



# SUMMER FLOUNDER

*Paralichthys dentatus*

## Life History and Habitat Needs

### Geographic Range

Summer flounder range from Nova Scotia to Florida but are most abundant in the Mid-Atlantic Bight from Cape Cod, Massachusetts to Cape Hatteras, North Carolina.

### Movement/Migration

Summer flounder migrate annually between inshore, coastal, or estuarine summering grounds and offshore wintering grounds on the outer continental shelf. Timing of seasonal migrations varies with latitude. In the northern part of the range, migration to offshore wintering occurs earlier than in the southern part of the range. Juveniles inhabit inshore waters year-round.

### Spawning

Summer flounder spawn in the late fall and winter while they migrate offshore to wintering grounds. Spawning migration is linked to sexual maturity, with the oldest and largest fish migrating first. Spawning continues through December in the northern parts of the range and up to March in the southern areas.

### Habitat Use

Summer flounder eggs are pelagic, buoyant, and most abundant between Cape Cod and Cape Hatteras. Eggs are commonly found in waters with temperatures between 14 and 17°C. Larvae are found in the northern part of the Mid-Atlantic Bight from September to February, and in the southern part from November to May. Larval abundances peak in November in waters with temperatures between 9 – 18°C. From winter through early spring, larvae enter estuaries and coastal lagoons and develop into juveniles that bury in the sediment. Burying behavior is influenced by substrate type, water temperature, time of day, tide, salinity, and predator and prey abundance. Juveniles use estuarine marsh creeks, seagrass beds, mud flats, and open bay areas for habitat. Juveniles are most abundant in areas with a predominantly sandy bottom or sand-shell substrate, or where there is a transition from fine sand to silt and clay. Adults prefer sandy habitats, but are also found in marsh creeks, seagrass beds, and sand flats. Adults camouflage themselves to match various substrates. Adults spend most of their life on or near the sea bottom burrowing in the sandy substrate.

## Threats to Habitat

- Mobile bottom-tending fishing gears (e.g., bottom otter trawls, clam and sea scallop dredges, etc.)
- Coastal development activities
  - Dredging and dredge spoil disposal
  - Sand mining and beach renourishment
  - Coastal infill
  - Shoreline protection (e.g., hardening with bulkheads, jetties, etc.)
- Water quality issues
  - Nonpoint source pollution
  - Sewage treatment and disposal
  - Industrial wastewater and solid wastes
- Marine transport and boating
  - Port development, utilization, and shipping
  - Marinas and recreational boating
  - Channel dredging and dredge spoil

- Energy development (exploration, extraction, processing, and transport)
  - Liquefied Natural Gas
  - Oil and Gas
  - Renewables such as wind
- Marine mining
- Aquaculture
- Ocean disposal
- Non-native and introduced species

## ASMFC Fish Habitats of Concern

Shoal waters of Cape Cod Bay, and estuaries, bays, and harbors east and south of Cape Cod are critically important juvenile summer flounder habitat. The estuarine waters west and northwest of Cape Hatteras, North Carolina, and high salinity bays and tidal creeks of Core Sound, North Carolina are important nursery grounds for juvenile summer flounder. Submerged aquatic vegetation and macroalgae beds are also fish habitats of concern.

## Recommendations to Improve Habitat Quality

- Prohibit filling of wetlands and shallow coastal waters.
- Establish windows of compatibility for activities known or suspected to adversely affect summer flounder habitat (e.g., water withdrawals, dredging, bulkheading, and channel construction) and establish buffer zones around important summer flounder nursery areas.
- Coordinate development and implementation of point and nonpoint source pollution control plans.
- Reduce erosion and pollution in coastal watersheds.
- Design or update confined animal facilities to limit wastewater discharges.
- Reduce or eliminate pesticide use, and improve the application and calibration of spray equipment for pesticides and fertilizers to reduce water quality degradation and nutrient loading.

## Habitat Research Needs

- Map, characterize, and quantify important summer flounder nursery habitat.
- Evaluate fishing gear impacts to summer flounder habitat.
- Determine upper and lower dissolved oxygen and salinity limits for adults and eggs. Evaluate the effects of tidal currents on all life stages.
- Compile information on the effects of environmental contaminants on the feeding, growth, fecundity, survival, and distribution of summer flounder.
- Conduct research on linkages between summer flounder habitat and stock productivity, with emphasis on nearshore and offshore connections.

## Additional Information

Summer flounder are managed jointly by the ASMFC and the MAFMC. The Interstate FMP (1982) has been adjusted over the years, the most recent being Addendum XXVIII (2017). In recent years recreational management has moved from state-by-state to regional management. For more information on state and/or federal management of summer flounder, visit available on the ASMFC website (state waters management) at [www.asmf.org](http://www.asmf.org) and the MAMFC website (federal waters management) at [www.mafmc.org](http://www.mafmc.org), or by contacting the ASMFC Habitat Program Coordinator at 703.842.0740.

