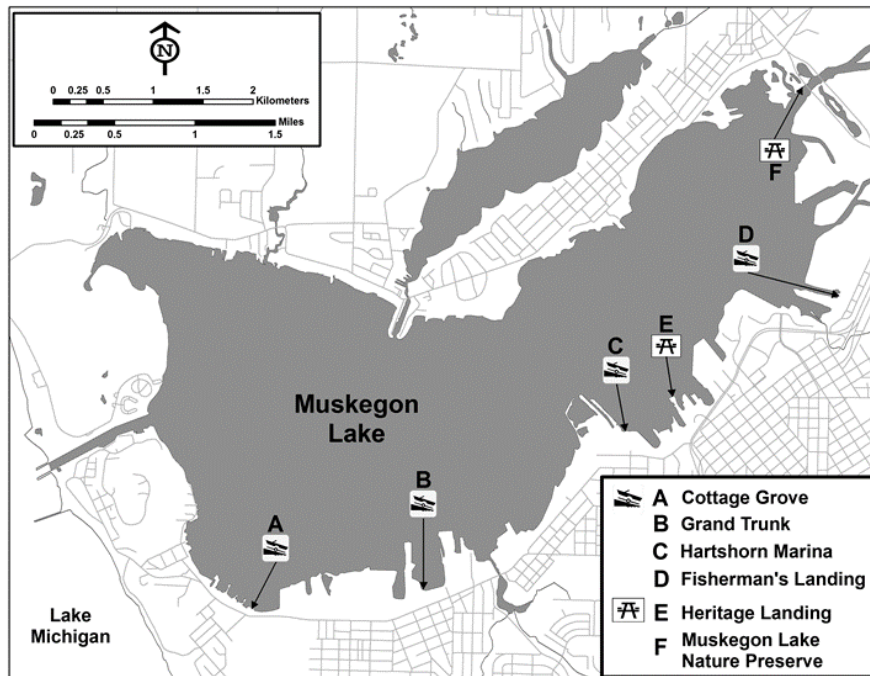


Muskegon Lake AOC Habitat Restoration

A Grand Valley State University socio-economic study re-examines the economic impact that coastal restoration is having on the surrounding community and property values within the Muskegon Lake Area of Concern (AOC)

Study results

- Found an estimated 485,000 additional annual visits to the lake following restoration, an 11% increase
- People who visited the lake before restoration now visit 2-4 times more per season
- The total value of increased home values due to shoreline restoration was estimated at \$7.9 million
- The total value of additional recreation following restoration was estimated at \$27.9 million annually
- The additional recreational spending represents an estimated 4% increase annually for Muskegon County



Study travel cost survey locations on Muskegon Lake

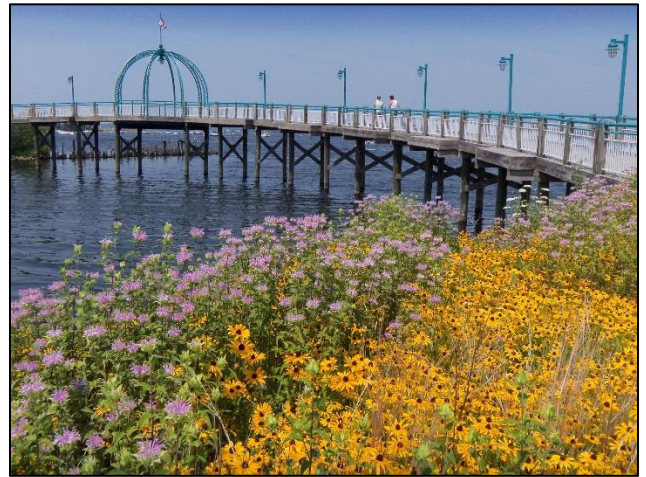
Background of the Area of Concern (AOC)

In the lower Muskegon River watershed lies Muskegon Lake, a drowned river mouth lake that flows into Lake Michigan along a shoreline that contains the world's largest grouping of freshwater sand dunes. Muskegon Lake was recognized as an AOC by the Great Lakes Water Quality Agreement, which officially established 43 of the most polluted locations in the United States and Canada as Areas of Concern. AOCs are defined as "geographic areas designated by the U.S. Environmental Protection Agency and Environment and Climate Change Canada where significant impairment of beneficial uses has occurred as a result of human activities at the local level." Muskegon Lake was designated an AOC in 1987 due to ecological problems caused by past industrial discharges, shoreline alterations, and the filling of open water

and coastal wetlands. Nearly 25% of Muskegon Lake's open water and shallow wetlands were filled and more than 70% of the shoreline was hardened with wood pilings, sheet metal or concrete. This resulted in the loss and degradation of shallow water lake bottom communities, isolation and fragmentation of coastal wetlands, and the associated degradation of water quality and fish and wildlife populations. 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 in Muskegon Lake. With completion of numerous recent projects, the U.S. Environmental Protection Agency expects to remove Muskegon Lake from the list of AOCs as early as 2020. Detailed information on restoration activities in the AOC funded by the NOAA-Great Lakes Commission AOC Habitat Restoration Regional Partnership can be found at www.glc.org/work/aocs/muskegon. Field reports and raw data associated with monitoring at the Muskegon Lake project locations can be found at the Commission's Habitat Restoration Database: www.glc.org/work/habitatdb.

Background of Study

In 2011, Dr. Paul Isely of Michigan's Grand Valley State University published a study analyzing the housing market surrounding restoration sites along the southern shoreline of Muskegon Lake. The study looked at changes in housing prices located within a designated distance from restoration sites and also surveyed the recreational use of those sites by the public. The original study predicted \$11.9 million in additional housing value as a result of the improved shoreline features and an additional \$2.8 million annually in recreation value. The housing value represented a 6:1 return on the investment of restoration funding. The current study replicated this work following significant restoration activities and used two socio-economic methods to examine travel activity and Muskegon housing markets.



Heritage Landing post-restoration; a designated restoration site in the study

Project Activity and Results

This project was conducted using data gathered between 2018 and 2019 to validate the predicted results from the 2011 study. This study found the total value of shoreline improvements based on homes sale prices to be estimated at \$7.9 million and the value of additional recreational benefits estimated at \$27.9 million annually. The increase in recreation values is due to additional restoration activity across the lake and a larger increase in numbers of visitors than forecast in 2011. The final detailed report can be found at www.glc.org/work/aocs/muskegon.

Funding and Partners

Approximately \$35,000 was made available for this project through the Great Lakes Restoration Initiative, a regional program that is supporting implementation of a comprehensive restoration plan for the Great Lakes, including cleaning up AOCs. The final report was prepared by Grand Valley State University under award NA16NMF4630341 from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, through a Regional Partnership with the Great Lakes Commission. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the NOAA Restoration Center.

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