



# STATE OF THE STRAIT MONITORING FOR SOUND MANAGEMENT



## A BINATIONAL CONFERENCE ON THE DETROIT RIVER ECOSYSTEM

Convened December 2004 by Great Lakes Institute for Environmental Research, University of Windsor, The Greater Detroit American Heritage River Initiative of Metropolitan Affairs Coalition, The Detroit River Canadian Cleanup, The Detroit River International Wildlife Refuge, The Detroit Water and Sewerage Department, and other organizations.

**Cover photos:** photos left and center (upper and lower): Recreational fishing in the Huron-Erie Corridor (lower center photo by Kurt Byers, Michigan Sea Grant Extension, courtesy of United States Environmental Protection Agency, Great Lakes National Program Office; other photos courtesy of OMNR); upper right: Scientist sampling water, benthic invertebrates and sediment in Lake Erie (photo courtesy of Environment Canada and University of Windsor); lower right: Longear sunfish (*Lepomis megalotis*) (photo courtesy of Nicolas Lapointe)

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2004 Conference Proceedings

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Based on a binational conference convened by  
The Great Lakes Institute for Environmental Research, University of Windsor, Greater  
Detroit American Heritage River Initiative of Metropolitan Affairs Coalition Detroit  
River Canadian Cleanup, Detroit River International Wildlife Refuge, Detroit Water  
and Sewerage Department, and other organizations.

Suggested citation: Eedy, R., J. Hartig, C. Bristol, M. Coulter, T. Mabee and J.  
Ciborowski eds. (2005). *State of the Strait: Monitoring for Sound Management*. Great Lakes  
Institute for Environmental Research, Occasional Publication No. 4, University of  
Windsor, Windsor, Ontario.

## 6.5. FISH AND FISHERIES OF THE DETROIT RIVER

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### Introduction

The Ontario Ministry of Natural Resources (OMNR) and Michigan Department of Natural Resources (MDNR) jointly manage and monitor the fisheries of the Detroit River. The Detroit River connects Lake St. Clair with the western basin of Lake Erie, two areas of intense angling activity as well as centres for aquatic biodiversity. These shallow, warm, and productive regions serve as important nursery grounds and migratory pathways for fish and other biota. The OMNR and MDNR, in partnership with municipal, provincial/state, and federal agencies and universities, undertake assessment and monitoring programs to evaluate the state of the fisheries resource. This abstract will review and describe programs from 1956 to the present. Where possible, recent results will be compared with historic data, and recommendations for future monitoring and assessment programs will be discussed.

### Methods

Fisheries assessment programs currently fall into two general areas: community assessment and sport fish monitoring (creel surveys and diary programs). Due to the high flows, intense development/channelisation, and high vessel traffic in the Detroit River, few fisheries sampling techniques employed in neighbouring Lake Erie and Lake St. Clair (e.g., gillnetting, trawls, and trap nets) are feasible in the Detroit River. Community assessment has therefore been heavily reliant on electrofishing surveys (1989, 2003, and 2004), with more limited trap netting and seining surveys occurring in the lower Detroit River in the early 1980s (Grosse Ile, Grassy Island, Belle Isle) and mid 1990s (Humbug Marsh).

Fish tagging and fish contaminant monitoring programs are conducted throughout the Huron–Erie Corridor. Intensive tagging of all prominent walleye stocks in western Lake Erie and Lake St. Clair, and the associated tag recovery throughout the basin, permits estimation of relative stock size and exploitation rate among the different stocks and fisheries (i.e., Detroit River versus Lake Erie). Tracking of contaminants in fishes occurs annually to support the production of the Ontario Ministry of the Environment *Guide to Eating Sport Fish in Ontario*. Monitored species include walleye (*Sander vitreus*), white bass (*Morone chrysops*), yellow perch (*Perca flavescens*), white perch (*Morone Americana*), freshwater drum (*Aplodinotus grunniens*), channel catfish (*Ictalurus punctatus*), rock bass (*Ambloplites rupestris*), and common carp (*Cyprinus carpio*).

## Results

Across all surveys, 52 species of fish, including four species of special concern (based on Ontario species-at risk criteria) have been captured in Detroit River fisheries assessment programs. Emerald shiners (*Notropis atherinoides*) and spottail shiners (*Notropis hudsonis*) were numerically abundant in all surveys (each species representing >11% of the total catch in each year), while yellow perch (22% in 2003) replaced alewife (*Alosa pseudoharengus*) (39% in 1989) as the single most numerically abundant species across surveys. Angler creel programs have been run by OMNR (1956–1960, 1974–1980, 1992 and 2002) and MDNR (1983–1985 and 2000–2004) at varying seasonal and spatial intensity. Thirty-four percent of Michigan’s Great Lakes sport fishing effort occurs in the Huron-Erie Corridor, although these waters comprise less than one percent of the area of Michigan’s Great Lakes jurisdiction. MDNR creel surveys of the Detroit River boat fishery suggests angler effort was similar in 1983–1984 and 2002–2003 (~660,000 angler hours) although catch-per-unit-effort (CPUE) declined markedly (1.30 fish/hr versus 0.42 fish/hr). Walleye are by far the most sought after species (78–93% of targeted effort between 2000 and 2003), followed by white bass and yellow perch.

Participants in the OMNR Sport Diary Program in 2003 reported the highest walleye CPUEs in the Detroit River (0.85 fish/hr) compared to western Lake Erie (0.55 fish/hr), the St. Clair River (0.41 fish/hr) or Lake St. Clair (0.32 fish/hr). Walleye CPUE is highest in July and August, and lower in the spring and fall. Walleye < 30 cm remain free of consumption advisories, while larger walleye and most sizes of other species monitored for contaminants bear varying degrees of recommended restriction. Recommended consumption limits in the Detroit River are comparable to those for neighbouring fisheries in the St. Clair River, Lake St. Clair, and the western basin of Lake Erie.

## Conclusions and Recommendations

Despite the unique challenges of sampling fishes in the Detroit River and competing demands for fish stock and fisheries assessment in adjacent waters of Lake Erie and Lake St. Clair, the combined OMNR/MDNR programs provide a reasonable picture of the state of this valuable natural resource. Gaps in program coverage—years without assessment and/or limited geographic coverage—are undesirable characteristics of Detroit River programs, but these gaps are present in most regional fisheries monitoring programs. Continued strategic planning to ensure that standardised methods are employed across years and between jurisdictions will ensure that resource managers have baseline information to support decision making.