

FISHERY RESEARCH PRIORITIES: LAKE MICHIGAN Great Lakes Fishery Commission

Updated January, 2014

This listing was compiled based on input from the Lake Michigan lake committee and its technical committee and from discussions within the Council of Lake Committees (for more information go to <http://www.glfcc.org/lakecom.php>). Order of listing does **not** imply relative ranking of priorities for the Fishery Research Program funding.

Research Priorities

These Lake Michigan Priority Research Needs were developed to encourage progress towards meeting Lake Michigan Fish Community Objectives (FCOs; http://www.glfcc.org/pubs/SpecialPubs/Sp95_3.pdf). We emphasize that the specific FCOs need to be interpreted in the context of the Goals and Guiding Principles within which they were framed. Interested researchers should review the FCOs (Eshenroder et al. 1995), as well as the latest version of the State of Lake Michigan document (Holey and Trudeau 2005), for additional background information concerning these research priorities. Priorities are updated annually; copies of the most recent priority list, the Fish Community Objectives, and the State of Lake Michigan report are available on the GLFC web site (www.glfcc.org), from the chairperson of the Lake Michigan Committee (Tom Gorenflo - CORA), or from the chairperson of the Lake Michigan Technical Committee (Greg Wright – CORA). **The current list of priority research questions identified by the Lake Michigan Committee and Technical Committee is indicated below**, but any innovative research project that clearly will advance the achievement of FCOs will be given serious consideration for support by the LMC, even if not included on the specific list of priority research questions.

- 1) What are the current species-specific abundances, production, and forage demand of the Lake Michigan salmonine community? And what levels of salmonine production and yield are sustainable without threatening the biological integrity of the Lake Michigan fish community – including consideration for other Fish Community Objectives? (Salmon and Trout Object)
- 2) What is the ecological role of invasive species (Dreissenids, Bythotrephes, Hemimysis and Round Goby), their impact on zooplankton and their influence on fisheries production as competitors, predators and prey? (Planktivore, Inshore Fish Objective)
- 3) What contributions do naturalized fish make to the lakewide salmonine abundances, production, forage demand, and annual yield? Is there an interaction between salmonine stocking rates and naturalized salmonine production? (Salmon and Trout Object)
- 4) To what extent does thiamine deficiency complex (TDC) impact the Lake Michigan ecosystem? (Lake Trout Objective,)
- 5) Is it possible to keep alewife below levels that suppress native fish populations while maintaining a viable fishery? If so, what predator salmonine community is best suited to accomplish this? (Salmon and Trout, Planktivore Objects)
- 6) Are the current targets (wounding target of 5 wounds per 100 lake trout and spawning-phase target of 57,000 ±13,000) for sea lamprey control appropriate measures for assessing the relationship between observed wounding indices and the actual population impacts experienced by lake trout, Chinook salmon, whitefish and other host species? (Sea Lamprey Objective)
- 7) Which streams and/or lentic sources contribute to the parasitic lamprey population of Lake Michigan and in what proportion (i.e., account for all sources of lamprey)? (Sea Lamprey Objective)

- 8)** What factors contribute to the instability of Lake Michigan yellow perch stocks? (Inshore Fish Objective)
- 9)** What are the factors preventing native planktivore rehabilitation in Green Bay? (Planktivore Object)
- 10)** What are the population specific factors limiting survival, recruitment and population growth in each remnant and recently stocked lake sturgeon population in the Lake Michigan basin, and what are current demographics and trajectories of existing populations? (Benthivore Objective)

