

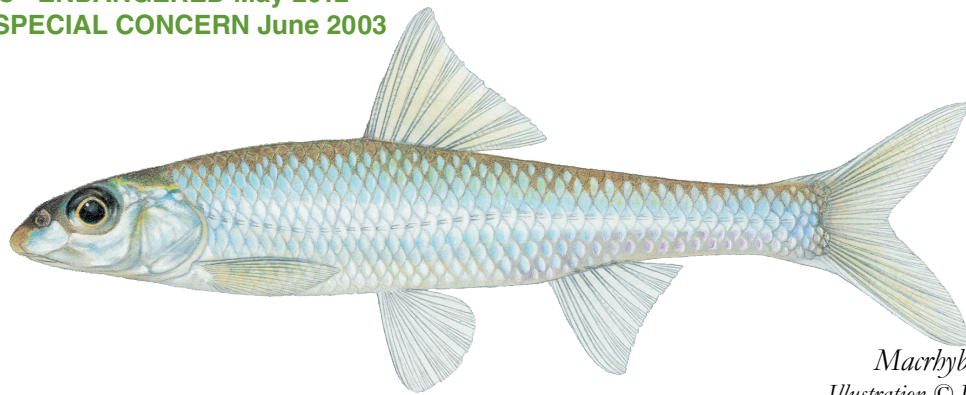
Aquatic Species at Risk



The **Silver Chub** (Great Lakes - Upper St. Lawrence populations)... a **Species at Risk** in Canada

COSEWIC Status - **ENDANGERED** May 2012

SARA Status - **SPECIAL CONCERN** June 2003



Macrhybopsis storeriana
Illustration © Joseph R. Tomelleri

The Silver Chub (Great Lakes-Upper St. Lawrence populations) has been reassessed from Special Concern to Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In 2012, COSEWIC split the populations into two separate units: 1) the Saskatchewan - Nelson River; and 2) the Great Lakes - Upper St. Lawrence. The Saskatchewan - Nelson River populations are not considered to be at risk.

Based on its previous assessment, the Silver Chub is currently listed under the federal *Species at Risk Act* as Special Concern. As a species of Special Concern, a management plan has been developed. The recent change in the COSEWIC assessment will require a new listing decision under the *Species at Risk Act*. If the species is legally upgraded to Endangered, a recovery strategy will be developed.

General description

The Silver Chub (*Macrhybopsis storeriana*) is a member of the Minnow family (Cyprinidae), and is the only species of the genus *Macrhybopsis* in Canada. It has the following characteristics:

- Body is stout and thick;
- Average length is 100 to 150 mm long; maximum length is 231 mm;
- Coloured pale grey-green on the back, becoming silver on the sides and silvery white below; a faint lateral band is usually present;
- Moderate-sized subterminal mouth, and a snout that projects beyond the mouth;
- Slender barbel, usually present at the end of the maxillary (corner of the upper jaw); eye diameter is relatively large; and
- Caudal fin is distinctly forked and lightly pigmented, except for lower three-to-four rays, which are white.



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Distribution

The range of the Silver Chub extends from Lake Winnipeg, east into the Great Lakes basin, and then south, largely through the Mississippi River system from Minnesota to the Gulf of Mexico. In Canada, the Great Lakes - Upper St. Lawrence populations are found in the Great Lakes basin, limited to Lake Erie and Lake St. Clair and the extreme southern portion of Lake Huron. The Saskatchewan-Nelson River populations (reassessed in 2012 as “Not at Risk”) are found in southern Lake Winnipeg and in the Assiniboine and Red river drainages of Manitoba, North and South Dakota and Minnesota.

Habitat and life history

In Ontario, Silver Chub is found in large lakes and connecting rivers at depths of 7.6–12 m, although they have been caught as deep as 20 m. Substrate is typically silt or sand, but the species is also sometimes associated with hard substrates, such as gravel, rubble, boulder or bedrock. It is not typically associated with aquatic vegetation. Reproduction of the Silver Chub is poorly understood. Individuals mature at age 1, and live to 3-to-4 years of age. One female can produce as many as 12,000 eggs. Silver Chub spawn in spring or early summer (May to July) at water temperatures between 19-23°C; however, there is uncertainty regarding where the species spawns and its spawning habitat requirements. In Lake Erie, the species has been observed to leave open water and move into nearshore areas in early spring, possibly to begin spawning.

Diet

The Silver Chub is a bottom feeder that uses taste and sight to locate its prey. An opportunistic forager, it feeds on aquatic insect larvae (particularly mayfly nymphs), *Daphnia* and other small crustaceans, and fish eggs. More recently, Silver Chub in Lake Erie have begun feeding on Zebra and Quagga mussels.

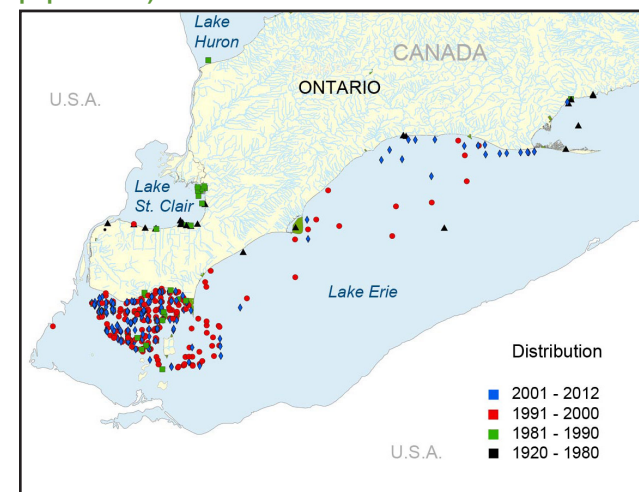
Threats

The Silver Chub was considered common in Lake Erie until the 1950s. Its rapid decline in the 1960s coincided with habitat degradation and eutrophication caused by urban and agricultural runoff. The effects included poor water quality, extensive algal blooms and depleted oxygen levels in the water. Effects on invertebrate populations reduced prey sources. Although some threats have decreased in recent years (e.g. nutrient loading in Lake Erie), many still exist. Recent threats include aquatic invasive species, baitfish harvesting and climate change. Recent studies also suggest that the population numbers have dropped substantially in the past decade, and the risk of extirpation (i.e. extinct in Canada) is high.

Similar species

Silver Chub is similar in appearance to the Spottail Shiner (*Notropis hudsonius*), the Gravel Chub (*Erimystax x-punctatus*) and the Hornyhead and River chubs (*Nocomis biguttatus* and *Nocomis micropogon*). Unlike the Spottail Shiner, the Silver Chub has barbels at the corners of the

Silver Chub (Great Lakes - Upper St. Lawrence populations) distribution in Canada



mouth. The Gravel Chub can be differentiated by the distinct, x-shaped marks on its body, while Hornyhead and River chubs have smaller eyes and are lighter brown in colour.

Text Sources: COSEWIC Assessment and Update Status Report on the Silver Chub (*Macrhybopsis storeriana*) in Canada 2012; Management Plan for the Silver Chub in Canada. 2010; E. Holm et al. ROM Guide to Freshwater Fishes of Ontario. 2008.

For more information, visit the SARA Registry at www.SARAregistry.gc.ca or the website below.

Cette publication est également disponible en français.

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www.aquaticspeciesatrisk.gc.ca

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