

Lake Michigan/Green Bay Research Priorities - 2025

These priority research needs were developed by the WDNR Lake Michigan Fisheries Team to encourage progress towards meeting objectives in the Lake Michigan Integrated Fisheries Management Plan and, in some cases, Lake Michigan Fish Community Objectives (FCOs) and Environmental Priorities set forth by the Great Lakes Fishery Commission's Lake Michigan Committee. Interested researchers should review the [LMIFMP](#), [FCOs](#), [Environmental Priorities](#), as well as the latest version of the [State of Lake Michigan](#) documents for additional background information concerning these research priorities. The current list of priority research questions identified by the WDNR Lake Michigan Fisheries Team are listed in no particular order of importance, but any innovative research project that clearly advances the achievement of FCOs or objectives within the LMIFMP will be encouraged, even if not included in the specific list of priority research questions. Researchers are requested to discuss potential projects with Lake Michigan Fisheries Team members.

SPECIES	RESEARCH ITEM	WDNR CONTACT
Walleye	Identify critical juvenile habitat	Jason Breeggemann Jason.Breeggemann@wisconsin.gov 920-662-5480 (office) 920-420-4619 (cell)
Muskellunge	- Egg survival and larval recruitment - where is the bottleneck occurring? - What factors are contributing to the lack of recruitment? Egg suffocation? Egg predation? Larval predation? Lack of adequate nursery habitat? - What are the key habitat features in areas where successful recruitment has been observed (e.g., Menominee River and Sturgeon Bay)?	Jason Breeggemann Jason.Breeggemann@wisconsin.gov 920-662-5480 (office) 920-420-4619 (cell)
Northern Pike	Identify and collect data from other Lake Michigan populations for comparison with Green Bay stocks. What is the status of populations along the Lake Michigan shoreline?	Tammie Paoli Tammie.Paoli@wisconsin.gov 715-582-5052 (office) Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell) Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Northern Pike	Spawning habitat (identifying locations in Lake Michigan tributaries). What streams & wetlands are northern pike utilizing for spawning in Lake MI tributaries?	Tammie Paoli Tammie.Paoli@wisconsin.gov 715-582-5052 (office) Scott Hansen

	What are the movement patterns of northern pike from spawning areas to the open waters of Green Bay?	Scott.Hansen@wisconsin.gov 920-559-3474 (cell) Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Northern Pike	Field evaluation of swimming speed and duration in regards to potential fish passage barriers to pike spawning habitat.	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Smallmouth Bass	- Population characteristics (P.E., growth, age distribution, harvest) - What are the factors that affect recruitment in Door County waters? - Are differences known about stocks in Green Bay and remainder of Lake Michigan?	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell) Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Smallmouth Bass	- What is the cause/impacts/distribution of lesions on smallmouth bass? - What is the impact of Largemouth Bass Virus and is it related to the lesions on smallmouth?	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell)
Yellow Perch	Research on habitat improvement in southern Lake Michigan harbors to benefit perch populations/population dynamics within harbors.	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Yellow Perch	Investigate alternate sampling methods to assess yellow perch recruitment in Green Bay to supplement trawling surveys.	Tammie Paoli Tammie.Paoli@wisconsin.gov 715-582-5052 (office)
Lake Sturgeon	- Utilize fish surveys (nets, seines, nighttime visual, PIT array) to assess survival and outmigration rates in the Milwaukee and Kewaunee Rivers. - Estimate survival rate for newly stocked fish into these systems and evaluate the effects of hatchery conditions and stocking location on survival.	Logan Sikora Logan.Sikora@wisconsin.gov 920-559-9329 (cell) Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Lake Sturgeon	- Analyze genetic samples for SRF reared fish and returning adults - Create log of genetics for sturgeon populations for each tributary in LM and GB	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell) Logan Sikora Logan.Sikora@wisconsin.gov 920-559-9329 (cell)
Lake Sturgeon	Larval and juvenile migration from feral populations.	Aaron Schiller Aaron.Schiller@wisconsin.gov

	Determine movements of juvenile sturgeon at spawning rivers, Green Bay and Lake Michigan?	414-852-5488 (cell) Logan Sikora Logan.Sikora@wisconsin.gov 920-559-9329 (cell)
Lake Sturgeon	- Evaluate lake wide movements, maturity at spawning, spawning frequency, and straying rate for adult sturgeon in reintroduced populations. - Conduct field evaluation of swimming speed and duration of adult sturgeon on spawning runs to inform fish passage design.	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Lake Sturgeon	- Juvenile habitat use in GB tributaries, Milwaukee and Kewaunee rivers. - What substrates and habitat types are juvenile sturgeon utilizing in the estuaries? - Are there seasonal changes in this habitat or residence in the estuaries? - What habitats are utilized outside of the estuaries?	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell) Logan Sikora Logan.Sikora@wisconsin.gov 920-559-9329 (cell)
Rainbow Trout and Brook Trout	- Identify priority areas for habitat improvement projects (for access, hold over areas for spawning adults, spawning, nursery areas, etc.) with reasonable expectations based on watershed scale factors limiting wild production. - Consider contributions of wild production to lake-wide predator/prey balance, and how this might be impacted by habitat improvements.	Logan Sikora Logan.Sikora@wisconsin.gov 920-559-9329 (cell)
Rainbow Trout	Have different genetic strains been maintained (e.g., Chambers vs. Ganaraska vs. Skamania)?	Logan Sikora Logan.Sikora@wisconsin.gov 920-559-9329 (cell) Laura Schmidt Laura.Schmidt@wisconsin.gov 414-416-0591 (cell)
Coho Salmon	- CWT use to determine contribution to fishery by north versus south stocking locations - How are Wisconsin fish contributing to the lake fishery? - Fingerlings vs. yearlings survival/contribution to harvest	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)

