

Shortnose Sturgeon

Acipenser brevirostrum

A Prehistoric Legacy

Sturgeon have been swimming the world for over 70 million years and currently over 20 species of sturgeon exist throughout the Northern Hemisphere. The different species range in size from the 12-inch-long Amu-Darya sturgeon of central Asia to the nearly 18-foot-long Beluga sturgeon of central Europe. Seven different species of sturgeon occur in North American waters and two of those are found on the Atlantic Coast.

Sturgeons on the Atlantic Coast

The shortnose sturgeon, and its larger cousin, the Atlantic sturgeon, are the only two sturgeon species on the Atlantic Coast. Unlike the Atlantic sturgeon that frequents the Atlantic Ocean and its larger estuaries, the shortnose sturgeon primarily lives in larger rivers from Florida to New Brunswick, Canada, and rarely venture into the ocean. Both species are very similar in appearance, but the shortnose is the smaller of the two species. Shortnose sturgeon can grow up to 4 feet in length and about 25 pounds in weight, while the larger Atlantic sturgeon may reach up to 14 feet in length and weigh more than 600 pounds.

Not your typical fish

Sturgeon have a very distinctive appearance. Sturgeon are most closely related to paddlefish, and have some unique adaptations to their body that differentiate it from your average fish. The skeleton of their body is made of cartilage, but they have a dense skull made of bone. The skin lacks traditional scales, but rather has five rows of bony plates called scutes that serve as protective armor along their bodies. Sturgeon also have relatively large fins and a strong shark-like tail that allows them to swim great distances and navigate swift rivers.

Spawn in the spring, hole up in the winter

Shortnose sturgeon live along the bottom of large rivers and estuaries and rarely travel from their natal river. As water temperatures rise in the spring, shortnose sturgeon migrate to swift moving upstream reaches of rivers. The spawning season ranges from late February in Georgia to May in Canada. While spawning, female sturgeon broadcast thousands of adhesive eggs, about 3 millimeters in diameter, over the gravel bottom in the river. Once hatched, the young fish drift downstream and may eventually swim to brackish water.

After spawning, the adult sturgeon move to downstream areas to forage for food. As water temperatures cool in the fall to early winter, they travel to overwintering sites within the river. Aggregations of several fish will reside in deep holes until the following spring when temperatures rise again.

Suck it up!

Sturgeon have a small, toothless mouth on the underside of their head that is designed to suck up prey from the bottom of the river. They spend the summer feeding throughout their natal river estuaries on abundant bottom prey. Sturgeon also have four whisker-like barbels, lined with taste buds, on the bottom of their snouts, to help find food buried in the mud. Their diet consists

primarily of mussels, worms, small crustaceans, and insect larvae they forage from the river bottom.

Sturgeon live to a ripe old age

Shortnose sturgeon, like many other sturgeon species, are long-lived fish. Female shortnose sturgeon have been known to reach over 60 years of age, and males can live about half that long. Sturgeon can be aged by taking sections of the bony ray in the pectoral fin. The rays have rings that are formed each year, similar to the rings in the trunk of a tree. The rays of the fin can be removed from living fish, and are regenerated, so the method does not harm the fish.

Living a long life usually also means it takes a long time to reach maturity. Males typically mature at a younger age than females, and the age of maturity varies dramatically as you travel from the southern to the northern part of their range. Males can mature as early as 2-3 years in Georgia, but it may take as long as 10 years or more in Canada. Females may take only 6 years to mature in the south, but up to 18 years in the northern reaches of their range.

The valuable sturgeon

People have harvested sturgeon for thousands of years, and sturgeon remains have been found in prehistoric Native American refuse heaps. More recently, sturgeon were intensively fished for their meat and for their eggs to produce caviar. Shortnose sturgeon were not typically targeted for this fishing effort, because of their smaller size. The larger Atlantic sturgeon was the main focus of commercial fishing, as opposed to the smaller shortnose sturgeon. Because the shortnose sturgeon and Atlantic sturgeon share habitat for much of the year, shortnose sturgeon were captured and sold in the Atlantic sturgeon fishing industry.

During the end of the 19th and early part of the 20th century, sturgeon populations were nearly decimated on the Atlantic coast, primarily as a result of overfishing. At the same time, dam construction and deteriorating water quality reduced sturgeon habitat. Both overfishing and habitat loss contributed to shortnose population declines, leading to its classification as an endangered species in 1967.

Fish in peril

The shortnose sturgeon is only one of many sturgeon throughout the world that are in threatened or an endangered status. In the United States, the shortnose sturgeon is protected by the Endangered Species Act, which provides increased protection against habitat loss and prohibits harvest. Since the shortnose sturgeon was listed as an endangered species, populations have increased in some rivers, signaling the start of a long-awaited recovery.

Although the shortnose sturgeon is currently somewhat common in several rivers, including the St. John, Kennebec, Hudson, and Delaware Rivers, in other natal rivers, including the southeastern rivers and the Chesapeake Bay drainage, the populations are considerably smaller.

Restoring the species

The National Oceanic and Atmospheric Administration (NOAA) – Fisheries Program has the lead federal role in managing recovery of shortnose sturgeon. Marine biologists monitor populations, but much information still needs to be learned about the species. A Recovery Plan

for the shortnose sturgeon was developed in 1998 by NOAA-Fisheries to guide states and federal agencies in the restoration of this endangered species.

When the shortnose sturgeon was listed as an endangered species, pollution and over harvesting were listed as the main culprits to the decline in populations. Although great advances have been made against pollution, and commercial fishing has been eliminated, the shortnose sturgeon still does not have clear sailing to recovery. Habitat loss and incidental bycatch of other commercial fishing are big hurdles that need to be overcome before the populations can fully recover. These issues combined with the sturgeons late maturity and infrequent spawning (every 2-5 years) further complicate restoration efforts.

Current research

Many studies are underway to learn more about shortnose sturgeon. Scientists are tagging fish to study movement and migration patterns, taking tissue samples to determine genetic differences between rivers, evaluating the overall health of the species, and trying to determine population sizes in several rivers that the shortnose sturgeon inhabits. A better understanding of the general biology and population structure of the shortnose sturgeon will assist managers in improving shortnose sturgeon recovery efforts.

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