

# Establishing Restoration Targets for Fish and Wildlife Habitat and Populations in the Detroit River AOC: The Species Specific Approach

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- Report to U.S. EPA, Water Division: “HABITAT PROTECTION AND REMEDIATION, DETROIT RIVER”

# Detroit River



# Detroit River AOC

- One of Five International RAPs
- Stage 1 Review: 1992
- Stage 2
- Delisting Criteria (Stage 3)
- Workshop on Delisting Criteria for the Detroit River Area of Concern
  - April 26-27, 2002

# Loss of Fish and Wildlife Habitat Delisting Guideline

- When the amount and quality of physical, chemical, and biological habitat required to meet fish and wildlife management goals has been achieved and protected
- Hartig and Mikol, 1992

# Detroit River Natural Resource Vision

1. List of Desired Fish, Wildlife, and Plant Species to be Sustained in Perpetuity
2. Estimates of the Quantity of Each Kind of Native Habitat Needed to Sustain the Species in List
3. Protect, Restore and Create Habitat to Achieve Requirements in 2, Above

# **BUI #14: Loss of Fish and Wildlife Habitat**

- Loss of productive fish and wildlife habitat in the Detroit River AOC has ceased, in accordance with local bylaws, ordinances and statutes;

## **BUI #14: Loss of Fish and Wildlife Habitat Cont'd**

- A net gain of restored and protected habitats has occurred in accordance with fish and wildlife management plans for the conservation and restoration of Detroit River habitat and is protected in perpetuity through local bylaws, ordinances and statutes; and

## **BUI #14: Loss of Fish and Wildlife Habitat Cont'd**

- The amount and quality of physical, chemical and biological habitat required to sustain all desirable fish, wildlife and plant species, established through a process such as the Natural Resources Vision, have been achieved and protected.

# Species Specific Habitat Restoration

- Provide enough habitat and habitat conditions required by the target species
- Restore the kind(s) of habitat in shortest supply to produce the greatest diversity and number of desired species.
- Restore each habitat used by every life-stage of desired species
- Example: Lake Sturgeon do not spawn on existing reputed, historic grounds

# Habitat Monitoring Activities and Data Needs

- Implement the Natural Resource Vision
- Determine the Current Quantity and Quality of Habitat Using the Same Reference Criteria for All Sites
- Assess the Quantity (hectares/acres and linear feet) of Soft-Engineered Shoreline and the Quality of Protected Habitat to Ensure that No Net Loss of Habitat has Occurred

## **BUI #3: Degraded fish and wildlife populations**

- This BUI cannot be delisted until the other seven primary BUIs have been delisted;
- “Environmental conditions support healthy, self-sustaining communities of most sensitive indicator species at levels of abundance that would be expected from the amount and quality of suitable physical, chemical and biological habitat present; and

# Primary BUIs for the Detroit River Area of Concern

- Restrictions on fish and wildlife consumption
- Degraded fish and wildlife populations
- Fish tumours and other deformities
- Bird or animal deformities or reproductive problems

# Primary BUIs for the Detroit River Area of Concern (Cont'd)

- Degradation of benthos
- Degradation of phytoplankton and zooplankton populations
- Loss of fish and wildlife habitat
- Exceedance of water quality objectives

## **BUI #3: Degraded fish and wildlife populations**

- Fish and wildlife bioassays confirm no significant toxicity from water column or sediment contaminants.” (Ad Hoc Delisting Committee criteria, 2001).

# Population Monitoring Activities and Data Needs

- Monitor the recovery (abundance) and contaminant body burden of indicator species such as amphibians, bald eagles, canvasback ducks (Fleming 1981), mink and snapping turtles; the abundance of larval fish (Hatcher and Nester 1983); the incidence of fish tumors (Baumann *et al.* 1991; Maccubbin and Ersing 1991); and the genetic diversity of brown bullheads (Murdoch and Hebert 1994) in the Detroit River, using published methods;

# Population Monitoring Activities and Data Needs, Cont'd

- Review progress (increasing abundance and decreasing contaminant body burdens) with reference to existing management plans for fish and wildlife populations in the Detroit River (Waybrant and Bryant 1990; MDNR 1994; OMNR 1990) and related rehabilitation guidance (Hartig 1993a and 1993b; Environment Canada and OMOE 1998);

# Population Monitoring Activities and Data Needs, Cont'd

- Measure the breeding success among indicator species that are most sensitive to contaminants; and
- Continuously discourage the proliferation of non-native species of fish and wildlife.

# Questions?

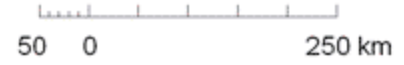
- To Request a copy of the **Workshop on Delisting Criteria for the Detroit River Area of Concern Proceedings**, e-mail Sandra George, Environment Canada at:
- [Sandra.E.George@ec.gc.ca](mailto:Sandra.E.George@ec.gc.ca)

# Great Lakes Drainage Basin - St. Lawrence River



## Legend

- Lake Huron Drainage Basin
- Lake Michigan Drainage Basin
- Lake Erie Drainage Basin
- Lake Superior Drainage Basin
- Lake Ontario Drainage Basin
- US/Canada Border
- Cities/Towns



# Detroit River

