

Prepared for Michigan Conservation

Original: Cliff Ketcham *Posted*
cc: Cliff Ketcham
Fish Division ✓
Education - Game
Institute for Fisheries
Research
J. E. Williams

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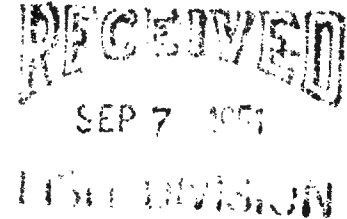
Report No. 1297

THE LAKE STURGEON, MICHIGAN'S LARGEST FISH

By

John E. Williams

Abstract



The lake sturgeon, found in Southern Canada and the north central United States, is a very primitive fish, possessing a shark-like tail, an armored body, a long snout with barbels and a skeleton almost completely cartilaginous. It prefers to live in large lakes and rivers, spawning in tributary streams or shallow lake bays in the spring. It is believed that the females at least do not spawn every year.

While young sturgeon feed on small crustacea, the adults prefer larval aquatic insects, clams, snails, and crayfish. They have been known to feed on fish but not extensively on fish eggs. Food is located by the sensory barbels and sucked up through the tube-like mouth.

Maturity is reached by the sturgeon in 15 to 25 years, depending upon location, and they probably live over 100 years. Lake sturgeon have been taken as large as 375 pounds, although a 90 pounder would be 50 to 60 years old. Aging, a very difficult process, is done from bones in the inner ear.

Sturgeon, formerly wasted in this area, became commercially important around 1870 and were utilized by smoking the flesh, making caviar from the eggs, isinglass from the air bladder, and leather from the skins. From a production of 1 1/2 million pounds in Michigan Great Lakes' waters in 1885 they were depleted practically to nothing by 1928 and it was then put on the protected list. Spearing in Michigan, allowed since 1948, has taken less than a total of 100 fish yearly from Black, Burt, and Mullett lakes in Cheboygan and Presque Isle counties. The largest, 152 1/2 pounds, was speared from Mullett Lake. Restrictions to the take are imposed by all states and Canada.

Little is known about the sturgeon in Michigan and it is hoped that the future may bring information which will help us increase the numbers of this species, which is an important natural resource and contributes so much to outdoor recreation.

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The lake sturgeon, one of six species of sturgeon from North America, is found throughout Southern Canada and the north central United States. With the exception of the lake sturgeon and the little shovelnose sturgeon, all of the American sturgeon are marine in nature, ascending coastal streams to spawn. Various aliases have been given to the lake sturgeon such as rock-, red-, rubber-nose-, Ohio-, and stone-sturgeon. The sturgeon is a very primitive fish and evidence indicates that it was existant 50 million years ago. To the person unacquainted with the sturgeon of today, the first sight of this fish is apt to be quite a shock, for the large size, shark-like tail, bony body, and long, rubbery snout with the feelers suspended beneath, all add up to a strange sight. The four feelers or barbels behind the snout drag along the bottom and serve to locate food. When food objects are sensed by the feelers, the long, tube-shaped mouth, located behind the feelers, is let down and sucks up the food material like a vacuum cleaner. The body is partially covered with rows of hard bony plates, two rows running along each side and one down the back. In young sturgeon these plates are very conspicuous but when the fish reaches a larger size they are scarcely noticeable. The head is also covered with bony plates, but the rest of the sturgeon's skeletal equipment is mostly made of cartilage, as in the sharks, instead of bone.

In general the sturgeon prefers to live in large lakes and rivers. Most of the springtime is spent in fairly shallow water, while summer finds them in deeper water. In winter the sturgeon exhibit a tendency to group up in schools in the deeper holes, now and then going out to cruise the more productive shoal areas for food.

Sturgeon seem to prefer to spawn in the larger streams tributary to the lakes in which they live but they have been observed spawning in shallow waters of lakes. Spawning takes place in the spring when the water temperature reaches 60° to 70° and is an impressive sight as a great deal of rolling, splashing and even jumping above the surface occurs. Each female is accompanied by several males and the eggs and milt are emitted simultaneously at short intervals. The eggs sink to the bottom and stick to vegetation and stones, and the adults then leave the spawning area quickly. Whether male fish spawn every year is not known, but it is believed that females do not. Sexual maturity is not reached by the sturgeon until 15 to 25 years of age, fish in Canada maturing later than those from farther south. A single large female may produce up to half a million eggs. Sturgeon eggs will hatch in about one week at 65° and the newly hatched fish, with their large yolk sacs, resemble young sharks. The young sturgeon has a small suction plate on its snout which enables it to cling to vegetation and rest.

