BLACK SEA BASS

Centropristis striata

Life History and Habitat Needs

Geographic Range

A temperate reef fish, black sea bass are comprised of two distinct stocks. The northern stock is distributed from the Gulf of Maine south to Cape Hatteras and the southern stock extends from Cape Hatteras south to the Gulf of Mexico. Black sea bass distribution has expanded northward since the mid-2000s as ocean temperatures warm due to climate change. Black sea bass are opportunistic visual predators that rely on their large mouth and ocean currents to catch prey. Their diet is broad and includes fish, crabs, shrimp, mussels, razor clams, and polychaetes

Movement/Migration

Individuals belonging to the northern stock migrate between inshore, coastal areas, and bays (in southern New England and the Mid-Atlantic Bight) and offshore wintering areas (from central New Jersey to North Carolina). Migrations are stimulated by changes in water temperature. In fall, when coastal bottom water temperatures decline and approach 7°C, black sea bass migrate offshore to wintering areas at depths of 240 – 540 ft. In spring, when bottom waters exceed 7°C, black sea bass move inshore to waters at depths of less than 120 ft.

Spawning

Black sea bass are protogynous hermaphrodites meaning they transition from female to male as they age, typically between two to five years of age. They spawn at depths ranging from 20 – 50 m on the inner continental shelf, generally between the Chesapeake Bay and Montauk Point, Long Island. Spawning occurs from May to July, but may extend into October and November.

Habitat Use

Black sea bass are considered a benthic species associated with structure and vegetation for feeding and shelter; however, they can be found on open, unstructured bottom. Eggs and larvae are found in mid-shelf coastal waters from late spring to late summer. Larvae migrate to coastal waters and move to bottom habitats. Juveniles move into estuarine or sheltered coastal nursery areas. Estuarine nursery habitats are shallow, hard-bottom areas with structure that includes shellfish (oyster and mussels), sponge, amphipod tubes, submerged aquatic vegetation beds, cobble, and shoals as well as wharves, pilings, wrecks, artificial reefs, and crab and conch pots. Adults are usually associated with structured habitats including submerged aquatic vegetation, oyster and mussel beds, rocky reefs, cobble and rock fields, stone coral patches, and exposed clay and stone aggregate. Non-natural structures including artificial reefs, shipwrecks, piers, pilings, jetties, groins, fish and lobster traps, and rough bottom along the sides of navigation channels also serve as black sea bass habitat. Offshore winter habitats occupied by adults are poorly known.

Threats to Habitat

- Bottom otter trawls, and fishing dredges
- Coastal development
- Excess nutrients and sedimentation
- Sediment dredging and dredge spoil placement

- Port and marina development, utilization, and maintenance
- Recreational boating in nursery areas
- Energy exploration and extraction
- Marine sand mining
- Climate change induced ocean warming

ASMFC Fish Habitats of Concern

Fish Habitats of Concern have yet to be identified for black sea bass, due in part to limited information on habitat use by the species.

Recommendations to Improve Habitat Quality

- Encourage wetlands protection and restoration.
- Encourage protection and restoration of submerged aquatic vegetation.
- Encourage restoration of oyster reefs.
- Minimize or prevent nonpoint source pollutants such as nutrients and sediment from entering surface waters through use of best management practices such as riparian buffers and living shorelines.
- Prevent the use of benthic trawl gear in areas having black sea bass habitat.

Habitat Research Needs

- Identify spawning habitat and winter habitat used by adults and juveniles.
- Evaluate the value of artificial reefs as habitat.
- Describe the relationship among habitat structure complexity, black sea bass abundance, and fish community composition.
- Determine the optimum size for submerged aquatic vegetation beds and oyster reefs to promote successful reproduction and recruitment.
- Investigate the transport mechanism of newly settled juveniles from the coastal zone to estuarine nurseries.
- Characterize the composition of natural benthic habitats.

Additional Information

The northern stock of black sea bass is managed jointly by the ASMFC and the Mid-Atlantic Fishery Management Council (MAFMC). The Interstate FMP is current to Amendment 18 (2015) to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan and Addendum XXVII (2016). These and other related documents can be obtained from the ASMFC website at *www.asmfc.org*, MAFMC website at *www.mafmc.org*, or by contacting the ASMFC Habitat Program Coordinator at 703.842.0740. Information on the southern stock can be obtained from the South Atlantic Fishery Management Council (SAFMC) website: *www.safmc.net*.

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