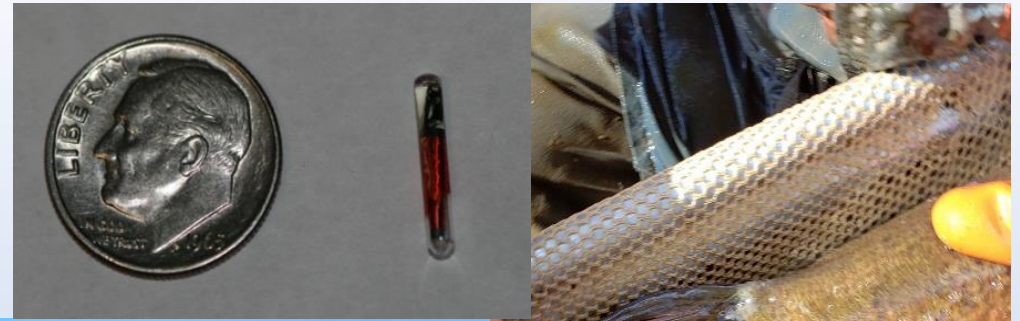
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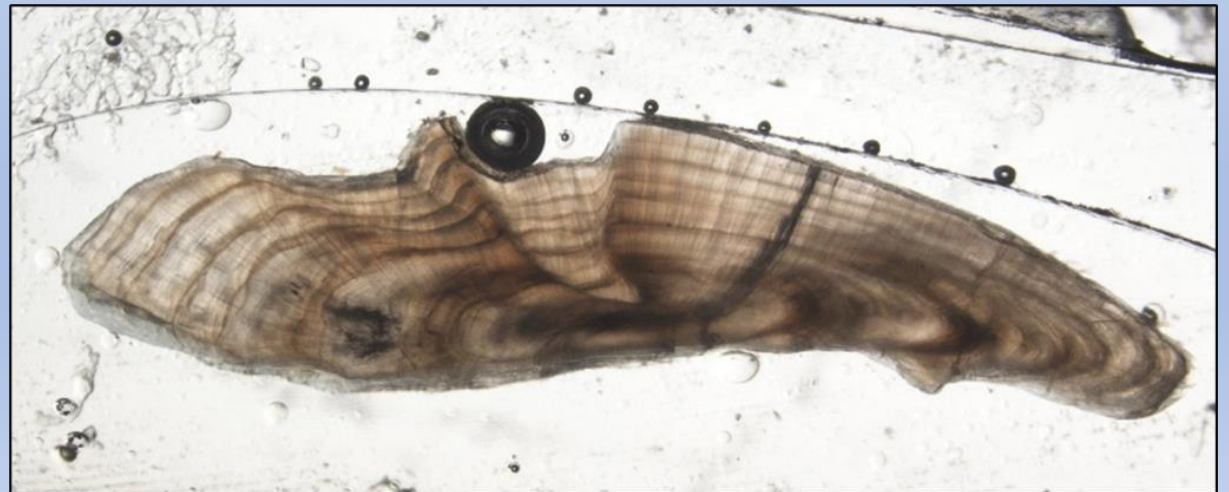
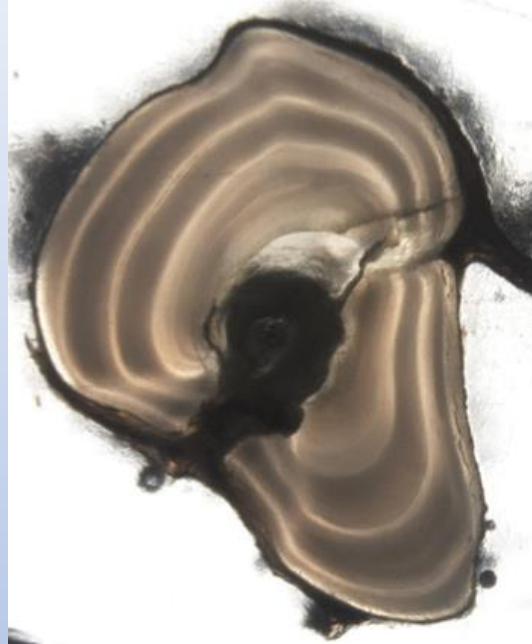
Information Collected

- Length
- Male/Female
- Marks/Tags
 - Fin Clip (top caudal)
 - PIT Tags (musky)
- Aging Structures
 - Otoliths (ear bones)
 - Spines
 - Fin Rays



What can we learn from fish ages?

