

Supporting Fish Habitat in Saginaw Bay

Restoring Fish Spawning Reef



Historically, Great Lakes rock reefs formed as glacial deposits and provided important spawning habitat for many native fish species. This critical spawning habitat was largely lost within Saginaw Bay due to increased sedimentation resulting from land use changes including logging and agriculture. The loss of inner Saginaw Bay's rock reefs contributed to the 1940s collapse of Saginaw Bay's Walleye fishery and also impacted local populations of Lake Whitefish, Lake Trout, Burbot, and other species. However, recent environmental assessments indicate that conditions and sedimentation rates within inner Saginaw Bay have improved and may now be able to support reef restoration.

With this finding, federal, state, and local partners are working to construct and restore rock reef habitat at one location within the inner bay, the Corey reef. This project will mimic naturally-formed reefs by placing approximately 10,000 cubic yards of rock material at the restoration site. The rock material will range in size from 4-8 inches in diameter and will be placed on the lakebed by barge and crane to create a rock pile, up to 3 acres, rising 2-4 feet from the lake bottom.

The height of the rock pile may vary to prevent navigational hazards.

The restored reef will create important spawning and juvenile habitat for many native fish species including those that spawn in the spring (Walleye, Smallmouth Bass, Suckers) or fall (Lake Whitefish, Cisco, Lake Trout, Burbot). During spawning, gaps formed between the rocks will create a sheltered environment where fish eggs can incubate and be protected from predators. As the eggs hatch, the warm and highly productive waters of the inner Bay will provide excellent nursery habitat and abundant food sources for larval and young fish, encouraging fast growth and increasing survival potential.

This project will also help to diversify spawning habitat and facilitate a more resilient and diverse fish population. Currently, Saginaw Bay's Walleye fishery is mainly sustained by river-based spawning within one or two rivers. This leaves the fishery vulnerable to events that might harm spawning success within these rivers. Restoring the bay's reefs will help to address this vulnerability by diversifying

the type and location of spawning habitat.

Construction of the reef will begin in summer of 2019 and be completed by fall.

Key Contacts:

Bretton Joldersma: *Office of the Great Lakes, Michigan Department of Natural Resources,*
joldersmab@michigan.gov

Michael Jury: *Remediation and Redevelopment Division, Saginaw Bay District Office, Michigan Department of Environmental Quality,*
jurym1@michigan.gov

Brandon Schroeder: *MSU Extension, Michigan Sea Grant,*
schroe45@msu.edu

Meaghan Gass: *MSU Extension, Michigan Sea Grant,*
gassmeag@msu.edu

michiganseagrant.org/saginawbayreefstudy



Partners and Support: The Bay County Department of Environmental Affairs and Community Development; Illinois-Indiana Sea Grant; LimnoTech; Michigan Department of Environmental Quality (MDEQ) Remediation and Redevelopment Division; Michigan Department of Natural Resources (MDNR) Fisheries Division and MDNR Office of the Great Lakes; Michigan Sea Grant (Michigan State University Extension, University of Michigan); Purdue University; and U.S. Geological Survey Great Lakes Science Center.

Funding for this project was provided through a \$980,000 U.S. Environmental Protection Agency, Great Lakes Restoration Initiative (GLRI) grant and a \$25,000 Saginaw Bay Watershed Initiative Network grant. Construction of the Corey and Saginaw River Mouth reefs is planned for the 2019 construction season and will be completed by the fall of 2019.