Young sturgeon from 1 to 7 or 8 inches feed almost entirely on small crustacea, while the adults seem to prefer immature or larval midges, caddisflies, dragonflies, and mayflies and also consume large numbers of clams, snails, and crayfish. Small fish are sometimes sucked up by the mouth and even large suckers have been found in sturgeon stomachs. Fish, however, are not their stable items of diet and, contrary to popular opinion, neither are they extensive fish-spawn destroyers.

Century old sturgeon are probably not uncommon as they are among the longest lived fishes known. Reports and records indicate that they have reached a weight of 375 pounds in British Columbia and to over 300 pounds and nearly 8 feet long in Lake Michigan. The white or Oregon sturgeon of the Pacific Coast has been taken as large as 1900 pounds and there is a report of a specimen of the Great Russian sturgeon weighing over 3000 pounds. This was reliably reported before the recent Russian trend developed, claiming the first and largest of everything!

In Michigan it probably takes a sturgeon 15 to 20 years to reach the legal size of 36 inches, at which time it would weight about 8 pounds. A 90 pound, 6 foot fish would probably be 50 to 60 years old. Sturgeon are extremely difficult to age but through the use of bones in the inner ear, age determinations can be made with some confidence.

Although it is known that the sea lamprey will attack sturgeon, the population of sturgeon in the Great Lakes had been depleted before the advent of the lamprey on the scene. It is evident from the sturgeons' commercial history that its chief predator has been man himself.

The lake sturgeon was formerly very abundant throughout the Great Lakes region but, unfortunately, this is no longer the case. Previous to 1870 no use was made of sturgeon except as fertilizer; and commercial fishermen, getting hundreds of thousands of them in their nets, were wont to pile them on shore and burn them in order to reduce their numbers and protect their nets. By 1880, however, several industries were in full swing, smoking the flesh, manufacturing caviar from the eggs, isinglass from the air bladders, and leather from the skins. Heavy commercial netting then resulted in a reduction in the catch in the Michigan waters of the Great Lakes, to cite an example, from over 1 1/2 million pounds in 1885 to less than 2900 pounds in 1928. Michigan then

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completely closed all sturgeon fishing in 1929, both sport and commercial, in order to allow the big fish to increase their numbers. Since ¹⁹⁴⁸~~1949~~ Michigan has allowed a spearing season during January and February on inland lakes open to spearing, in an effort to make some use of the limited excess of these large fish. Restrictions now in effect include a 36 inch minimum size limit and a season limit of two sturgeon. More recently Lake St. Clair has been opened to spearing with the same season and limits and, beginning in 1951, Michigan commercial fishermen in the Great Lakes may sell any sturgeon gotten incidentally in their nets. Other states and Canada also now have varying restrictions on this fish. In Wisconsin, where 5 sturgeon are allowed each year, sturgeon fishermen themselves have requested that the cost of seals, with which they must tag their fish, be increased from 5 cents to 1 dollar each!

Sturgeon spearing in Michigan since 1948 has been almost entirely concentrated in the Cheboygan and Indian River chain of lakes, namely Black, Burt, and Mullett lakes. In 1948 approximately 75 sturgeon were speared, ranging up to 134 pounds, all fish coming from Black Lake in Cheboygan and Presque Isle counties. In 1949 and 1950 Black Lake, and Mullett Lake in Cheboygan County, shared the spotlight and in 1951 all three lakes were represented, Burt Lake, Cheboygan County, contributing 6 fish, all over 100 pounds.

Spearing is done from a shanty, over a marl bottom, in water 10 to 20 feet in depth, the depth depending on the light conditions, clearness of the water, and local opinion as to where the sturgeon are. The spear is weighted with lead, has strong tines and is fastened to a rope to enable the spearer to hold and play large fish. Slowly moving metal and wooden decoys are often used to attract the sturgeon's curiosity

and some devotees feel that bright objects on the bottom will lure them within striking distance. The fish are often sold immediately, there being a ready market for them. Prices are good and have averaged 1 dollar per pound for the fish and up to 3 dollars per pound for eggs in good condition for caviar. The record sturgeon speared so far was from Mullett Lake during the 1951 season. It weighed 152 1/2 pounds, measured 78 inches long, and was reported to have contained 47 pounds of eggs.

Artificial propagation of sturgeon has been accomplished by several different agencies, but the chief difficulty has been getting ripe males and females at the same time and place. The Michigan Conservation Department hatched and planted 580,000 young sturgeon in the Detroit River in 1893 to 1894, the only time it has been successful in raising them.

It is regrettable that so little is known about the sturgeon in Michigan, most of the life history material dealt with in this article having been obtained by organizations outside this state. It is hoped that, in the future, more emphasis may be placed upon obtaining information here, in order to continue the utilization of this natural resource and the outdoor recreation which it furnishes.

INSTITUTE FOR FISHERIES RESEARCH

John E. Williams

Report approved by G. P. Cooper

Report typed by B. A. Lowell