

# Supporting Fish Habitat in Saginaw Bay

## A Pre-restoration Assessment of Fish Spawning Reefs



Jen Read, Michigan Sea Grant



Brandon Schroeder, Michigan Sea Grant



Dan O'Keefe, Michigan Sea Grant

A collaborative team will assess the potential for developing fish spawning habitat (reefs) in inner Saginaw Bay. The team will target spawning habitat at two existing reef sites and two potential reef restoration sites.

Project leaders will use the results of this project to inform the design and implementation of future fish habitat restoration efforts in Saginaw Bay and throughout the Great Lakes. Project leaders also anticipate that information from this project will inform how to increase and sustain native fish populations in Saginaw Bay.

### Project Objectives:

- Determine the suitability of specific sites for reefs by assessing the conditions of the lake bottom and water quality, as well as identifying potential fish egg predators (e.g., round goby).
- Evaluate how fish use the sites during critical spawning periods.
- Assess key characteristics of walleye and lake whitefish populations.

### Fish Spawning

Historically, inner Saginaw Bay contained rock reefs that provided critical spawning habitat for many native fish species. During spring

spawning season, the rock reefs were used by many species, including walleye, smallmouth bass and suckers. Later in the year, the rock reefs provided habitat for fall spawning species, including lake whitefish, cisco and lake trout.

Reef habitat in the inner Bay was largely lost due to sedimentation resulting from land use changes, including logging and agriculture. The loss of this reef habitat contributed to the collapse of Saginaw Bay's walleye fishery and negatively impacted local populations of lake whitefish, lake trout, burbot and other species.

### Rocky Reefs - Changes for the Better

In the past 20 years, the Saginaw Bay ecosystem has experienced improved water quality and clarity, and a return to a more natural assemblage of fish species. Although rock reef habitat in inner Saginaw Bay remains degraded, recent research has shown that there is the potential to improve nearshore habitats. A number of areas in the inner Bay may be suitable for restored rock reef habitats, and this project aims to examine this idea in detail. Ultimately, constructing new fish spawning reefs may lead to greater stability of fish species native to Saginaw Bay.

### Learn More

See the Project Website:  
[www.miseagrant.umich.edu/saginawbayreefstudy](http://www.miseagrant.umich.edu/saginawbayreefstudy)

### Key Contacts:

**Dr. Tomas Höök**  
Department of Forestry and Natural Resources  
Purdue University  
[thook@purdue.edu](mailto:thook@purdue.edu)

**Bretton Joldersma**  
Office of the Great Lakes  
Michigan Department of Environmental Quality  
[joldersmab@michigan.gov](mailto:joldersmab@michigan.gov)

**Brandon Schroeder**  
Michigan Sea Grant  
MSU Extension  
[schroe45@msu.edu](mailto:schroe45@msu.edu)



**Partners and Support:** The Bay County Department of Environmental Affairs and Community Development; Illinois-Indiana Sea Grant; LimnoTech; Michigan Department of Environmental Quality (MDEQ), the MDEQ Office of the Great Lakes and the MDEQ Remediation and Redevelopment Division; Michigan Department of Natural Resources (MDNR) Fisheries Division; Michigan Sea Grant (Michigan State University

Extension, University of Michigan); Purdue University, and U.S. Geological Survey Great Lakes Science Center.

The U.S. Fish and Wildlife Service, Great Lakes Fish and Wildlife Restoration Act is supporting this two-year project, providing \$232,732 in grant funds, project number F14AP00521.