

FISHERY RESEARCH PRIORITIES:

LAKE SUPERIOR

Great Lakes Fishery Commission

Updated July 31, 2016

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

Research Priorities

A review of the fish community objectives for Lake Superior (http://www.glfrc.org/pubs/SpecialPubs/Sp03_1.pdf) and the Lake Superior State of the Lake Report (http://www.glfrc.org/pubs/SpecialPubs/Sp10_1.pdf) provides a useful context for the priorities listed below.

1) Recruitment

Are observed recruitment declines in Lake Trout, Lake Whitefish and prey fishes due to top-down influences from predation or bottom-up influences from lower trophic levels, or are they limited by inherent stock-recruitment relationships and/or environmental conditions?

Have we reached carrying capacity for Lake Trout and Lake Whitefish in Lake Superior?
Have these species reached density dependence?

2) Mortality

Is the balance of mortality (natural, fishery-induced, and Sea Lamprey) allocated in SCAA models appropriate?

Are the current biological reference points for Lake Trout, Lake Whitefish and Cisco sustainable and appropriate?

3) Ecological Interactions

Can an ecosystem model be developed to allow the assessment of various management scenarios (impact of a siscowet fishery, impact of (or introduction of) invasive species, etc.), including possible climate change scenarios?

Do environmental factors drive ecosystem models, or do population-level and community interactions have the ability to influence model outcomes?

Are there negative interactions (competition, predation) between Brook Trout and non-native salmonines preventing restoration objectives for Brook Trout?

4) Habitat

What is fish production in waters < 15 m? Is this production similar across habitat types?

5) Assessment of methods

Have indicators been developed for inshore fish communities in Lake Superior, and are inshore and embayment fishes communities diverse and healthy?

Is gill net CPUE correlated with bottom trawl densities for Lake Whitefish, deepwater ciscoes, and Lake Trout morphotypes? What factors might drive any observed differences?