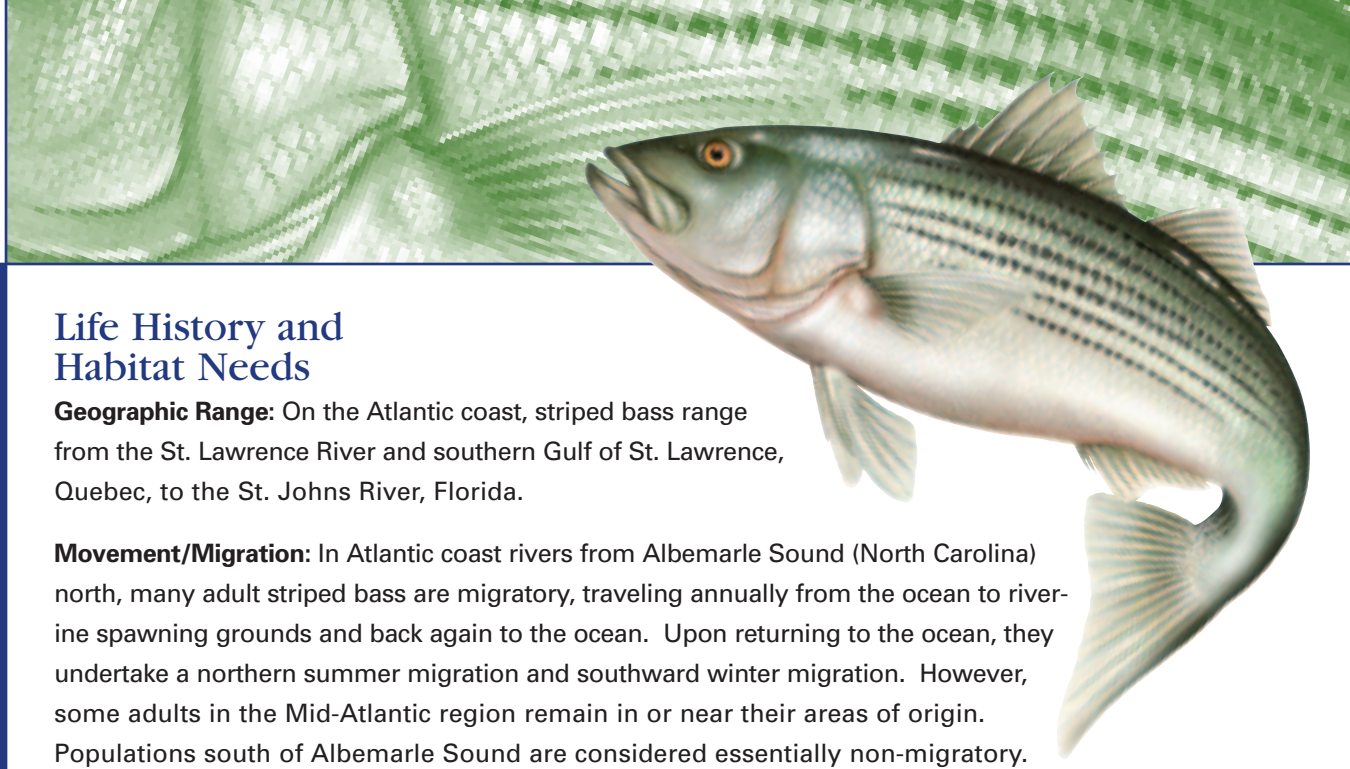
ATLANTIC STRIPED BASS

Morone saxatilis



Life History and Habitat Needs

Geographic Range: On the Atlantic coast, striped bass range from the St. Lawrence River and southern Gulf of St. Lawrence, Quebec, to the St. Johns River, Florida.

Movement/Migration: In Atlantic coast rivers from Albemarle Sound (North Carolina) north, many adult striped bass are migratory, traveling annually from the ocean to riverine spawning grounds and back again to the ocean. Upon returning to the ocean, they undertake a northern summer migration and southward winter migration. However, some adults in the Mid-Atlantic region remain in or near their areas of origin. Populations south of Albemarle Sound are considered essentially non-migratory.

