



TAUTOG

Tautoga onitis

Life History and Habitat Needs

Geographic Range

Tautog are found from Nova Scotia to South Carolina, but are most abundant from Cape Cod to the Chesapeake Bay.

Movement/Migration

Tagging studies show that tautog do not migrate north and south along the coast, but make inshore-offshore seasonal migrations triggered by changes in bottom water temperatures. In late fall, when water temperatures fall below 10°C, adult tautog migrate to deep (25 to 45 m), offshore wintering areas with rugged bottom topography. In the spring when coastal waters warm to 11°C or above, tautog generally migrate from their wintering grounds to spawn in the vicinity of estuaries and inshore marine waters. Typically, adults stay inshore during summer, but may move offshore to cooler waters during the warmest summer months. Observations of localized populations, such as those in the lower Chesapeake Bay, remain inshore despite temperature increases in the summer.

Spawning

Tautog spawn in or near the entrances of estuaries. Though not observed, tautog may also spawn in continental shelf waters off southern New England, where eggs and larvae have been documented. However, this may be an artifact of the flushing of estuarine waters into these offshore areas. Spawning begins in April in the southern part of the Mid-Atlantic Bight and begins in summer in the northern parts of the range. The spawning season generally extends from mid-May to mid-August and peaks in June and July.

Habitat Use

Tautog eggs are buoyant and drift for about three weeks before they settle on to submerged vegetation. Eggs and larvae are found in highest concentrations on the inner continental shelf off of Southern New England and Long Island. Younger larvae tend to stay near the water's surface, while older, larger larvae spend more time at depth. Newly settled tautog inhabit shallow benthic waters less than one meter deep. Juvenile tautog disperse to seasonally occupied habitats during summer months. Seasonal habitats may include beds of eelgrass, macro-algae, or mussels. In the fall, the migratory group generally returns to perennial habitats occupied by the remaining tautog population because of the decline in the presence of, or conditions associated with, seasonal habitats.

The most important habitat parameter affecting the distribution and abundance of juvenile tautog is the availability of cover. Both juvenile and adult tautog depend on shelter for protection during the night when they are not foraging. Shelter may consist of rock reefs, rock outcrops, gravel, eelgrass beds, and kelp or sea lettuce beds. Shelter sites, therefore, may become a limiting factor as tautog population size increases.

Adults and larger juveniles are found in or near vegetation, rocks, natural and artificial reefs, jetties and groins, mussel and oyster beds, and similar complex, structured coastal habitats. Tautog exhibit site fidelity but are temperature limited. When temperatures reach between 5 to 8°C, they settle into individual shelters to overwinter, where they remain dormant until spring when water temperatures rise. Adult tautog occupy inshore habitats from April and May until late October. In winter, they generally move to deeper areas (25 to 45 m) with complex topography.



Threats to Habitat

- Degradation or loss of structured, complex estuarine habitat
- Salvaging or disturbance (e.g., lowering of wreck heights posing navigational hazards) of shipwrecks important to tautog as refuge
- Use of heavy, rock-hopper-roller bottom trawl gear that disturbs shelter sites
- Beach renourishment activities (e.g., increased turbidity in estuarine waters or unintentional covering of nearby hard bottom areas with sand)
- Reduction in the number, distribution, and structure of oyster beds
- Low dissolved oxygen concentrations
- High water temperatures (especially critical to proper egg development)
- Contaminants including cadmium and petroleum hydrocarbons

ASMFC Fish Habitats of Concern

Bottom structured habitats (such as outcrops, reefs, and SAV) and inlets adjacent to estuaries serve as important refuge and spawning sites, respectively, for juveniles and adult tautog.

Recommendations to Improve Habitat Quality

- Protect existing habitat including spawning aggregation areas and wintering areas.
- Establish windows of compatibility for activities known or suspected to adversely affect tautog habitat (e.g., water withdrawals, dredging, bulkheading, and channel construction) and establish buffer zones around important nursery areas.
- Prohibit or limit the use of bottom-disturbing fishing gear that damage shelter sites and nursery areas.
- Minimize sewage discharges and upgrade existing wastewater treatment systems near nursery areas.
- Evaluate the effect of artificial reef habitats to mitigate natural habitat losses.

Habitat Research Needs

- Evaluate regional habitat uses by tautog. Identify hibernation sites and temperature thresholds to determine if areas should be protected or conserved (to reduce or eliminate habitat-related damage or disturbance).
- Identify specific spawning/pre-spawning aggregation areas, overwintering areas, and associated migration routes, as well as the timing and duration of spawning and migratory behaviors.
- Evaluate the condition and extent of suitable juvenile habitats. Define the susceptibility of juveniles to contaminants and evaluate the effects on tautog health.
- Determine the source of offshore eggs and larvae (in situ or displaced from inshore regions).

Additional Information

Tautog are currently managed by the ASMFC under Addendum VI (2011) to the Fishery Management Plan for Tautog. Addendum VI and related documents can be obtained on the ASMFC website at www.asmfc.org or by contacting the ASMFC Habitat Program Coordinator at 703.842.0740.