Brown Trout	• Is offshore stocking brown trout effective in increasing survival? • To what extent does post-stocking predation play a role in survival of brown trout? • Does prey availability and habitat influence movements from offshore stocking locations to nearshore?	Tammie Paoli Tammie.Paoli@wisconsin.gov 715-582-5052 (office)
Brown Trout	• Determine movement of brown trout after they are stocked offshore, nearshore, or through the ice? • What is the relative contribution for each port/county to overall brown trout harvest (CWT study)?	Tammie Paoli Tammie.Paoli@wisconsin.gov 715-582-5052 (office)
Lake Whitefish	• Recruitment in Green Bay tributaries – Peshtigo, Oconto, Fox and U.P. rivers. • Considering the success of the Menominee River whitefish recolonization, explore conditions that promoted recruitment there and in other Green Bay Rivers. (flows, habitat, etc.)?	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell)
Lake Whitefish	• Green Bay spawning potential – determine presence and abundance of Green Bay (e.g. Sturgeon Bay) spawning population(s)	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell)
Lake Whitefish	• Assessing recruitment dynamics of lake whitefish in Green Bay in comparison to Lake Michigan	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell) Iyob Tsehay Iyob.Tsehaeweldemichael@wisconsin.gov 608-221-6359 (office)
Lake Trout	• Increased natural recruitment has been documented on offshore reefs – assess the genetics of wild recruits, especially as the recently-stocked Klondike strain reaches maturity	Laura Schmidt Laura.Schmidt@wisconsin.gov 414-416-0591 (cell)
Lake Trout	• Assess juvenile lake trout habitat, particularly in nearshore Wisconsin waters.	Laura Schmidt Laura.Schmidt@wisconsin.gov 414-416-0591 (cell)
Lake Trout	• What are the movement patterns of lake trout between the Mid-Lake Refuge and nearshore Wisconsin waters?	Laura Schmidt Laura.Schmidt@wisconsin.gov 414-416-0591 (cell)
Cisco, Chub and Round Whitefish	• Population characteristics & forage assessments (P.E., life history, age, recruitment, diet)	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell)

	• Can we gain adequate information on the adult population to inform management/regulation changes? • Develop a population model for bloater chub	Laura Schmidt Laura.Schmidt@wisconsin.gov 414-416-0591 (cell) Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Burbot	• Population characteristics (P.E., life history, age, recruitment, diet) • Can we gain adequate information on the adult population to inform management/regulation changes?	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell)
Habitat (general)	• Evaluate habitat and identify enhancement opportunities • Continue development of habitat protection, restoration, and rehabilitation priorities through Environmental Principles.	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Miscellaneous	• What is the diet composition of the cormorant population in northern Door County compared to cormorant colonies in southern Green Bay?	Tammie Paoli Tammie.Paoli@wisconsin.gov 715-582-5052 (office)
Miscellaneous	• What are the effects of tournaments on populations of smallmouth bass and walleye, including movement of fish, temperature issues, and barotrauma?	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell) Jason Breeggemann Jason.Breeggemann@wisconsin.gov 920-662-5480 (office) 920-420-4619 (cell)
Miscellaneous	• What is the bycatch from each commercial gear and in each area of Lake Michigan? • What is the barotrauma and/or handling mortality of sturgeon in the commercial fishery?	Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell) Miranda Westphal Miranda.Westphal@wisconsin.gov 920-493-7593 (cell)
Miscellaneous	• Winter harbor and stream fishing in Lake Michigan has never been surveyed by creel, but there is strong interest by stakeholders to enhance our knowledge of these fisheries • Explore other methods to collect angler data such as live cameras and drones • Can changes be implemented to the existing LM/GB open water creel and GB	Laura Schmidt Laura.Schmidt@wisconsin.gov 414-416-0591 (cell)

	ice creel to improve estimates?	
Miscellaneous	Otolith microchemistry – build a library of water chemistry for all Lake Michigan tributaries and hatcheries where it does not already exist	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell)
Miscellaneous	Cumulative or direct impacts of hardened and/or dredged shorelines – look at relationship between shoreline hardening and affects to recruitment.	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell) Scott Hansen Scott.Hansen@wisconsin.gov 920-559-3474 (cell)
Miscellaneous	Develop data management and analysis of PIT and acoustic array data	Aaron Schiller Aaron.Schiller@wisconsin.gov 414-852-5488 (cell) Adam Nickel Adam.Nickel@wisconsin.gov 920-647-6571