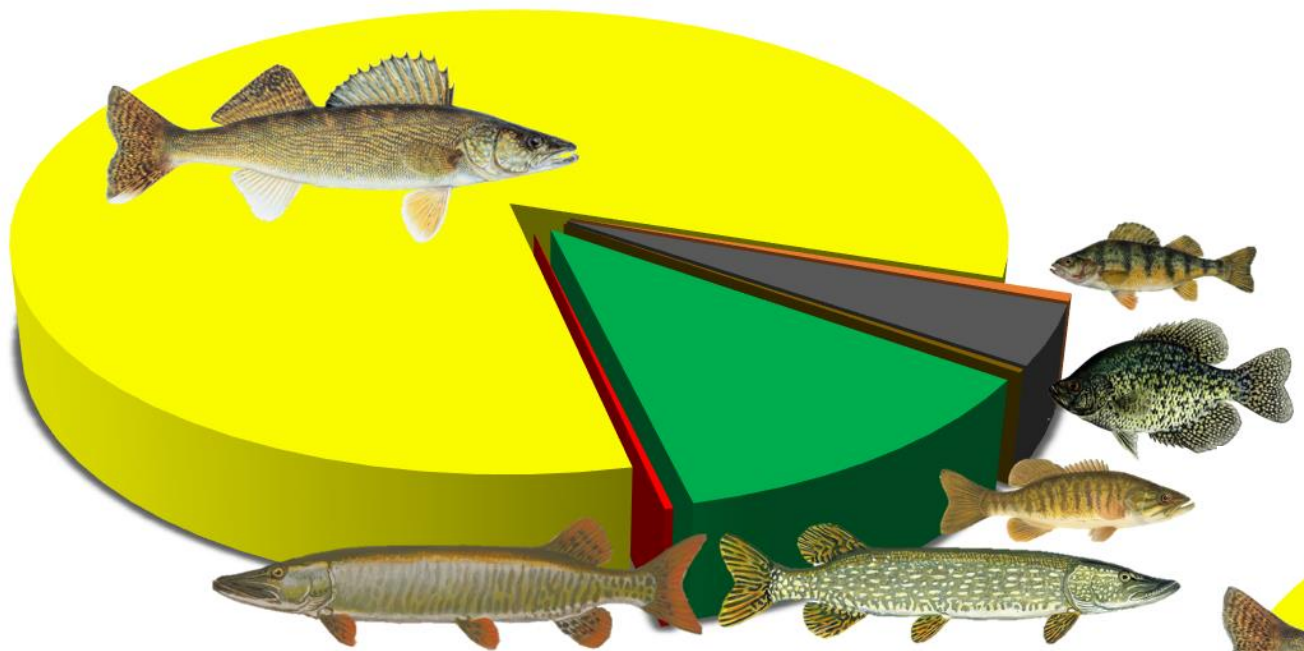
- Growth information
 - Growth rates
 - Length at ages
 - Maximum growth potential
- Number in each age-class
- When they mature
- Environmental conditions
 - Slow growth vs fast growth years
 - Can slow growth on a given year be linked back to an event?
 - Fish die off, food shortage, etc.



