

# INTERNATIONAL SEA LAMPREY MANAGEMENT On the St. Marys River

## Everyone Wins... But Sea Lampreys!



THE ST. MARYS RIVER

PHOTO: DEPT. OF FISHERIES & OCEANS

### THE PROBLEM

*Today, the St. Marys River produces more parasitic Sea Lampreys than all Great Lakes tributaries combined.*

Sea lampreys attach to fish and feed on the fish's body fluids. Some fish survive a sea lamprey attack, but often with life-threatening wounds.

Prior to the mid-1970s, the St. Marys River had been an inhospitable place for sea lampreys to live and reproduce. Water quality and habitat improvements during the past couple of decades have turned the river into a producer of hundreds of thousands of sea lampreys annually. The river's tremendous size and flow volume prohibit effective sea lamprey control using conventional methods.

Sea lampreys produced in the St. Marys River migrate into Lake Huron and northern Lake Michigan. There, the adult sea lamprey population is nearly as large as it was 40 years ago—before sea lamprey control—when lake trout and whitefish stocks were decimated.

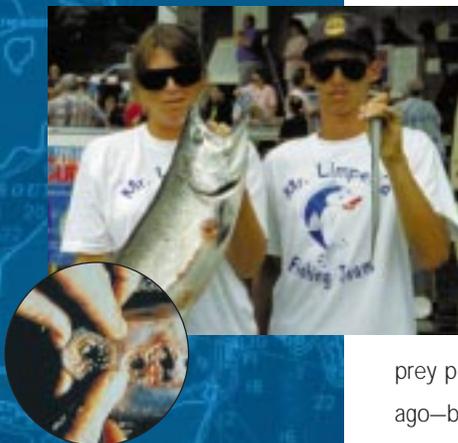
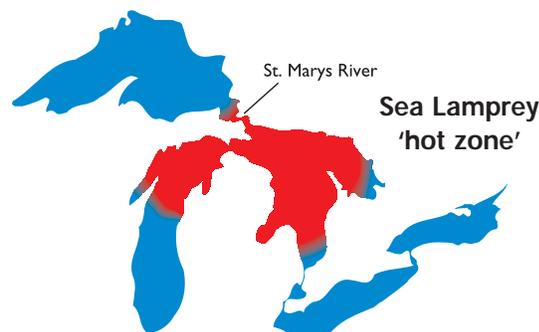
Sea lampreys attach to fish with a suction cup mouth and rasp through the fish's scales and skin with a sharp tongue. A sea lamprey will destroy up to 40 pounds of fish during the 18 months of its adult life in the lakes.

In Lake Huron and northern Lake Michigan, sea lampreys prey heavily on many fish species. More

fish are destroyed by sea lampreys than all other sources of mortality combined—including natural causes and sport, tribal, and commercial harvest.

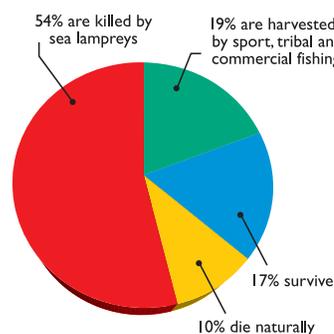
The problem is so severe that management agencies stopped stocking lake trout in northern Lake Huron pending sea lamprey control on the St. Marys River.

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### Fate of Northern Lake Huron Lake Trout

DATA: U.S. FISH & WILDLIFE SERVICE



Great Lakes Fishery Commission

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Department of Fisheries & Oceans Canada



U.S. Geological Survey, Biological Resources Division

# THE SOLUTION

The Great Lakes Fishery Commission and its partners have developed an integrated, cost-effective strategy to assess and control sea lampreys on the St. Marys River:

## ASSESSMENT

A deepwater electrofishing device with a vacuum unit sucks sea lamprey larvae from the bottom of the St. Marys River and allows scientists to determine density and distribution of the larvae. With the help of global positioning and mapping technology, larval "hot spots" are recorded and targeted for control.

## CONTROL METHODS

### 1. GRANULAR BAYLUSCIDE: CONTROLLING SEA LAMPREY LARVAE.

Using helicopters and global positioning technology, granular Bayluscide—a lampricide particularly suited for the St. Marys River—is applied to specific "hot spots" to kill sea lamprey larvae on the bottom of the river.

### 2. TRAPPING: REMOVING SPAWNERS.

The Great Lakes Fishery Commission entered into partnerships with Great Lakes Power and the U.S. Army Corps of Engineers to construct sea lamprey traps on the St. Marys River. Traps from around the Great Lakes remove spawning sea lampreys and supply males for the sterilization program.

### 3. STERILE-MALE-RELEASE-TECHNIQUE: SUPPRESSING LONG-TERM SPAWNING SUCCESS.

Male sea lampreys are trapped, sterilized, and released into the St. Marys River. The sterilized males compete as aggressively as normal males, wasting the spawning potential of female sea lampreys. The sterile-male-release-technique reduces sea lamprey spawning success over the long-term.

PHOTOS: U.S. FISH AND WILDLIFE SERVICE, GREAT LAKES FISHERY COMMISSION



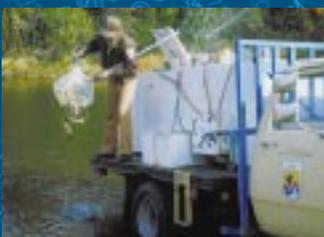
Scientists determine larval "hot spots"



Granular Bayluscide (above) is applied to larval "hot spots" by helicopter

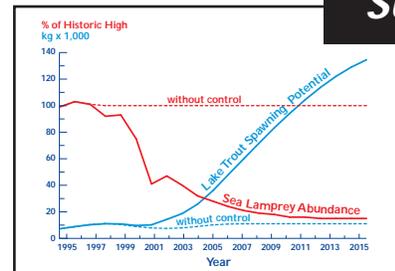


Sea lamprey trap



Release of sterile males

## SUCCESS!



**Ecosystem Benefits to Lake Huron with Sea Lamprey Control on the St. Marys River**

The health of the Great Lakes fishery depends on sea lamprey control. Sea lamprey control on the St. Marys River will reduce parasitic sea lampreys in Lake Huron and northern Lake Michigan by 85%—a remarkable success!

Spawning potential of lake trout and other species is expected to rise dramatically. Furthermore, Lake Huron is a biological crossroads that links the fish diversity stored in Lake Superior to the other lakes. Sea lamprey control on the St. Marys River is vital for the recovery of valuable, rare, native species.

With control, agencies will again stock lake trout in the affected areas. With fewer sea lampreys, more fish will survive to reproduce or to be harvested. Sea lamprey control on the St. Marys River sets the stage to pass on more quality fish and fishing opportunities to future generations.

## Great Lakes Fishery Commission

The Great Lakes Fishery Commission, in cooperation with partner agencies, carries out this international initiative. Funds have been provided by the U.S. and Canadian federal governments and by the State of Michigan.



U.S. Department of State



U.S. Fish & Wildlife Service



Department of Fisheries & Oceans Canada



U.S. Geological Survey, Biological Resources Division



Michigan Department of Natural Resources



Ontario Ministry of Natural Resources



Chippewa-Ottawa Treaty Fishery Management Authority



U.S. Army Corps of Engineers



Great Lakes Power

PHOTOS: DEPT. OF FISHERIES & OCEANS, U.S. FISH & WILDLIFE SERVICE, U.S. GEOLOGICAL SURVEY

