



ATLANTIC CROAKER

Micropogonias undulatus

Life History and Habitat Needs

Geographic Range

Atlantic croaker are commonly found in U.S. coastal waters from New Jersey to Florida, although they have been reported in the Gulf of Maine and commercial landings have been reported as far north as New Hampshire.

Spawning

Atlantic croaker spawn in tidal inlets, estuaries, and on the continental shelf at depths ranging from 7 to 81 m and temperatures ranging from 16 to 25°C. Atlantic croaker have a long spawning season that generally begins in late summer and continues on to early spring. Peak spawning activity occurs in late fall and winter.

Habitat Use

Atlantic croaker is a small sciaenid (a member of the drum family known for the sound it makes by vibrating its swim bladder) typically found in benthic habitats. Post-larval Atlantic croaker use estuarine areas as nursery grounds, where they are often associated with shallow marsh habitats. Although juveniles may live in estuaries or tidal riverine habitats with low or high salinities, they grow faster in lower salinity and cannot tolerate large fluctuations. Juvenile fish often prefer deeper tidal creeks where salinity changes are usually less than in shallow flats and marsh creeks. Substrate plays a large role in determining juvenile distribution. This species is a bottom-feeding fish (note the down-turned mouth) and has been correlated with mud bottoms containing large amounts of detritus that provide sufficient prey. As Atlantic croaker grow larger, they move seaward towards higher salinity environments.

Adult fish are one of the most common bottom dwelling, estuarine species on the Atlantic coast. Temperature and depth are important factors in adult distribution. Adults are found in water temperatures ranging from 5 to 36°C and salinities between 0.2 and 70, but are most common in waters with salinities from 6 to 20. Adult Atlantic croaker prefer muddy and sandy substrates in waters shallow enough to support submerged aquatic plant growth and offers protection from predators. Adult croaker use *Thalassia* beds for refuge although abundance in the seagrass beds is temperature-dependent and changes seasonally.

Adults are found on oyster, coral, and sponge reefs, as well as man-made structures. The distribution and extent of hypoxic zones in estuaries may also influence habitat use and distribution. Croaker will move from deep, hypoxic waters to shallow, oxygenated waters during hypoxic events.

Movement/Migration

Throughout its lifecycle, Atlantic croaker move from less saline estuarine waters and riverine habits to deeper and more saline environments offshore. Juveniles recruit to estuarine nursery habitats during winter, spring and early summer and then migrate downstream throughout autumn. By late autumn, the majority of juveniles have left their estuarine nursery habitat migrating to ocean habitats. Adults generally spend the spring and summer in estuaries, then migrate offshore and south in the fall. Decreasing water temperatures trigger adult migrations because croakers cannot survive in cold, winter water temperatures.

Threats to Habitat

- Coastal development
- Dredging and dredge spoil placement
- Point and nonpoint source pollution
- Habitat alteration (e.g., wetlands converted to agricultural use, bulkheads, proliferation of docks and marinas)
- Recreational boating (e.g., damage to seagrass beds)
- Hydrological modifications (ditching, channelization, freshwater flows)
- Sewage treatment and disposal

ASMFC Habitat Areas of Particular Concern

ASMFC Habitat Areas of Particular Concern (HAPC) for Atlantic croaker are estuaries, which serve as important nursery and spawning areas.

Recommendations to Improve Habitat Quality

- Provide comments on projects involving water withdrawal (e.g., power plants, irrigation, water supply projects) to ensure that impingement, entrainment, and/or modification of flow and salinity regimes will not adversely impact on Atlantic croaker stocks. Develop water use and flow regime guidelines that are protective of Atlantic croaker spawning and nursery areas.
- Identify hydropower dams that pose significant threats to maintaining adequate freshwater flows to Atlantic croaker nursery and spawning areas and target them for appropriate recommendations during relicensing.
- Prohibit the use of any fishing gear having a negative impact on Atlantic croaker habitat within HAPCs (e.g., trawling in spawning areas or primary nursery areas should be prohibited).
- Develop permitting conditions and planning considerations to avoid or mitigate adverse impacts to HAPCs (e.g., dredging windows to reduce impacts to locations of eggs and spawning activity).
- Coordinate development and implementation of nonpoint source pollution control plans.
- Review adequacy of water quality standards to protect all life-stages of Atlantic croaker.

Habitat Research Needs

- Identify essential habitat requirements.
- Quantify the impact of habitat loss and degradation on croaker populations.
- Evaluate causes of hypoxic events that may limit croaker distribution in estuaries.
- Continue monitoring juvenile and adult croaker populations in major nursery areas.
- Determine the impacts of any dredging activity (i.e. for beach re-nourishment) on all life history stages of croaker.
- Re-examine historical ichthyoplankton studies of the Chesapeake Bay to evaluate magnitude of estuarine spawning.

Additional Information

Atlantic croaker are managed by the ASMFC under Amendment 1 to the Interstate Fishery Management Plan for Atlantic croaker (2005), Addendum I (2012) and Addendum II (2014). Amendment 1 and related documents are available on the ASMFC website at www.asmfc.org or by contacting the ASMFC Habitat Program Coordinator at 703.842.0740.

