St. Clair – Detroit River

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I would like to start out by acknowledging that most of this presentation was prepared by my colleagues Rose Ellison with the U.S. Environmental Protection Agency and Ted Briggs and Stew Thornley with the Ontario Ministry of the Environment.

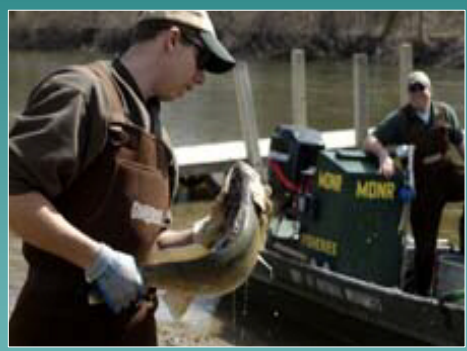
St. Clair – Detroit corridor

The St Clair-Detroit corridor connects the southern end of Lake Huron with the northwestern side of Lake Erie. It consists of three distinct parts. The St. Clair River flows south from Lake Huron about 40 miles where it flows through one of the world's largest freshwater deltas into Lake St. Clair, a shallow 450 square mile lake. The Detroit River drains the southwest portion of Lake St. Clair. It travels southwest and then south for 32 miles before entering Lake Erie.

Contaminated sediments have historically been a cause of impairment to the St. Clair – Detroit Corridor. Over the past few years several large sediment remediation projects have been completed to address sources of contamination in sediments. Beginning in 2003, Dow Chemical Canada initiated clean up of sediments contaminated with mercury and chlorinated organic compounds in the St. Clair River Area of Concern. They removed a total of 23,000 cubic yards from a site that had been the highest priority for cleanup in the St. Clair River.

In 2002, a previously unknown source of PCB contamination to Lake St. Clair was discovered in canals along the west side of Lake St. Clair. By 2003, the US Environmental Protection Agency had removed 24,000 tons of contaminated sediment from the Revere and Lange canals. In 2002 – 2003, the Detroit Water and Sewerage Department removed 87,000 cubic yards of contaminated material from Conner Creek in the Detroit River Area of Concern. And in 2005, the US Environmental Protection Agency and Michigan Department of Environmental Quality completed the first sediment cleanup under the Great Lakes Legacy Act, removing 115,000 cubic yards of sediments contaminated with PCBs, heavy metals, and oil/grease from the Black Lagoon in the Trenton Channel of the Detroit River. Sediment investigations to support future action are currently underway in the St. Clair River downstream from the Dow cleanup site, the Clinton River Area of Concern and in the Trenton Channel of the Detroit River.

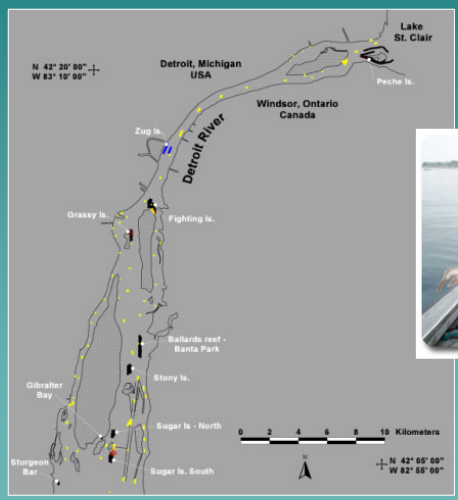
Responses to contaminants in fish



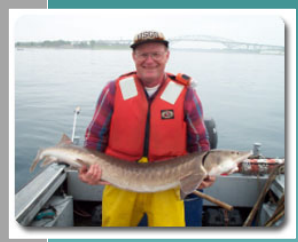
One of the main objectives for undertaking sediment cleanup actions in the Corridor is to reduce contaminant body burden in fish, particularly PCBs and mercury. Government agencies are continually working together to improve Corridor monitoring to assess the response in fish to sediment management measures and other controls.

For example, in the past the US and Canada have had different methods and different schedules for conducting fish contaminant monitoring in the corridor. In 2006, fish are being collected and analyzed throughout the entire corridor through a binational cooperative effort between provincial and state agencies and the Great Lakes Institute for Environmental Research.

Responses for protecting Corridor aquatic habitat



Historic spawning sites in the Detroit River, USGS



Dr. Bruce Manny, USGS

There have been many cooperative preservation and reservation efforts in the Corridor. The Detroit River International Wildlife Refuge acquired large areas of submerged aquatic macrophyte beds. Artificial sturgeon spawning reefs have been created to promote sturgeon recovery. Lake whitefish were recently discovered spawning in the Detroit River for the first time since the early 1900's.

Many of these actions have been driven by management initiatives such as the Remedial Action Plans for the St. Clair and Detroit Rivers under the Great Lakes Water Quality Agreement; the U.S. Army Corps of Engineers' Comprehensive Management Plan for Lake St. Clair and the St. Clair River; the Lake St. Clair Canadian Watershed Technical Report; and the Huron-Erie Corridor Initiative.

Responses to aquatic invasive species

Volunteer community involvement in controlling the spread of purple loosestrife, Ontario.

Aquatic invasive species have created significant problems in this region. Zebra mussels were first discovered within the Great Lakes in Lake St. Clair. Round goby were first sighted in the St. Clair River.

