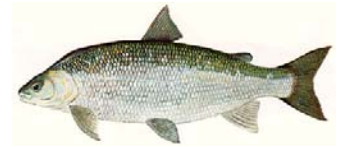


# Lake Whitefish and the Ecological Recovery of the Detroit River

The Detroit River International Wildlife Refuge

Huron-Erie Corridor



Lake whitefish, currently the number one commercial fish in the Great Lakes and a key indicator of ecosystem health, are once again reproducing in the Detroit River. For the first time since 1916 scientists have documented the presence of spawning lake whitefish and fertilized whitefish eggs in the river.

## Why is this important?

The Detroit River was well known for its whitefish fishery in the 1800s and early 1900s, but habitat loss and degradation, pollution, and other factors contributed to the loss of this important fishery. The discovery of spawning whitefish in the Detroit River provides further evidence of progress in the ecological recovery of North America's only International Wildlife Refuge and International Heritage River System. It also gives scientists the opportunity to expand research that will aid fisheries managers in future efforts to restore lake whitefish and other native fish populations and habitat in the Detroit River.



Sampling results - scientists net first spawning whitefish (Photo by USFWS)

*“The return of lake whitefish to the Detroit River is partially the result of 40 years of pollution prevention and control activities in the Detroit/Windsor metropolitan areas. Scientists are continuing research on this unique river ecosystem to learn more about the habitat needs of lake whitefish and other native fish that may potentially lead to the re-establishment of this heritage fishery.”* Dr. Leon Carl, Center Director, U.S. Geological Survey, Great Lakes Science Center.

*“This whitefish recovery is helping transform the Detroit River into an internationally recognized wildlife refuge that is providing an exceptional ecotourism experience to residents of Southeast Michigan and Southwest Ontario.”*

Dr. John Hartig, Refuge Manager, Detroit River International Wildlife Refuge.

## Changes in the River

To increase shipping traffic in the Detroit River, the U.S. government began large-scale engineering works in 1907 to increase the size of the shipping channels. Construction of the Livingstone channel resulted in removal of most of the historic whitefish spawning areas in the river mouth and created changes in river hydrology. The loss of these spawning grounds was a major contributing factor in the collapse of the whitefish fishery in the Detroit River in the early 1900's. Pollution, loss of wetland habitat, overfishing, and invasive species are other factors that caused ecological changes in the Detroit River and the entire Huron-Erie Corridor (HEC).



Grassy Island Pond-Fishery, Detroit River (from Milner 1874, Plate XXXVII). Whitefish captured in seines on fall spawning runs were maintained in the river in net pens for live sale throughout the winter.



The Livingstone Cut under construction in the Detroit River, ca. 1910.



# Success Through Partnerships

*The Detroit River International Wildlife Refuge is getting national attention for its public-private partnerships for conservation, sustainability, and close-to-home outdoor recreation. The International Wildlife Refuge Alliance is a nonprofit organization whose mission is to support this first International Wildlife Refuge in North America by working through partnerships to protect, conserve, and manage the refuge's wildlife and habitats, and to create exceptional conservation, recreational, and educational experiences to develop the next generation of conservation stewards.*

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**Partners in Science:** The Huron-Erie Corridor (HEC) Initiative is a management-driven partnership formed to address critical research issues affecting fishery and aquatic resources in the HEC. Partners in this effort include Michigan and Ohio DNRs, Michigan Sea Grant, Department of Fisheries and Oceans, Canada, Ontario Ministry of Natural Resources University of Windsor, DTE Energy, Smith JJR, USGS, USFWS, and other stakeholders. Partners determine research strategies and direction as part of a steering committee formed to provide focus, establish collaborations, and pursue research funding opportunities using a consensus-based approach.

## Examples of Science Questions Developed Through the HEC Initiative

- *Is available spawning habitat limiting the reproduction of whitefish and other native fishes in the HEC?*
- *Can unsuitable spawning habitat be restored for use by native fishes?*
- *Can we improve spawning habitat without making it desirable for invasive species such as sea lamprey or round goby?*
- *Are invasive species preying on native fish larvae?*
- *Is transport of larval fish from spawning to nursery habitat (e.g. wetlands) disrupted in the HEC by changes in river flow?*



Scientists capture native walleye in the Detroit River. (Photo by USFWS)

## Detroit River International Wildlife Refuge

This Refuge is the only International Wildlife Refuge in North America. The refuge includes islands, coastal wetlands, marshes, shoals, and waterfront lands along 48 miles of Detroit River and Western Lake Erie shoreline. It is uniquely situated in the heart of a major metropolitan area. Detroit River International Wildlife Refuge is one of over 540 National Wildlife Refuges managed by the U.S. Fish and Wildlife Service within the Department of Interior.



The Trenton Channel (Photo by USGS)

## A Revitalized Detroit River

Much pollution prevention and cleanup has occurred as a result of the 1972 U.S. and Canada Great Lakes Water Quality Agreement and the 1972 Clean Water Act. In the past 34 years there has been a more than 98% reduction in oil discharges, a 95% reduction in phosphorus discharges from the Detroit Wastewater Treatment Plant (one of the largest in North America), a 70% decline in mercury contamination of fish, and an 83% decline in PCB contamination of herring gull eggs from Fighting Island in the Detroit River. **Pollution prevention and cleanup of the Detroit River by the U.S. and Canada, as well as scientific research, have contributed to the restoration of reproducing populations of peregrine falcons, lake sturgeon, and bald eagles, a greatly improved walleye fishery, and a potentially recovering whitefish population. This is great news for the Detroit River, the Refuge, and the Great Lakes!**



Detroit River Waterfront (Photo by USGS)

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