Most juveniles remain in the river and estuarine areas where they were spawned, moving downstream in summer and fall as they get older Older juveniles may begin to move offshore in the fall, but those less than two years old rarely complete coastal migrations.

Spawning: In the spring, migratory striped bass spawn in freshwater near the heads of Atlantic coast estuaries, or far inland up major tributaries, depending on the estuary. Spawning usually occurs near the water surface in turbid waters of relatively shallow reaches of rivers, streams and creeks. The principal spawning areas for migratory striped bass along the Atlantic coast are located in the Chesapeake Bay and its tributary rivers, the Delaware River, the Hudson River, and the Roanoke River.

Habitat Use: Young and juvenile fish are generally found over clean, sandy bottom in shallow water with salinities between 0.2 to 16.0 ppt. Juveniles have also been found over gravel beaches and over a mixture of mud, sand, gravel, and rock. Adults occur over a wide variety of substrates, including rock and boulders, gravel, sand, submerged aquatic vegetation, and mussel beds. Adults are often found along sandy beaches, rocky shores, in the surf, in areas hollowed out by wave action, around sand bars, and under rafts of floating seaweed. Water temperature, salinity and total dissolved solids concentrations are thought to be important factors for spawning. Water velocity and flow in spawning rivers are significant factors determining spawning habitat suitability. Certain physiochemical factors (e.g., temperature, dissolved oxygen, and current velocity) are important for egg survival and hatching. In addition, various pesticides, heavy metals, pharmaceutical drugs, and other commonly discharged chemical substances can negatively affect striped bass eggs, larvae, and juveniles.

Threats to Habitat

- Dams, spillways, and culverts
- Water withdrawal facilities
- Hydropower facilities and hydroelectric projects
- Thermal and toxic discharges
- Channelization, dredging, and jetties
- Land use (farming, logging, and urbanization)
- Aluminum and other metals
- Changes in pH levels

ASMFC Habitat Areas of Particular Concern

Important habitats for striped bass include spawning sites; nursery areas; inlets that allow passage between inland riverine spawning and estuarine nursery habitats; and offshore wintering grounds that occur in the Atlantic Ocean from Long Island Sound south to at least Topsail Island, North Carolina.

Recommendations to Improve Habitat Quality

- Identify current and historical distributions to target areas for protection and/or restoration
- Identify site-specific threats to striped bass populations. Notify appropriate regulatory agencies and recommend measures to minimize or eliminate threats
- Establish timeframes that protect striped bass populations during critical development stages from activities such as dredging, bridge construction, and disposal of dredged material
- Evaluate the effects of water withdrawal projects or projects that change temperature or salinity regimes on striped bass populations
- Document water quality criteria for spawning and nursery habitat. Provide input on water quality regulations and applications for federal permits and licenses
- Document the long-term effects of environmental contaminants known to accumulate in striped bass tissue. Reduce or eliminate contaminants from spawning and nursery habitat
- Identify hydropower dams that pose significant impediments to migration and target them for appropriate recommendations during relicensing
- Prohibit the use of fishing gear that has negative impacts in specific habitat types (e.g. trawling in spawning and nursery areas)

Habitat Research Needs

- Determine the effects of environmental contaminants and habitat degradation on striped bass including consequences of wetlands alterations
- Document the impact of power plants and other water intakes on larval, post-larval and juvenile mortality in spawning and nursery areas, and calculate the resultant impact to adult stock size
- Define restrictions necessary for implementation of projects in spawning and overwintering areas and develop policies on limiting development projects seasonally or spatially

Additional Information

Striped bass are managed under Amendment 6 (2003) to the Fishery Management Plan for Atlantic Striped Bass. Additional information is contained in the ASMFC's Diadromous Fish Habitat document. Both documents can be found on the ASMFC website at www.asmfc.org or by contacting the ASMFC Habitat Specialist at (202) 289-6400.

www.asmfc.org

ATLANTIC STATES MARINE FISHERIES COMMISSION