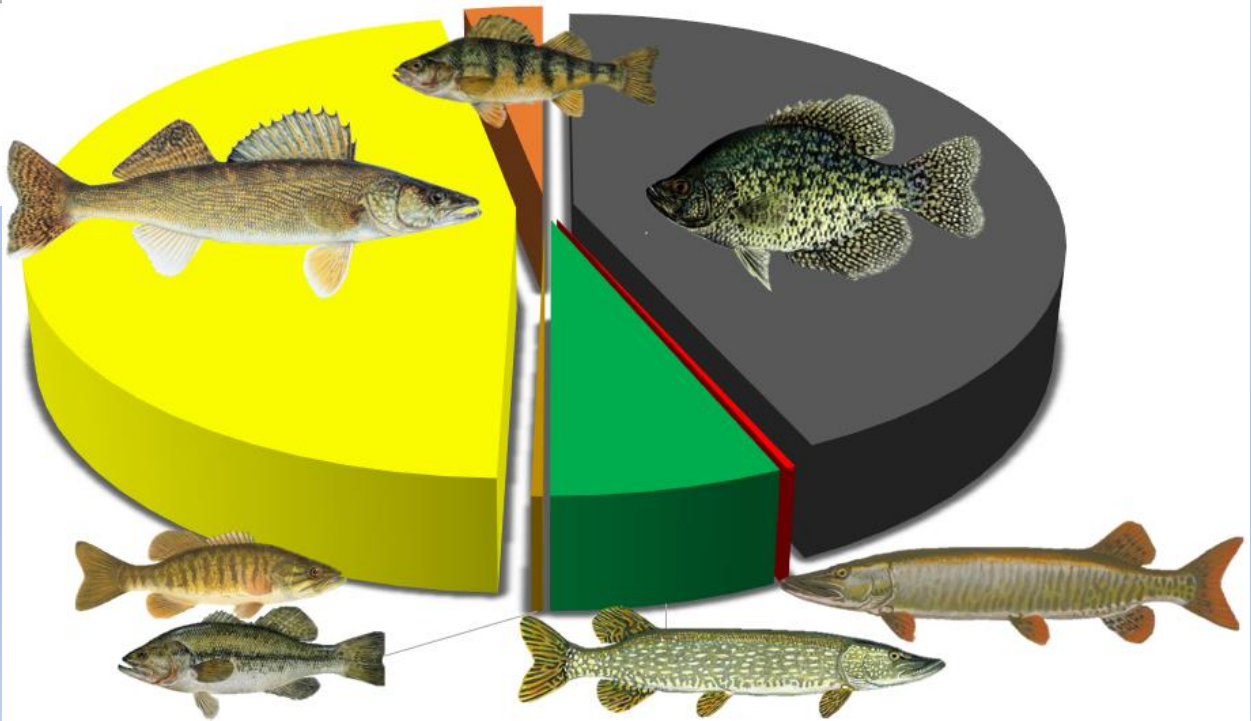


Past Surveys and Preliminary 2024 Results

Gamefish Catch



2003



2017

Yellow Perch

- Preliminary results in 2024
 - Minor component of fish community
 - Becoming less prevalent since 2017
 - Captured very few
 - Small size structure
 - Not captured from BEP



