

## Aquatic Species at Risk



# The Deepwater Sculpin (Great Lakes-Western St. Lawrence) a *Species at Risk* in Ontario

as designated under the federal *Species at Risk Act*

COSEWIC Status – SPECIAL CONCERN April 2006

SARA Status – SPECIAL CONCERN  
December 2007



*Myoxocephalus thompsonii*  
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Within the Great Lakes-Western St. Lawrence designatable unit, this species has been identified as Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It is listed under the federal *Species at Risk Act* (SARA) and was

afforded protection under the SARA as of December 2007. Additional protection is afforded through the federal *Fisheries Act*. Under the SARA, a management plan must be developed for this species.

### General Description

The Deepwater Sculpin (*Myoxocephalus thompsonii*) is a lake-dwelling sculpin of the family Cottidae. It has the following characteristics:

- Flat, long body averaging 51 to 76 mm in length; maximum length of 235 mm
- Eyes on top of the head
- Lacks true scales
- Large mouth with small teeth on both jaws, tongue, and roof of mouth
- Separated dorsal fins; the first has 7 to 10 spines, the second has 11 to 16 soft rays
- Large pectoral fins, reduced pelvic fins, long base on anal fin, square or truncated caudal fin
- Dark grey to brown in colour with dark saddles marking the back; light speckling on sides; pale belly
- Three dark bands on pectoral fins; lightly spotted pelvic fins; faintly blotchy dorsal and anal fins



## Distribution

The distribution of the Deepwater Sculpin is almost entirely limited to Canada with the exception of the American Great Lakes and a few inland lakes in Michigan and Minnesota. In Canada, its distribution is patchy and limited to cold, deep lakes in areas that were formerly glaciated or with proglacial lake connections. This includes the Gatineau region through the Laurentian Great Lakes, Manitoba and Saskatchewan and northward to Great Bear and Great Slave lakes in the Northwest Territories. An isolated population also exists in Waterton Lake, Alberta. Designated at risk (Special Concern) are the Great Lakes-Western St. Lawrence populations, which are found in only 10 lakes in eastern Canada. In Ontario, this fish occurs in lakes Nipigon, Ontario, Superior, Fairbank, Huron and Erie. In Lake Erie, only larvae (young-of-the-year) have been observed. In Quebec, it occurs in Lac des Iles and in Roddick, Thirty-one-Mile and Heney lakes. Populations in Heney Lake and Lac des Iles are in decline or may even no longer exist.

## Habitat and Life History

The Deepwater Sculpin is a bottom-dwelling fish that is found in cold (<5°C), well oxygenated, deep lakes. In the Great Lakes, adults usually live between 60 and 150 m in depth. For this reason, not much is known about the biology of this fish. The reproductive cycle is not well understood and the time of spawning is not known. Age of maturity has been estimated at three years for females and two for males. It appears that individuals from the Great Lakes, especially Lake Ontario, are generally larger compared to other

populations. The Deepwater Sculpin is also likely preyed upon by deepwater Lake Trout (*Salvelinus namaycush*).

## Diet

The diet of Deepwater Sculpin consists largely of *Mysis relicta*, *Diporeia* spp. and chironomid larvae. Zooplankton likely comprise the diet of the larval stage, which is pelagic (open water).

## Threats

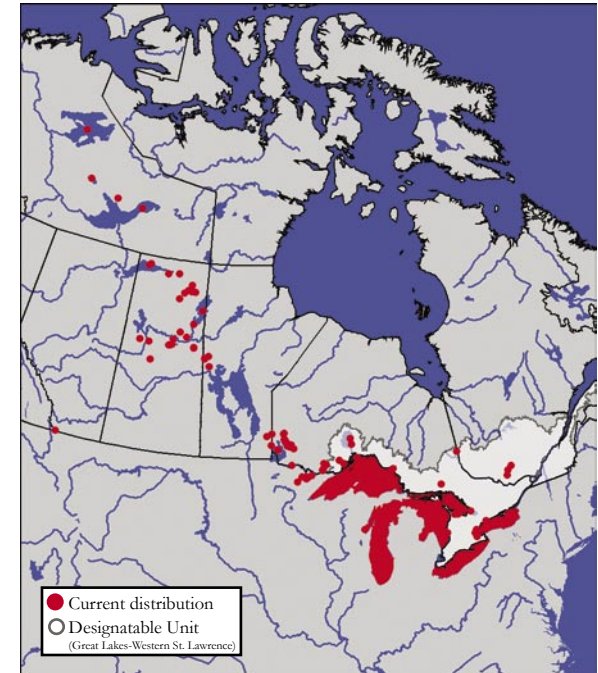
The Deepwater Sculpin is likely impacted by changes in zooplankton species composition and abundance. For example, a decline in *Diporeia* spp. in the lower Great Lakes may pose a threat to this fish since it is an important food source. In addition, the enrichment of lakes with nutrients (eutrophication) and the resulting low oxygen levels in bottom waters likely contributed to the decline of the Deepwater Sculpin in Heney Lake and Lac des Iles.

## Similar Species

The freshwater and marine forms of the Fourhorn Sculpin (*M. quadricornus*) are two closely related taxa that resemble the Deepwater Sculpin. However, they have four horn-like spines on top of the head, which are lacking in the Deepwater Sculpin.

Text Sources: COSEWIC Status Report 2006.

## DEEPWATER SCULPIN DISTRIBUTION



For more information, visit the SARA Registry Website at [www.SARAreistry.gc.ca](http://www.SARAreistry.gc.ca) and the Fisheries and Oceans Canada (DFO) Website noted below.

*Cette publication est également disponible en français.*

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[www.aquaticspeciesatrisk.gc.ca](http://www.aquaticspeciesatrisk.gc.ca)

Section 32 (1) of the *Species at Risk Act* (SARA) states that “no person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.”