

Lake Sturgeon

An important part of Ontario's Biodiversity



Biology of Lake Sturgeon

Sturgeon have often been described as a “living dinosaur” because of their prehistoric appearance. They have existed on the earth for at least 200 million years, back to a time when the dinosaurs roamed the earth, and have changed very little since that time.

Lake sturgeon are Ontario's largest and longest living species of freshwater fish. They can grow to lengths of 2.5 metres (over eight feet) and weigh a staggering 150 kilograms (330 pounds).

They are found throughout Ontario, especially in the Great Lakes and their tributary rivers and the large rivers in the north. However, they are no longer found in many waters in their historic range.

Sturgeon can live up to 100 years or more. They are slow-growing and take a long time to reach reproductive age. Females spawn for the first time at 15 to 25 years of age, with males spawning at a slightly younger age. Once a female sturgeon has reached spawning age, she will only spawn once every five to nine years. This means a sturgeon hatched today likely won't spawn for the first time until 2030.

Despite being named lake sturgeon, these fish are also dependent on rivers. They reproduce and live significant parts of their lives in rivers; their bodies are shaped to move along the bottom of shallow, moving waters. Since these fish grow to a large size, they need plentiful food sources found in bigger rivers and connected lakes. Lake sturgeon generally live on the bottom, feeding on aquatic insects, mussels, crayfish, and small fishes.

The lake sturgeon can move distances of 100 kilometres or more to access the right habitats. In the spring, adult lake sturgeon migrate upstream to spawn in areas of fast water such as rapids, chutes or waterfalls, usually at the same locations where they were hatched.

Its long life span, slow growth and relatively slow reproduction rates make the lake sturgeon vulnerable to overharvest.

History as a Resource

Lake sturgeon have been important to humans in Ontario for thousands of years. The lake sturgeon had both cultural and subsistence importance to First Nations peoples. All parts of the fish were used: the meat was used for food; the skin was used as a container to store oil; and the pointed bones along the back were used as arrow heads. Today, lake sturgeon continue to be revered both culturally and as a valued food source to First Nations peoples.

Early settlers considered sturgeon a nuisance fish because they damaged their nets. They killed large numbers of fish and burnt them as fuel. By the late 1800s, they began to value the sturgeon for its flesh and caviar. By the early 1900s, this led to large increases in its harvest.



182-pound sturgeon caught and released on Lake Nipissing by two ministry employees as part of a study

Around 1879 to 1900, commercial harvest peaked at 4,900 metric tons (10.8 million pounds). It is estimated by the 1930s as much as 80 per cent of the sturgeon had been removed from some of the Great Lakes. Commercial harvesters moved to inland lakes and rivers as Great Lake populations declined.

The development of dams throughout the 20th century blocked access to spawning habitat and caused direct mortality of adult sturgeon. Pollution in the Great Lakes has reduced the survival of sturgeon. Logging and agricultural practices produced silt that damaged spawning habitat. All of these factors have left sturgeon populations at only a fraction of what they once were. They have vanished from many areas and are now found in about 100 water systems in the province.

Species at Risk

The sturgeon populations in the locations listed below are currently being considered for listing as a species at risk by the federal government as follows:

- **Endangered:** the Red-Assiniboine Rivers-Lake Winnipeg (including the Berens River in Ontario) and Winnipeg River-English River
- **Threatened:** the Great Lakes – Lake Ontario and Upper St. Lawrence River
- **Special Concern:** Lake of the Woods – Rainy River and Southern Hudson Bay-James Bay

The federal government is currently conducting consultation before deciding if lake sturgeon populations will be legally listed under the federal *Species at Risk Act*.

Under Ontario's new *Endangered Species Act, 2007*, lake sturgeon are listed as a species of special concern in Ontario as of June 30, 2008.

New threats – Global Caviar Demand

Historically, the Caspian Sea supplied 90 per cent of the world's caviar. Since 1992, following the collapse of the Soviet Union, there has been a dramatic increase in poaching for Caspian Sea sturgeon. These populations are now expected to be extinct by 2020.

In Ontario, there has recently been a notable increase in angling effort and in particular the harvest of sturgeon from rivers that are known to have productive populations. The recent harvest levels in some areas are too high for local populations to sustain. There is concern that the increased demand will threaten provincial sturgeon populations.

What is Ontario Doing?

The Ministry of Natural Resources has closed the sturgeon fishery on the Mississagi River, put in place a provincial zero catch and possession limit on recreational fisheries for sturgeon and is moving to a zero harvest limit on commercial fisheries in 2009 to protect the provincial population from overharvest.

Aboriginal harvest of the lake sturgeon for subsistence and ceremonial purposes will continue where it is sustainable. Where Aboriginal individuals and communities are harvesting commercially, the ministry will work with them to ensure that lake sturgeon populations can be managed sustainably.

An Ontario-wide lake sturgeon fisheries management strategy will be developed and include consultations with stakeholders and Aboriginal communities.

The ministry, in partnerships with industry, academia, First Nations and several non-governmental organizations, is conducting research and assessment work to better understand sturgeon populations in the province. Research topics include genetics work, evaluation of spawning success, radio tracking, estimating population size and development of strategies to reduce the impacts of hydroelectric developments.



This sturgeon, captured in the Niagara River in 1946, was two metres in length (6 feet 8 inches) and weighed 104 kilograms (230 pounds)