

Striped Bass in the Gulf of Mexico?

By Mark Fisher

Striped bass (*Morone saxatilis*), or stripers, are anadromous, meaning they spend most of their lives in salt water and migrate to fresh water to spawn. During spawning runs they ascend coastal streams, sometimes going as far as 100 miles inland. Their historical range is along the Atlantic coast from the Saint Lawrence River, Canada to the St. John's River, Florida and along the Gulf coast from the Suwannee River, Florida to Corpus Christi Bay, Texas. Except for an occasional remnant they are no longer found throughout their historical Gulf range other than a small population in the Apalachicola-Chattahoochee-Flint river system in northwest Florida, Georgia and Alabama. The native Gulf population declined during the 1950's and 1960's and it is speculated that the construction of water control structures and extensive channelization of waterways during this time prevented successful reproduction. A Gulf commercial fishery existed from the late 1800's through the early 1960's.

There is no historical record of stripers ever being particularly common off Texas. The last reported commercial landings were in 1939 from Corpus Christi Bay (495 lbs), although in 1890 5,000 pounds were landed from Galveston Bay, 3,000 pounds were landed from Aransas Bay and 1,000 pounds came from Corpus Christi Bay. The TPWD occasionally encounter stripers in their gill nets, mostly from Sabine, Galveston, and Matagorda Bays. We also see hybrid stripers, although much less frequently. These fish are all "escapees" from upstream stocked reservoirs, such as Toledo Bend, Lake Livingston, and Lake Texana.

The spawning requirements of striped bass are very exacting, a major factor limiting the establishment of self-sustaining populations. Spawning is successful only where they have access to a large river with sufficient current (at least 1 foot/sec) to maintain the greenish semi-buoyant eggs in suspension until they hatch. Otherwise, eggs will settle to the bottom where they will become silted over and die. Because hatching times are 36 to 75 hours, a considerable stretch of flowing water (~50 miles) is required, and only a few reservoirs contain self-sustaining populations, including Santee-Cooper, Lake Mead, and Lake Texoma. However, striped bass are readily propagated in hatcheries and periodic stockings can maintain populations in reservoirs not having tributaries suitable for spawning.

Spawning occurs in the spring when water temperatures exceed 58 F. Adults migrate upstream to spawn in response to rising temperatures and increased water flows. They spawn in areas with rapids and strong currents, near the surface, typically with one female accompanied by a host of males. Eggs are fertilized externally, and the spawning act is accompanied by much splashing as a group of up to 50 fish roll and splash at the surface. On the east coast, this activity is referred to as "rock fights" (they are called "rock fish" locally). After spawning, fish gradually move back downstream. Upstream movements are often repeated in late fall, probably pursuing schooling prey and cool water refuges.

Telemetry studies reveal Apalachicola River striped bass remain in the river or the estuary most of the time, only occasionally entering the open Gulf. They spend winters in the lower reaches of the river, and following their spawning run they disperse downstream. The hot summer months are spent at the mouths of cool water springs and streams.

Striped bass prefer water temperatures less than 75 F and will stop feeding when forced to live under warmer conditions, although Gulf-race fish have a higher temperature tolerance than their

Atlantic cousins. Their strong preference for cooler water can isolate them from prey and acceptable oxygen levels, and this behavior is responsible for summer die-offs. They feed irregularly during the summer and grow very slowly. Fish over 10 pounds are particularly dependent on cool water, and are more susceptible to warm water-induced mortality.

The five Gulf states initiated a plan to re-establish striped bass to their historic range, but stockings of Gulf-race stripers in Texas bays have to date been unsuccessful. Just under 500,000 fish were stocked during 1975-1977, and millions were stocked from 1983-1994, mostly in Trinity Bay and Sabine Lake. None of these stockings produced any significant results. However, a land-locked race that completes its entire life cycle in fresh water was discovered when the Santee-Cooper Reservoir in South Carolina was completed in 1942, and their offspring have been used to stock reservoirs throughout Texas and the United States. Atlantic coast stripers have also been introduced along the Pacific coast as far back as the 1890's.

In summary, the native Gulf population has declined since the 1950s likely due to blocked access to historical spawning areas and summer thermal refuges. The only naturally occurring population is in the Apalachicola-Chattahoochee-Flint river system in Florida, Georgia and Alabama. These fish are being restored and maintained to 1) provide a broodfish source for Gulf state restoration programs, 2) support recreational fishing programs, and 3) maximize natural reproduction and recruitment into the Gulf population.