



Muskegon Lake AOC Habitat Restoration

Ecological Monitoring at seven project sites within Muskegon Lake will help to determine the success of these restoration projects and provide support for the delisting of Muskegon Lake as an Area of Concern.



Photo provided by Lake Superior State University

Project Highlights

Monitoring of macrophytes, sediment, benthos, fisheries, shoreline vegetation, and water quality

Restoration sites include Grand Trunk, Amoco, Kirksey, Heritage Landing, Veterans Memorial Park, and Bear Creek

Funding is provided by the Great Lakes Restoration Initiative (GLRI) and U.S. Environmental Protection Agency through the National Oceanic and Atmospheric Administration (NOAA) and the Great Lakes Commission (GLC)

The West Michigan Shoreline Regional Development Commission (WMSRDC) is implementing this project

Grand Valley State University Annis Water Resources Institute (GVSU AWRI) and a private contractor will perform the monitoring activities

Environmental Benefits

Knowledge of environmental impacts of restoration projects

Economic Benefits

Knowledge of ecosystem services and ecological value of restoration projects

Community Benefits

Increase knowledge of fisheries and water quality

Background of the Area of Concern (AOC)



Within the lower Muskegon River watershed lies the **Muskegon Lake AOC**, a drowned river mouth lake that flows into Lake Michigan at a shoreline that is part of the world's largest assemblage of freshwater sand dunes. Muskegon Lake was designated an AOC in 1985 due to ecological problems caused by industrial discharges, shoreline alterations and the filling of open water and coastal wetlands.

Since 1992, community groups, governmental and nongovernmental organizations have worked collaboratively to remediate contaminated sediments and to restore and protect fish and wildlife species and their habitats. Historic sawmill debris, foundry sand, and slag filled 798 acres of open water and emergent wetlands in the AOC. Nearly 25% of

Muskegon Lake's open water and shallow wetlands were filled and approximately 74% of the shoreline was hardened with wood pilings, sheet metal or concrete. This resulted in the loss and degradation of shallow water benthic (lake bottom) communities, isolation and fragmentation of coastal wetlands, and the associated degradation of water quality and fish and wildlife populations.

With completion of this and several other projects in development, the U.S. Environmental Protection Agency (U.S. EPA) now expects to remove Muskegon Lake from the list of Great Lakes "toxic hotspots."

Background of Project Sites

Seven project sites received intense ecological monitoring to assess the changes resulting from prior or current restoration. Monitoring took place at seven project sites. The Grand Trunk project restored shoreline and wetlands at the Grand Trunk launch ramp on the southern shoreline of Muskegon Lake. The Amoco restoration site has an upcoming restoration project that will restore shoreline and open water habitat adjacent to the Muskegon Lakeshore trail. The Kirksey project naturalized shoreline and restored wetland habitat along the Kirksey Peninsula on the southern Muskegon Lake shoreline. Heritage Landing has one prior restoration site as well as circle landing which will receive restoration maintenance in the coming year or two. Veterans Memorial Park is an ongoing hydrologic reconnection project on the eastern side of Muskegon Lake. Bear Creek hydrologic reconnection and wetland restoration project took place at Bear Creek in the northeast of Muskegon Lake. Additional follow-up monitoring may take place at current project sites once construction has been completed.

Project Progress

Ecological monitoring has concluded. A monitoring report will be finished in 2020 and data from the monitoring efforts will be published on the Great Lakes Commission Habitat Restoration Database webpage.

Funding and Partners

Close to \$100,000 is available for this project through the GLRI, a regional program that is supporting implementation of a comprehensive restoration plan for the Great Lakes, including cleaning up AOCs. The project funding comes from NOAA through a Regional Partnership with GLC. The project is being managed locally by WMSRDC.

For More Information

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