

Gulf Sturgeon



©Paul A. Lang
boy scouts holding sturgeon



Paul A. Lang/USFWS
intern measuring sturgeon



Paul A. Lang/USFWS
weighing sturgeon



Jake Osborne/USFWS
USFWS biologist, holds a young Gulf sturgeon in his hands

A “Living Dinosaur,” that’s the Gulf sturgeon! The Gulf sturgeon, *Acipenser oxyrinchus desotoi*, traces its ancestry back 200 million years and little has changed with the appearance of this fish since.

This prehistoric fish reaches lengths of up to nine feet and can weigh up to 300 pounds. It is well armored with rows of heavy plates that make it look menacing, but it is actually not an aggressive species, preferring to linger near the bottom of riverbeds and oceans. With a tail like a shark, whiskers like a catfish, and a tube-like mouth that projects from the bottom of its head...the sturgeon has been called both ugly and yet beautiful.

The Gulf sturgeon is an anadromous fish, meaning that it migrates from the marine environment to the fresh water river systems in the spring to spawn. It has a very strong homing instinct, and individuals generally return to the river of its birth. Gulf sturgeons live up to 40 years and mature late in life. Males will mature at about seven years while females reach maturity at 12 to 15 years. The females, which spawn only every three to five years, will migrate upriver in the spring, sometimes over 100 miles, seeking limestone bedrock, cobble, and coarse gravel to deposit from 200,000 to 500,000 black eggs, also called roe, and about the size of a BB. The eggs, which are sticky, adhere to the rocks and crevices and hatch in two to three days. The hatchlings remain in the river for about a year, feeding on small organisms.

Spawning and non-spawning adult and sub-adult Gulf sturgeons migrate into the freshwater rivers in the spring and stay in the rivers until fall when they return to the marine environment. Adult and sub-adult Gulf sturgeons have an unusual life history trait — they do not eat during their six to eight month fresh water residency.

Their weight loss is quickly gained back — and then some — when the fish return to the marine waters to overwinter and feed on a variety of bottom dwelling marine organisms, including amphipods (small shrimp-like crustaceans), isopods (small crustaceans), lancelets (sediment-dwelling worm-like animals), polychaetes

(bristle worms), and other marine worms.

Adult and sub-adult Gulf sturgeon have few natural predators other than large alligators in rivers and sharks in the marine waters. Gulf sturgeon eggs, hatchlings, and young juveniles fall prey to a variety of predators, including catfish, bass, sunfish, and suckers.

Among the 25 different sturgeons throughout the world, the Gulf sturgeon inhabits the most southern ranges of the sturgeons and is unique to the Southeast. Gulf sturgeons, once common in river systems from Tampa Bay, Florida to the Mississippi River, occupy only a portion of their original habitat and are now found only in a number of large fresh water coastal rivers from the Suwannee River in Florida to the Pearl River in Louisiana.

As with most sturgeons worldwide, Gulf sturgeons were exploited for their meat and caviar. Commercial landings of sturgeons in Florida alone approached 400,000 pounds in the early 1900s. Gulf sturgeon populations decreased dramatically. The species was further impacted by the construction of dams on the fresh water rivers, which blocked them from reaching their historical spawning sites. Water pollution and loss of habitat have also had an adverse impact on this prehistoric survivor.

The Apalachicola River in Florida had a long history of sturgeon fishing dating back to the late 1800s and early 1900s. It supported the most economically important sturgeon fishery in the state. Thirty-two families commercially fished for Gulf sturgeon in the Apalachicola River from the middle 1940s until the 1970s, when sturgeon harvest levels were greatly reduced and competition from the Russian imports increased.

A limited recreational fishery developed in the late 1950s in the Apalachicola River below the Jim Woodruff Lock and Dam when it was built. Gulf sturgeons would congregate below the dam, which blocked upstream movement to historical spawning sites, and anglers would “snag” or “snatch” the fish using heavy fishing tackle. This fishery only lasted a few years.



USFWS biologist and intern holding sturgeon

The Gulf sturgeon was listed as a threatened species in 1991 under the Endangered Species Act. As a result of the listing, a multi-agency team developed a comprehensive plan to recover and manage the Gulf sturgeon. Prior to the Gulf sturgeon's listing, very little was known about the life history of the fish. Consequently, researchers had to start from scratch to address recovery action items addressed in the newly developed Gulf Sturgeon Recovery/Management Plan.

Scientists from Florida and Georgia have studied the Gulf sturgeon population in the Apalachicola River periodically for the last 30 years. Much of the work was directed toward solving some of the unknown life history characteristics of the Gulf sturgeon, and the work still continues.

Early collection and tagging studies were able to prove that a small population of reproducing Gulf sturgeon still existed in the river.

Scientists attached radio transmitters to a number of sturgeons and monitored them while in the river to study their movement and learn more about where they live. Juvenile, sub adult, and adult Gulf sturgeons show a preference for specific holding areas in the Apalachicola River system referred to as "summer resting" sites. The resting areas, ranging in depth from six to 60 feet, are described as moderate to deep holes, and sometimes shallow areas along straight stretches of the river.

Scientists have also used ultrasonic transmitters to determine that Gulf sturgeons feed and grow mainly in the marine environment. Gulf sturgeons were found in the bays, estuarine areas and Gulf of Mexico during the overwintering period. While in the bays, the fish showed a preference for the sandy shoreline habitats with water depths less than 11 feet. Gulf sturgeons overwintering in the Gulf of Mexico were generally located in near-shore areas, from one-half to two miles from shore at water depths of 15 to 40 feet.

Suitable Gulf sturgeon spawning habitat consisting of limestone bedrock and cobble is limited in the Apalachicola



range map for the sturgeon

River. Researchers have identified several good spawning sites, and recent studies documented successful Gulf sturgeon spawning at several of the sites. Efforts are now being directed toward determining potential threats to the spawning habitat and finding solutions to ensure protection that will save the vital spawning habitat.

Scientists documented that the Gulf sturgeon in the Apalachicola River possessed a unique genetic makeup, different from Gulf sturgeon populations located in river systems to the west but identical to sturgeons found in river systems to the east. Although, some straying and exchange exists among Gulf Coast river sturgeon population, it is

unknown if once a population is eliminated from a system that it will be able to recover by individuals straying into that river from other watersheds.

In 2003, the Apalachicola River was designated as "Critical Habitat" for Gulf sturgeon due to its documented suitable spawning habitat, active summer resting areas, and availability of food for juvenile and young-of-year fish. The designation of critical habitat requires that each federal agency shall, in consultation with the Fish and Wildlife Service, insure that any action authorized, funded or carried out by the federal agency is not likely to adversely modify critical habitat. Critical habitat is adversely modified if it no longer provides the essential conservation needs of the species for which it is designated.

The Gulf sturgeon population in the Apalachicola River was estimated in 2004 to be under 400 fish. At that time, the Gulf sturgeon population was increasing slightly. Further studies are necessary to determine the current Gulf sturgeon population. However, lack of personnel and funding are the primary reasons why researchers have not done more to recover the Gulf sturgeon in the Apalachicola River.

The Gulf sturgeon is an excellent indicator of the health of the aquatic system. It is found in a wide

diversity of habitats and has persisted in less than optimal conditions. Continued existence of the Gulf sturgeon in the Apalachicola River depends on our maintaining and protecting important riverine and marine habitats.