Efforts at all levels of government are underway to prevent and control the spread of invasive species in the Corridor. State and provincial programs continue to raise awareness through actions such as: distributing educational materials, coordinating volunteer monitoring programs, implementing biological controls, posting warning signs at boat launches, and hosting educational workshops. Michigan and Ontario have new regulatory requirements for the sale and trade of plants and animals. The 2005 U.S. Comprehensive Management Plan for Lake St. Clair and the St. Clair River calls for specific actions to address aquatic invasive species, and the Canadian Lake St. Clair Coordination Council is developing recommendations for Canadian waters.

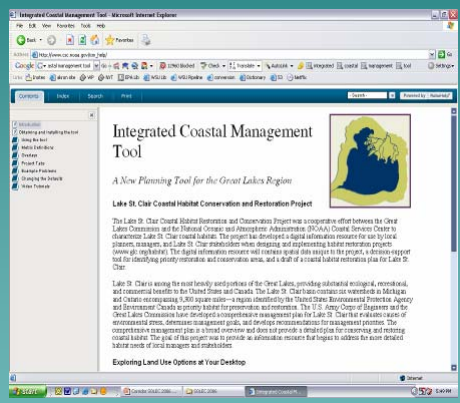
There has been a lot of activity in protecting and expanding the remaining coastal zone habitat in the Corridor. Since 1990 approximately twenty two hundred acres of various habitats have been protected or restored in the St. Clair River Area of Concern. Since 2001, both Fighting Island and Grassy Island in the Detroit River have been the subject of remedial cleanup efforts. To date, forty three hundred acres of wetlands have been donated to Detroit River International Wildlife Refuge. And there have been over seventeen soft shoreline-engineering projects implemented along both sides of the Detroit River.

Responses for improvement to human health

Illicit Discharge Elimination Program, Macomb County, MI.

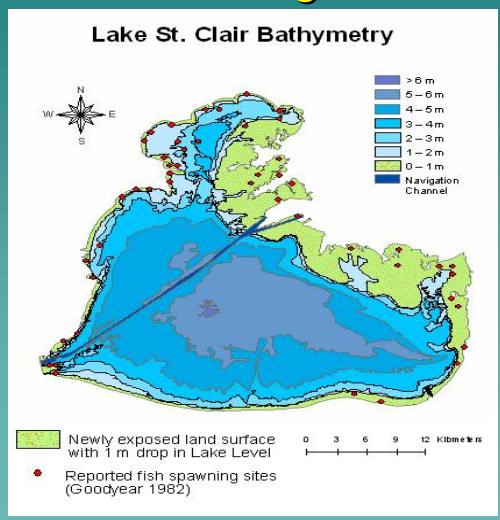
To protect human health, there have been major investments to control sewage and storm water discharges into Corridor waters. The Detroit Water and Sewerage Department is investing over one billion dollars to control combined sewer overflows. The Windsor Wastewater Treatment Plant is completing a one hundred ten million dollar upgrade. Many communities on both sides of the upper portion of the Corridor have been undertaking massive sewer separation projects. And in 2005 – 2006, two grants were awarded for real-time water quality monitoring of the Corridor to protect drinking water intakes.

Responses for improvement in land use



While development and growth continue to put serious stress on the Corridor, there are many land-use planning tools and techniques available to assist local communities. For example, several Conservation Authorities in Ontario have conservation strategies in place and are implementing projects to achieve them. In the U.S., the National Oceanic and Atmospheric Administration and the Great Lakes Commission developed a coastal management decision support tool to enable local land use planners to assess the impact of development in their communities. And a number of local communities have repeatedly taken steps to acquire and protect open spaces.

Responses to anticipate climate change



HEC Final Report – Mackey *et al.* 2006

Despite general improvement in contaminant trends, we cannot yet accurately predict the response of the connecting channels and their watersheds to climate change, particularly the impact of contaminant loadings to the system in the event of permanent water level changes.

In order to anticipate system changes for future management decisions, government agencies have been working cooperatively on projects like a hydrodynamic model for the Corridor that will forecast changes in flow patterns and support long-term research on aquatic habitats, fishery research and near-shore movement of sediments and pathogens. The Great Lakes Fishery Commission, under the U.S. Fish and Wildlife Restoration Act, has sponsored recent research on changing Lakes levels and the effects of climate change on the Corridor.

The St. Clair-Detroit Corridor ecosystem will continue to present opportunities and challenges. We've identified many needs. We need continued research and monitoring of sediments to support future cleanups and to monitor the effectiveness of cleanup efforts. We need coordinated fish contaminant monitoring to protect human health and monitor ecosystem health. Hydrologic research is needed to understand how physical changes in the Corridor affect native aquatic habitat and species. We need a better understanding of the existing habitat in the Corridor to develop a plan for the improvement of the coastal zones. Funding for actions like eliminating combined sewer overflow and illicit discharges has been greatly reduced, requiring the need to identify new sources of support. And further research is needed to identify and quantify non-point source and out-of- basin loadings to help focus Corridor contaminant-reduction efforts. Finally, management agencies need to continue collaborating on monitoring and governance of the Corridor to optimize existing efforts.

These issues will be the topic of more in-depth discussion at the St. Clair River-Lake St. Clair-Detroit River ecosystem breakout session later this afternoon.