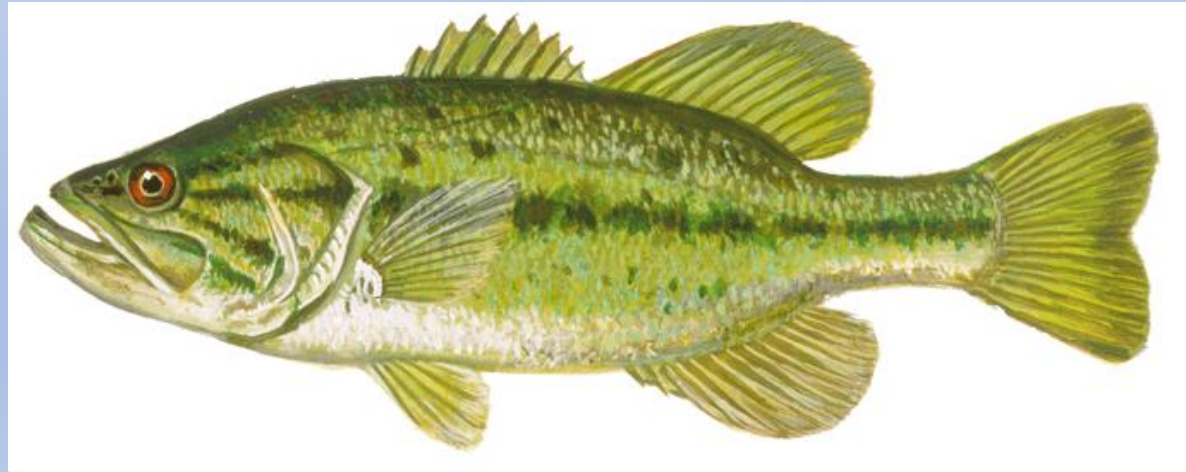
Black Crappie

- Preliminary results in 2024
 - Major component of fish community
 - High abundance
 - Make up majority of catch
 - Dynamics in size structure and year class strength not well understood
 - 8-11 inches make up majority of population



Smallmouth & Largemouth Bass

- Preliminary results in 2024
 - Minor component of fish community
 - Becoming more prevalent over the past 3 surveys since 2003
 - Bass targeted survey to occurred in May
 - Majority of smallmouth bass catch was upriver
 - We hear of the increase in largemouth bass catch by anglers
 - Surveys targeting largemouth have been difficult with little success
 - Continue to adapt our sampling strategies



Northern Pike

- Preliminary results in 2024
 - Declining abundance since 2003
 - 2003 population estimate = 4,291 (2,007 captured)
 - 2017 population estimate = 2,704 (669 captured)
 - 2024 no estimates yet but <500 captured
 - Decline in size structure since 2017
 - The 2017 populations size structure ranked #1 statewide for fyke netting surveys since 2010
 - 38 were captured $\geq 40''$!!!
 - Still need to analyze 2024 data
 - Only 1 captured $\geq 40''$
 - The 2024 population still capable of providing a trophy fishery



Muskellunge and Hybrids

- Preliminary results in 2024
 - Musky targeted netting survey late April
 - Water temps were not quite there (low 50s)
 - Ultimately unsuccessful survey
 - Captured so far this year:
 - 7 adult musky
 - 1 tiger musky
 - 10 yearling musky
 - First evidence of natural reproduction
 - No stocking since 2016
 - Captured more yearling musky so far this year than in all survey efforts combined in the WI River in central Wisconsin which is a class A1 musky fishery!



Walleye

- Preliminary results in 2024
 - Major component to fish community
 - Captured during all survey efforts and nearly all habitats (they were widespread and everywhere)
 - Captured 6,500+ so far this year
 - Population stable since 2017
 - Largest captured was 31.5" (top right picture)
 - All natural reproduction since 2019
 - Population estimates:
 - 2003 = 43,695 walleye (3,630 over 15")
 - 2017 = 22,857 walleye (7,200 over 15")
 - 2024 = 21,000 – 24,000 walleye (preliminary estimate)
 - Verified heavily used spawning grounds upriver
 - Many fish spawn upriver that need to be included in population estimates for our next survey in 2031



