



RED DRUM

Sciaenops ocellatus

Life History and Habitat Needs

Geographic Range

Red drum are found along the Atlantic coast from the Chesapeake Bay to Key West, Florida, and throughout the Gulf of Mexico to northern Mexico.

Movement/Migration

In general, red drum are a regionally resident species that do not exhibit large scale migrations. Juvenile and sub-adult fish remain in their natal estuaries until approximately age 5, at which point they exit the estuary in favor of nearshore and coastal waters. Adult fish move between inshore and nearshore waters during spawning season in the fall (late August – November).

Spawning

Spawning occurs primarily in nearshore areas close to inlets and passes during late summer and fall, with a peak in late September/October. Male fish produce characteristic drumming sounds believed to be related to spawning activity.

Habitat Use

The red drum begins its life in a variety of high-salinity coastal habitats, including estuaries, inlets, passes, and mouths of bays. After spawning occurs in early fall, currents carry the eggs and larvae to nursery areas such as coastal marshes, shallow tidal creeks, bays, tidal flats of varying substrate, tidal impoundments, and seagrass beds. As they grow into juveniles, red drum utilize inshore estuarine habitats of varying salinities, including tidal brackish habitats, emergent vegetated wetlands (flooded salt marshes, brackish marsh and tidal creeks), estuarine scrub/shrub (mangrove fringe), submerged aquatic vegetation, oyster reef and shell banks, and unconsolidated bottom (soft sediments). In these habitats, juvenile fish typically prey on grass shrimps, small crabs, and fish. Sub-adults are found throughout small tidal creeks and larger channels of southeastern estuaries, in backwater areas behind barrier islands, and in front of beaches during certain times of the year. Larger red drum (approximately 4 – 5 years old) migrate from estuaries to nearshore waters during the fall, and have been observed on hard/live bottom areas and artificial reefs.

Threats to Habitat

- Coastal development including beach re-nourishment and energy developments
- Navigation and related activities, e.g., dredging and hazardous material spills
- Maintenance and stabilization of coastal inlets, e.g., jetty construction
- Loss of estuarine and marine wetlands
- Invasion by exotic species that displace or minimize native animals and plants, or disrupt predator-prey dynamics
- Nutrient enrichment
- Watercraft operation activities, e.g., pollutant discharges from boats
- Hydrologic modifications, e.g., flood and mosquito control, aquaculture
- Alteration of freshwater flows into estuarine areas
- Certain fishing gears, such as trawls and bivalve dredges, which adversely affect structures and epifauna needed for spawning



ASMFC Fish Habitats of Concern

Important habitats for red drum include all coastal inlets, submerged aquatic vegetation beds, the surf zone (including outer bars), and state-designated nursery habitats (e.g., Primary Nursery Areas in North Carolina; Outstanding Resource Waters in South Carolina's coastal counties; Aquatic Preserves along the Atlantic coast of Florida).

Habitat Bottlenecks

While there is currently no supporting evidence to suggest a particular habitat type limits red drum populations, seagrass beds are especially important for newly settled individuals, and oyster reefs are especially important to red drum during the juvenile and sub-adult life stages. In fact, data from Georgia's Marine Sportfish Health Survey indicate over 80% of juvenile red drum are associated with shell habitats. Changes in water flow and conditions due to watershed activities may also limit recruitment of larvae at a local scale.

Recommendations to Improve Habitat Quality

- Develop permit conditions to avoid or mitigate adverse impacts on red drum habitat. For example, establish windows of compatibility for activities which may adversely affect red drum habitats, such as navigational dredging, bridge construction, and dredged material disposal.
- Establish freshwater inflow targets for estuaries documented as important spawning, nursery, or wintering habitat. Work with appropriate federal agencies to identify hydropower dams and water supply reservoirs which pose significant threats to maintenance of appropriate freshwater flows or migration routes for red drum spawning areas. Make appropriate recommendations during re-licensing evaluation.
- Scrutinize projects involving water withdrawal from nursery habitats (e.g., power plants, irrigation, water supply projects) to minimize adverse impacts from impingement/entrainment, modification of flow, and temperature and salinity regime changes due to water removal.
- Develop protocols and schedules for providing input on water quality regulation, eliminate existing contaminants from red drum habitats, and limit the introduction of compounds known or suspected to accumulate in red drum tissue to ensure that water quality needs for red drum are met and maintained.
- Protect and enhance habitat features, which can contribute to fish production, and consider how harvest of one species may impact the focus species and the biotic communities both supporting it, and which it supports.

Habitat Research Needs (Listed in order of priority)

- Identify specific red drum spawning areas from North Carolina to Florida so these areas may be protected from degradation and/or destruction.
- Investigate the concept of estuarine reserves to increase the escapement rate of red drum along the Atlantic coast.
- Determine methods for restoring red drum habitat and/or improving existing environmental conditions that adversely affect red drum production.

Additional Information

Red drum are managed under Amendment 2 to the Interstate Fishery Management Plan for Red Drum (June 2002). Addendum I: Habitat Needs & Concerns for Red Drum (2013) and other management documents can be found on the ASMFC website at www.asmf.org or by contacting the ASMFC Habitat Program Coordinator at 703.842.0740.