USGS
science for a changing world

Great Lakes Science Center
Deepwater Fisheries Science

The USGS Great Lakes Science Center conducts a regional program of fishery research and monitoring to develop the knowledge and technical basis for assessing, protecting, and rehabilitating the valuable fishery resources and aquatic habitats in the Great Lakes. The fish assessment program in USGS provides fundamental science information that is critical to the States, Federal agencies and Tribal entities for management of the fisheries resource throughout the Great Lakes.

Value and Importance of Great Lakes Fishery and Aquatic Resources

Economic

Commercial and sport fishing generate over $7 billion annually to the economy of the Great Lakes Region. Outdoor recreation and tourism are multi-billion dollar industries in the Great Lakes Region.

USGS fish stock assessments provide information on the status of preyfish populations that are food for trout and salmon in the Great Lakes. This information is critical to resource managers and policy makers.

Ecological

Invasive Aquatic Species threaten the biological integrity of the Great Lakes and compete with native species for food and habitat.

USGS long-term fisheries datasets have been instrumental in the detection of invasive species and in estimating the loss or extinction of native species.

Restoration of native lake trout, a Federal Trust species, is a key component of the USGS Deepwater Fisheries Program.

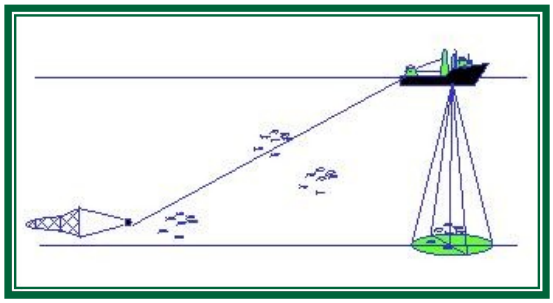
Societal

A healthy aquatic ecosystem is vital to the health and well-being of the people in the Great Lakes region. The Great Lakes and its connecting channels make up the largest fresh surface water system in the world.

Some preyfish and other aquatic organisms are considered indicators of good water quality in the Great Lakes. USGS deepwater research and monitoring tracks changes in preyfish and other aquatic communities that may affect ecosystem health.

At the USGS Great Lakes Science Center we continue to look for opportunities to improve our research to better serve our customers and partners in the Great Lakes. Enhancements to the Deepwater Fisheries Science Program are helping us to more effectively address the challenging issues facing Great Lakes aquatic ecosystems and to strive for a sustainable Great Lakes fishery. To reach these goals we will be:

- **Incorporating state-of-the-art technology in fish assessment sampling and surveys**
  - To determine most accurate estimates of fish abundance and biomass
  - To use ecosystem approach critical for understanding fish population changes by including more environmental variables and sampling invertebrate populations with fish surveys
  - To enhance and refine data gathering opportunities
- **Implementing vessel replacement and vessel haul-out and maintenance strategy**
- **Developing cutting-edge ecosystem studies**
  - Determine the primary influencing size and growth of fish populations
  - Expand lower trophic level sampling to better understand food web changes from invasive species and their effects on the $7 billion annual fishery
  - Develop food web models that will predict changes in fish populations further into the future



Fish sampling methods include remote sensing by hydro-acoustics and verification of fish species with mid-water trawling.

U.S. Department of the Interior
U.S. Geological Survey

Great Lakes Science Center
1451 Green Road
Ann Arbor, Michigan 48105
(734) 994-3331