

Appendix A: Fish

Atlantic Sturgeon

Acipenser oxyrinchus

Federal Listing

State Listing T

Global Rank

State Rank S1

Regional Status V. High



Photo by Robert Michelson

Justification (Reason for Concern in NH)

Atlantic sturgeon were once abundant in the estuaries and larger rivers of the northeast. Early maps sometimes referred to the Merrimack River as the “Sturgeon River”. Over-harvest, habitat degradation, and migration barriers contributed to the population declines that were first noticed at the beginning of the twentieth century (Smith 1995). They were harvested as a food source, but their most notable commercial product was their eggs, which were shipped to Europe as caviar to replace the dwindling supply of caviar from the over harvested sturgeon populations in the Black Sea. The Atlantic sturgeon is listed as a federally endangered species throughout its range in the coastal U.S., except for the Gulf of Maine population, where it is listed as threatened (Apostle et al. 2013).

Distribution

Atlantic sturgeon spawn in Atlantic coastal rivers from Newfoundland to Louisiana. While at sea, Atlantic sturgeon aggregate on foraging grounds along the coastal plain including areas in the Bay of Fundy, Long Island Sound, and off the coast of Virginia (Scott and Crossman 1973). They are a wide ranging fish species and may occasionally forage in the Great Bay Estuary. Since 1981, there have been 2 reports of Atlantic sturgeon in the Great Bay estuary (Doug Grout, NHFG, personal communication). It is not known how far Atlantic sturgeon swam up the Merrimack River before the construction of dams in the 1800’s, but historical records indicate that sturgeon were caught in the river up to Amoskeag Falls in Manchester (although no distinction was made between shortnose and Atlantic sturgeon) (Noon 2003).

Habitat

The Atlantic Sturgeon is anadromous, living in marine waters and entering fresh and brackish waters during spawning migrations. Spawning runs are from February to July depending on the location of the river (Scott and Crossman 1973). In Maine, spawning occurs in July. Migration activity during spawning periods has been observed at depths of 10 to 42 feet and temperatures of 13.3° to 18.4°C (Scott and Crossman 1973, Everhart 1976, Kieffer and Kynard 1993). The return migration of spent adults to marine waters appears to be somewhat random, and the highest concentrations of adults return between September and November (Scott and Crossman 1973). Spawning substrates consist of hard clay, small rubble, and gravel (Everhart 1976). Eggs are adhesive when dispensed, attaching to vegetation and stones. Juveniles will spend up to 4 years in riverine or tidal habitats, where they forage in areas of soft sediment usually at the upstream edge of tidal influence (Scott and Crossman 1973). Atlantic sturgeon are found at relatively shallow depths in the ocean, usually between 5 and 150 meters.

Appendix A: Fish

NH Wildlife Action Plan Habitats

- Large Warmwater Rivers
- Estuarine
- Marine



Distribution Map

Current Species and Habitat Condition in New Hampshire

The seasonal abundance and distribution of Atlantic Sturgeon in New Hampshire waters is poorly understood.

Population Management Status

There are no ongoing population management efforts specific to Atlantic sturgeon in New Hampshire.

Regulatory Protection (for explanations, see Appendix I)

- Federal Endangered Species Act
- Possession prohibited

Quality of Habitat

There is no information on the relative quality or importance of habitat for Atlantic sturgeon in NH waters.

Habitat Protection Status

Habitat Management Status

There are no ongoing habitat management efforts specific to Atlantic sturgeon in New Hampshire.

Threats to this Species or Habitat in NH

Threat rankings were calculated by groups of taxonomic or habitat experts using a multistep process (details in Chapter 4). Each threat was ranked for these factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). These combined scores produced one overall threat score. Only threats that received a “medium” or “high” score have accompanying text in this profile. Threats that have a low spatial extent, are unlikely to occur in the next ten years, or there is uncertainty in the data will be ranked lower due to these factors.

There are no threats ranked high or medium for this species.

Appendix A: Fish

List of Lower Ranking Threats:

Disturbance from dams that block species from spawning areas or other important habitat
Mortality from commercial over-harvest due to fishing bycatch
Disturbance from dredging

Actions to benefit this Species or Habitat in NH

Support research in the Gulf of Maine

Objective:

Use acoustic telemetry studies to identify important Atlantic sturgeon habitat throughout the Gulf of Maine.

General Strategy:

The network of acoustic telemetry receivers continues to expand in the North Atlantic. Recent research in the Merrimack River suggests that many shortnose sturgeon move into different rivers and estuaries to forage before returning to their natal river to spawn. The extent of habitat use and movement among Atlantic sturgeon populations in the Gulf of Maine is not well understood. Supporting sturgeon movement studies may help determine the relative importance of New Hampshire coastal waters and estuaries as sturgeon habitat.

Political Location:

Watershed Location:

References, Data Sources and Authors

Data Sources

Published literature was used to define habitat characteristics and historical distribution. Fisheries professionals provided additional information on recent sightings. Published literature and personal communications with fisheries biologists.

Data Quality

Atlantic sturgeon cannot reach historic spawning areas in the Connecticut and Merrimack watersheds (Micah Kieffer, United States Geological Survey (USGS), personal communication), and only 2 recent (1981 and 1991) observations of the species have occurred in the coastal waters of New Hampshire. A monitoring project for shortnose sturgeon (*Acipenser brevirostrum*) from 1987 to 1988 lacked any incidental catches of Atlantic Sturgeon (NHFG unpublished data). There are only two records of Atlantic sturgeon in NH waters.

2015 Authors:

Matthew Carpenter, NHFG, Benjamin Nugent, NHFG

2005 Authors:

Appendix A: Fish

Literature

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