Bluegill

- Present but in extremely low numbers



Golden Redhorse



White Sucker



Silver Redhorse



Hognose Sucker



Golden Shiner



Shorthead Redhorse



Common Carp



Yellow Bullhead



black bullhead



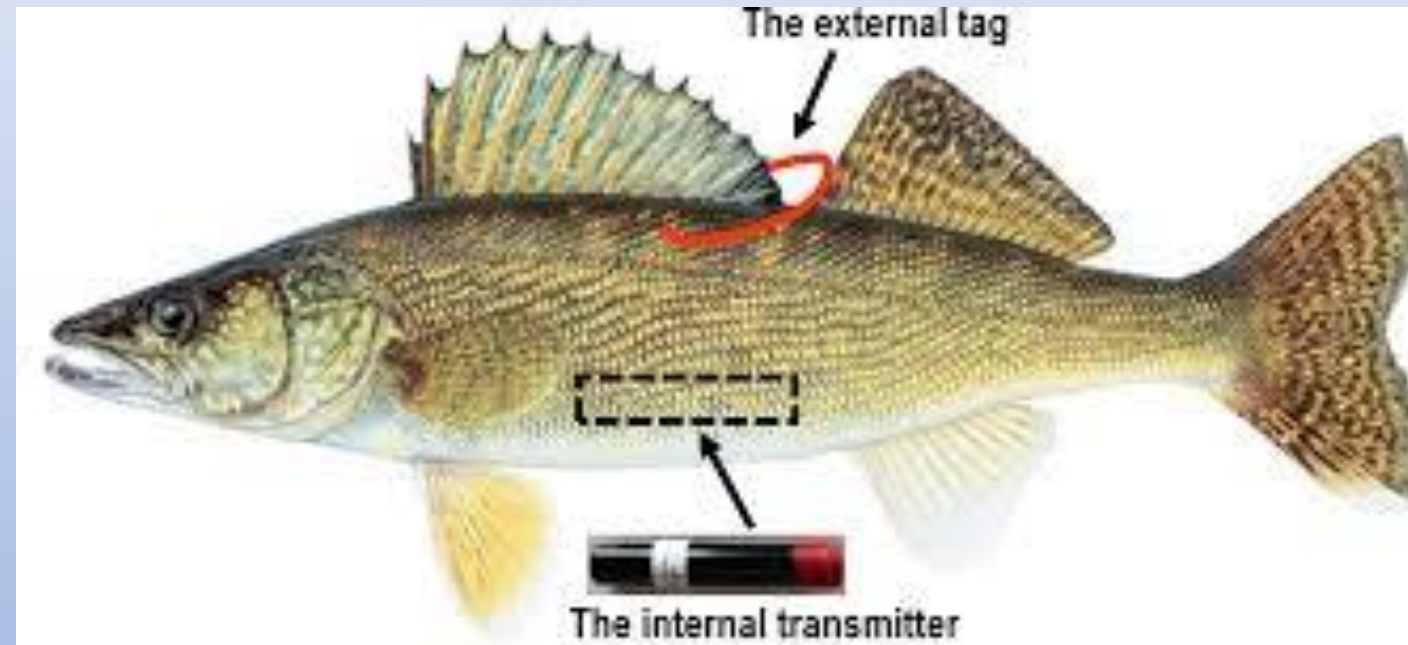
A Step in the Right Direction

- One Burbot captured this spring!
 - First documentation of them in the reservoir
 - Indicator of an improving watershed and water quality

