



## Muskegon Lake AOC Habitat Restoration

The **Heritage Landing** restoration Project will improve habitat for fish and wildlife by repairing shoreline habitat that was damaged by strong storm events during record high Lake Michigan water levels.

### Project Highlights

Repair previous restoration efforts damaged by strong storm events

Add natural rock along shoreline to an elevation of 582 ft. to prevent ice flows from impacting the shoreline

Regrade slope to prevent future erosion

Completes one of the final habitat restoration management actions needed to remove Muskegon Lake from the list of Great Lakes Areas of Concern

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)



Project location along southern shoreline of Muskegon Lake

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

The Grand Valley State University Annis Water Resources Institute (GVSU AWRI) is monitoring the impact of restoration on the aquatic ecosystem

#### Environmental Benefits

Restore natural shoreline and protect it from future erosion

#### Economic Benefits

Heritage Landing is a focal point for local events and attracts boating and fishing enthusiasts

#### Community Benefits

Improve fishing, shoreline safety, and park appearance

## Background of the Area of Concern (AOC)



Heritage Landing project site (Photo by Jill Estrada/GLC)

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.

This project, along with others already under development, will complete all of the management actions needed for the U.S. Environmental Protection Agency (U.S. EPA) to remove Muskegon Lake from the list of Great Lakes "toxic hotspots."

## History of Heritage Landing

Heritage Landing is located along the southern coastline of Muskegon Lake. The facility was created on a former industrial scrap yard in the 1980s. In 2009, a NOAA American Recovery and Reinvestment Act restoration project provided funding to restore and soften 615 feet of shoreline, remove 0.7 acres of fill including 13,797 metric tons of unnatural foundry fill material. This project restored 0.1 acres of open water wetland habitat and 0.3 acres of emergent wetland habitat. Due to extreme storm events that occurred on Lake Michigan and Muskegon Lake, during a record high water period, this site began to experience erosion during the winter and spring of 2017.

## Project Progress

The Heritage Landing restoration project's engineering and design phase was completed in fall 2019, followed by the completion of major construction activities. Final, native vegetation plantings will be completed in spring 2020.

## Funding and Partners

Approximately \$126,000 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 and ecological monitoring is being performed by the GVSU AWRI.

### For More Information

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**WMSRDC**  
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