



Great Lakes Science Center

The USGS Great Lakes Science Center is dedicated to providing scientific information for restoring, enhancing, managing and protecting living resources and their habitats in the Great Lakes region. The USGS Great Lakes Science Center is headquartered in Ann Arbor, Michigan, and has biological stations and research vessels located across the Great Lakes Basin.



The Center

Since 1927, Great Lakes Science Center (GLSC) research has provided critical information for the sound management of Great Lakes fish populations and other important natural resources in the basin. GLSC research focuses on six science themes: deepwater ecosystems, coastal ecosystems, environmental health, invasive species, restoration ecology, and emerging issues. The GLSC is geographically deployed throughout the Great Lakes basin through seven strategically located field stations and five large research vessels.

The GLSC uses interdisciplinary teams and approaches to provide the information needed to solve the complex biological issues and natural resource management problems facing the Great Lakes. Working in partnership with resource management agencies, the GLSC provides unbiased scientific information on Great Lakes biological and habitat resources, and determines the effectiveness of resource management and ecological restoration efforts. The Great Lakes states, tribal fishery management authorities, Canadian federal and provincial authorities, and U.S. federal agencies are the GLSC's main partners.

The Science

Research at the GLSC is organized

according to six science themes, which build upon historical and current strengths, and anticipate future concerns and needs:

Deepwater ecosystems, involving basin-wide netting and hydro-acoustic surveys, with emphasis on sampling preyfish and other lower trophic level biota, and development of ecosystem models that improve our understanding of food web structure and function.

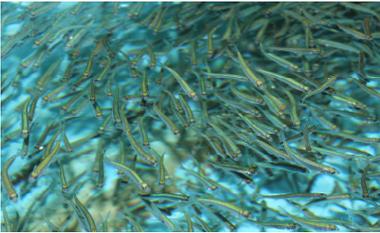
Coastal ecosystems, including research spanning the microscopic to landscape that explores the dynamic zone linking watersheds to offshore waters, terrestrial and aquatic ecosystems, and locations where people use, impact, and appreciate the Great Lakes.

Environmental health, incorporating monitoring of beach and fish health, evaluation of health risks, mitigation of negative effects of stressors, and development of new methods of monitoring to anticipate emerging threats at the lake and basin levels.

Invasive species, focusing on understanding ecosystem impacts through the integration of observational, experimental, and modeling methods that characterize the drivers of invasion, and the development and evaluation of control measures for managers.

Restoration ecology, using scientific expertise in species biology, community dynamics, and ecosystem processes to





restore habitats altered by human activity, rehabilitate vulnerable species, and promote resilient and sustainable communities.

Emerging issues, such as rapid ecological change due to climate effects and species invasions, involving the prioritization of issues, and consideration of how new techniques and technology can change the effectiveness of science.

Field Locations

Cheboygan Vessel Base, Cheboygan, MI. The base provides research vessel capability aboard the R/V *Sturgeon* and R/V *Arcticus* across Lakes Huron and Michigan. A primary research activity is assessing the forage base for salmonids and other fishes of economic importance.

Hammond Bay Biological Station, Millersburg, MI. Research focuses on the effects of sea lampreys on Great Lakes fishes, and the development and refinement of sea lamprey control methods. The station partners with the Great Lakes Fishery Commission and Michigan State University.

Lake Erie Biological Station, Sandusky, OH. Station research focuses on population dynamics of walleye, yellow perch, lake trout and other key predator and forage species. The R/V *Muskie* operates from this

station, with coordinated annual surveys in the western and central basins.

Lake Michigan Ecological Research Station, Porter, IN. Research investigates impacts of ecosystem processes on biodiversity, microbial ecology and risk assessment, biology of endangered species, pollution on interstitial beach sand and beach closings, wetland and aquatic ecosystems, and restoration of biota.

Lake Ontario Biological Station, Oswego, NY. Primary research at this station involves assessing prey fishes to determine Lake Ontario's capacity to support stocked trout and salmon, and restoration of naturally reproducing lake trout. Lake research occurs on the R/V *Kaho*, closely coordinated with partners.

Lake Superior Biological Station, Ashland, WI. The home of the R/V *Kiyi*, the GLSC's largest research vessel, this station focuses its research on the biology, population dynamics, stock delineation, and yield prediction of Lake Superior fishes, with emphasis on lake herring and other forage fishes.

Tunison Laboratory of Aquatic Science, Cortland, NY. The laboratory conducts research to foster sound management and stewardship of aquatic ecosystems and assists in restoration of depleted species, such as the Atlantic salmon, in the watersheds of Lake Ontario and the St. Lawrence River.



Great Lakes Science Center
1451 Green Road
Ann Arbor, MI 48105

(734) 994-3331
www.glsc.usgs.gov
GLSC 2015-1