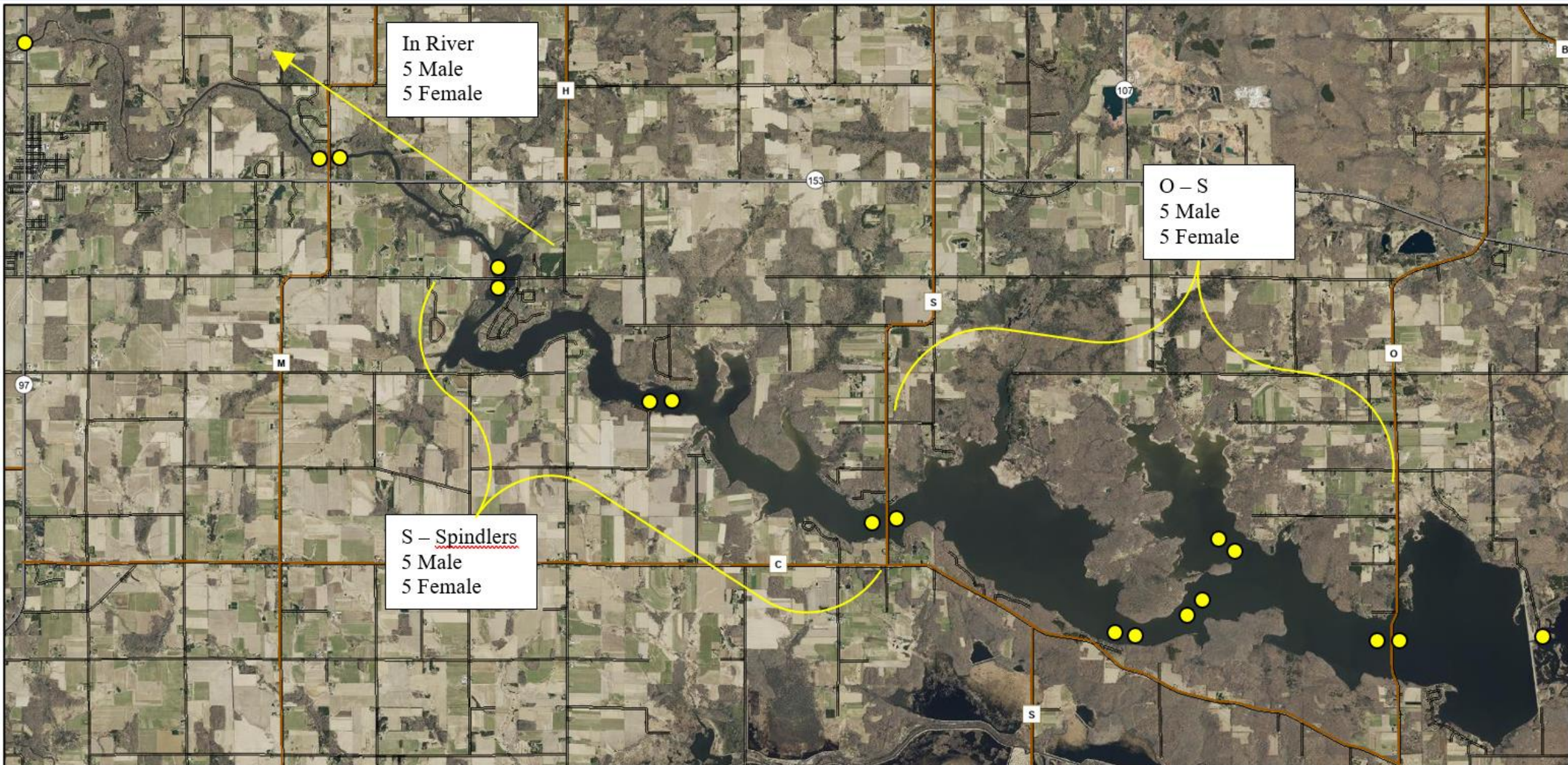


A multi-year fish movement study on the BEP

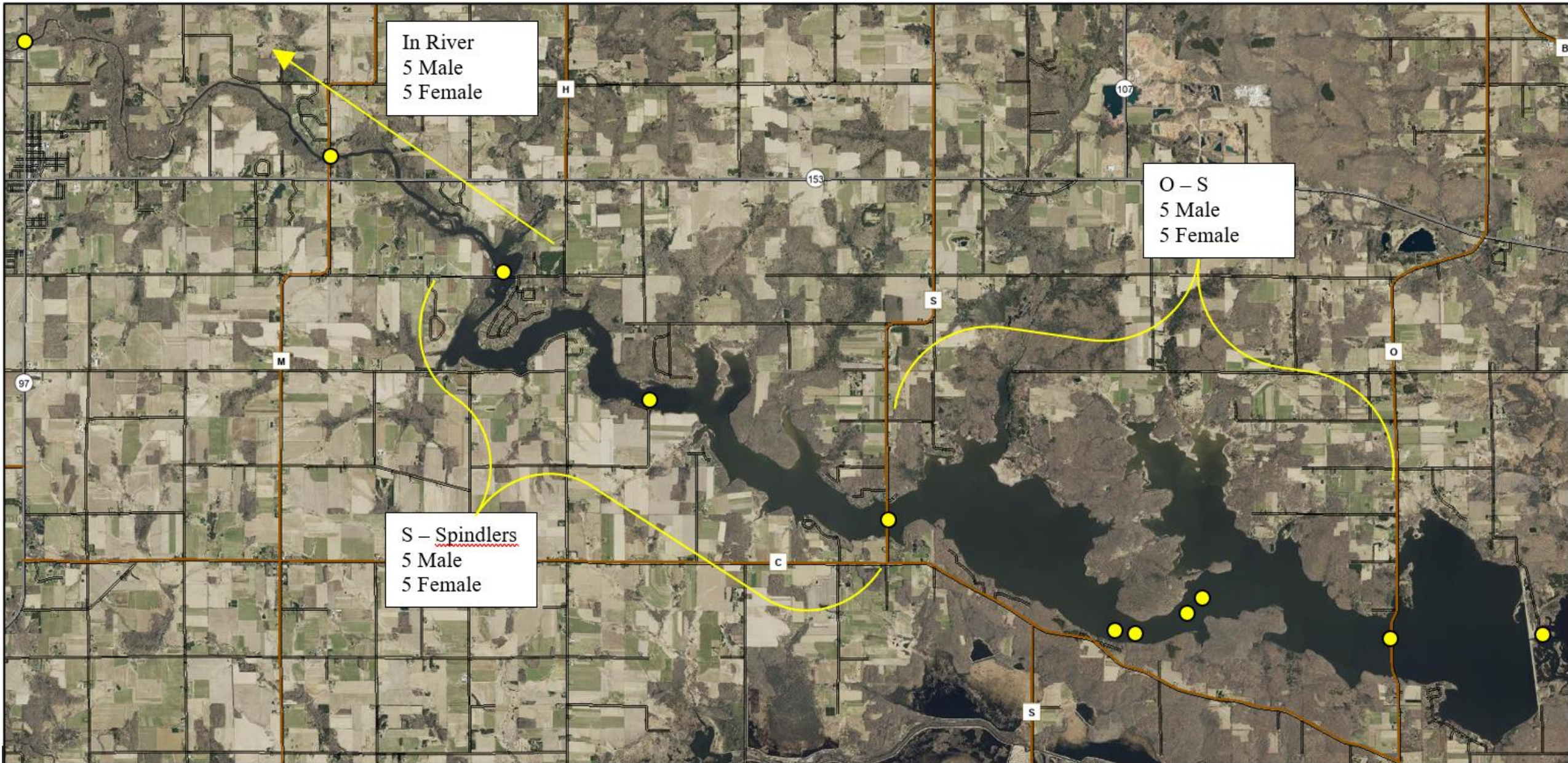
- Marathon County, DNR Fisheries, WVIC, BEPCO, and UWSP
 - Walleyes for Tomorrow?
- “Effects of Low Dissolved Oxygen on the Behavior, Ecology and Movement of Walleye in the Big Eau Pleine Reservoir”
 - Northern Pike?



Ideal Scenario



Likely Scenario – Funding Limited



Study Objectives

- 1) Determine movements of adult walleye throughout the year
 - Movement timing and location/direction and fish distribution
 - Do fish move upstream as the DO “sag” increases?
 - Do fish take refuge in the aeration zone as the DO “sag” increases?
 - How do fish move throughout the BEP as water level, temps, and flows change?
- 2) Identify other DO refuge areas throughout the BEP
- 3) Secondary: Timing when aerators are turned on
 - Are fish already vacant by the time the aerator is turned on and DO is low?
 - If vacant, do fish move back into the aeration zone for refuge?

Questions?

