



# Great Lakes Science Center

## Mission

The **Great Lakes Science Center (GLSC)** meets the Nation's need for scientific information for restoring, enhancing, managing, and protecting the living resources and their habitats in the Great Lakes. Since 1927 the Center's research has provided critical information for the sound management of Great Lakes fish populations and other important natural resources (e.g. coastal wetlands and aquatic biota) in the basin.

GLSC staff have a wealth of expertise in fish stock assessment and community dynamics, aquatic habitat and food web interactions, nearshore and coastal wetlands ecology, terrestrial ecology, and exotic species.



A lake trout, a valuable Great Lakes sport, commercial and tribal fish.

The USGS, as the science arm of the Department of Interior, is federally mandated to conduct fishery research on the Great Lakes. The GLSC operates five large research vessels, one on each lake. The vessels are equipped for fish population assessment studies, as well as for limnological and habitat sampling.

## Scientific Capabilities

The GLSC uses an interdisciplinary approach, teams, and collaboration to provide the information needed to solve the complex biological issues

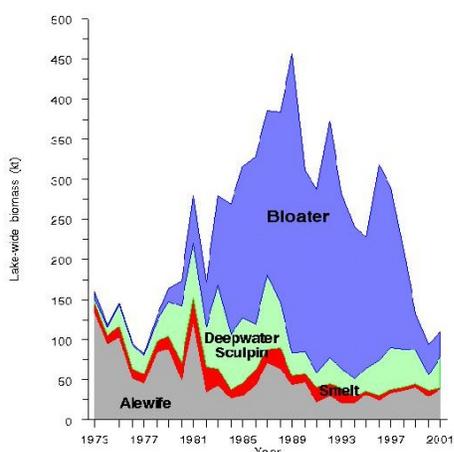
(e.g., exotic species impacts) and natural resource management problems (e.g., fisheries allocations) facing the Great Lakes. Working in partnership with resource management agencies, GLSC provides unbiased scientific information on Great Lakes biological and habitat resources, and determines the effectiveness of resource management and ecological restoration efforts. All eight Great Lakes states, tribal fishery management authorities, Canadian federal and provincial authorities and U.S. federal partners are the Center's main cooperators.



The Center operates research vessels for fisheries and habitat research. (R/V Kiyi)

## Long-term Fishery Research

The GLSC is federally mandated to conduct long-term studies on the fisheries resources of the Great Lakes. The Center has a long history of partnerships and interactions with state, tribal, and U.S. and Canadian federal agencies. Each



Resource managers use information on prey fish abundance to establish fishing quotas and stocking levels of game fish.

year the GLSC performs annual fish stock assessments to provide tribal and state agencies with the information they require to manage the fisheries.

Other GLSC priorities include:

- ◆ Prey fish assessments for managing trout, salmon, and whitefish fisheries.
- ◆ Population dynamics and habitat ecology of native fishes with emphasis on lake trout restoration.
- ◆ Ecological effects of exotic species (zebra mussels, ruffe, gobies and sea lamprey).
- ◆ Predictive modeling to assist managers in their development of harvest quotas, stocking decisions, and the protection of sustainable fisheries.
- ◆ Contaminant trends in lake trout and walleye and their major prey.
- ◆ Global climate change and effects of water level fluctuations on aquatic organisms and their habitats.

## Field Locations

The Center is located on the North Campus of the University of Michigan where two-thirds of its 100 staff members are located. Eight field stations are located throughout the Great Lakes basin. Extensive laboratories are located at the Center and its field stations. Two field stations, located at Munising, MI and Porter, IN focus on coastal issues of concern to the National Park Service.

### ***Lake Superior Biological Station, Ashland, WI***

The home of the R/V Kiyi, the Center's newest and 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 trout, lake herring, and other forage fishes, as well as on the ecological effects of the invading ruffe on native species and ecosystems.

### ***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 evaluate restoration of naturally reproducing lake trout. Lake research is based off of the R/V Kaho, which is closely coordinated with jurisdictional and academic partners.

### ***Cheboygan Vessel Base, Cheboygan, MI***

The Cheboygan Vessel Base provides primary research vessel capability aboard the R/V Grayling across Lake Huron. The R/V Siscowet is temporarily servicing Lake Michigan from Cheboygan and will be replaced by the R/V Sturgeon when renovations are complete. A primary research activity is assessing the forage base for salmonids and other fishes of economic importance.

importance.

### ***Tunison Laboratory of Aquatic Science, Cortland, NY***

The Tunison Laboratory conducts research to foster sound management and stewardship of aquatic ecosystems and assist in restoring depleted species, such as the Atlantic salmon, in the watersheds of Lake Ontario and the St. Lawrence River.

### ***Hammond Bay Biological Station, Millersburg, MI***

Research at the Hammond Bay Biological Station focuses on development of alternative methods of controlling sea lamprey populations, refinement of existing methods, and on the effects of sea lampreys on Great Lakes fishes. The station participates in a formal research partnership with the Great Lakes Fishery Commission and Michigan State University.

### ***Lake Michigan Ecological Station, Porter, IN***

This station investigates the causes of distribution and abundance of terrestrial and aquatic biological diversity of the ecosystems of the Great Lakes Region and the Lake Michigan basin in particular. Research investigates the impacts of ecosystem processes such as fire succession on biodiversity, population biology and dynamics of endangered plants and animals, pollution on interstitial beach sand, wetland and aquatic ecosystems, and restoration of wetland and aquatic biota.

### ***Munising Biological Station, Munising, MI***

This station focuses on studies of disturbance regimes of Great Lakes coastal vegetation with an emphasis on exotic species, fire ecology in boreal forests and sand dune dynamics.

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### ***Lake Erie Biological Station, Sandusky, OH***

Research focuses on changes in the population dynamics of walleye,



Crew at work on the R/V Kiyi