

Kingfishes

Southern Kingfish *Menticirrhus americanus*

Northern Kingfish *Menticirrhus saxatilis*

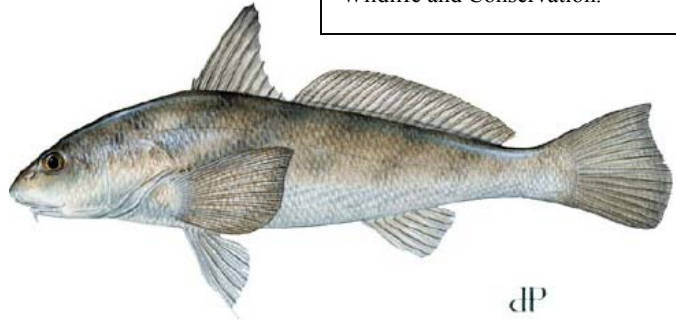
Gulf Kingfish *Menticirrhus littoralis*

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DESCRIPTION

Taxonomic and Basic Description

Kingfishes are members of the drum family of fishes and are related to such species as spotted sea trout (*Cynoscion nebulosus*), spot (*Leiostomus xanthurus*), Atlantic croaker (*Micropogonias undulates*), red drum (*Sciaenops ocellatus*), black drum (*Pogonias cromis*) and others. In South Carolina's waters, there are three different species of kingfishes: the Gulf kingfish (*Menticirrhus littoralis*), the southern kingfish (*Menticirrhus americanus*) and the northern kingfish (*Menticirrhus saxatilis*). On occasion, all three species will be found together. Along the east coast of the United States, the common name for the kingfishes varies by location. In South Carolina, they are called "whiting" whereas in North Carolina they are "sea-mullet."



Southern Kingfish by Diane Peebles for Florida Department of Wildlife and Conservation.

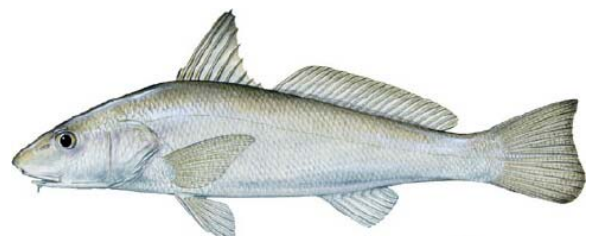


Northern Kingfish
<http://www.state.nj.us/dep/fgw/artkingfish.htm>

Freshly caught kingfishes are relatively easy to tell apart by their coloration. The northern kingfish has dark, angular bands along the sides of their body. The Gulf kingfish has a silvery color as well as a darker area on the tail fin (mainly on the dorsal lobe or the top portion).

In addition to coloration differences, the northern kingfish has a long spine in the first dorsal fin; the southern and the Gulf kingfishes have a much shorter spine in that fin. The scales on the breast of the Gulf kingfish are much smaller than those in the two other species.

Both commercial and recreational fishers harvest the southern kingfish throughout this species' range. It is difficult to obtain reliable estimates of the landings because neither group of fishermen separates landings by species. For example, all three kingfishes are listed as "king whiting" in the commercial statistics of the National Marine Fisheries Service (NMFS Commercial Fisheries Statistics 2005) for the east coast. The recreational statistics are also problematic due to confusion of the species by port samplers and creel clerks. Port



Gulf Kingfish by Diane Peebles for Florida Dept. Wildlife & Conser.

samplers view the commercial catch and obtain catch statistics (amount of catch, species and individual fish size). Creel clerks interview recreational anglers at boat landings, piers, beaches and marinas to obtain information on recreational catch. Additional training for individual samplers has minimized this problem in the recreational fishery; however, data from the early years of the survey are suspect (NMFS Marine Recreational Fisheries Statistics Survey 2005). Because landing reports do not differentiate between these three species, this account addresses conservation issues for all kingfish species found in South Carolina.

Status

None of the kingfishes are considered threatened or endangered; however, there are concerns in South Carolina regarding by-catch mortality. Although the population status of kingfish in general appears to be stable in South Carolina, the difficulty in separating these three species in order to detect population trends for each is a cause for concern.

The prevalence of kingfish in near shore, shallow, coastal waters make these species excellent indicators of the health of this ecosystem. In addition, kingfish are a forage item in the near shore oceanic waters for another species of conservation concern, the bottlenose dolphin.

POPULATION DISTRIBUTION AND SIZE

The southern kingfish is found from Cape Cod to northern Argentina. The southern range of the northern king fish extends to northern Mexico in the gulf; the two other species extend to southern Brazil. In waters of the United States, kingfish are relatively common from Chesapeake Bay, Virginia to southern Florida and throughout the Gulf of Mexico (Chao 2002). In South Carolina, southern kingfishes are commonly encountered in near shore, ocean waters along the coast and in higher salinity bays and estuaries like Calibogue Sound. Large southern kingfish are over 35 cm (13.8 inches) total length; however, most individuals are smaller.

The population status of kingfishes along the southeast coast is unknown. The Southeast Area Monitoring and Assessment Program (SEAMAP) within the South Carolina Department of Natural Resources (SCDNR) is responsible for monitoring coastal waters. Cruises are undertaken during spring, summer and fall from Cape Hatteras, North Carolina south to Cape Canaveral, Florida. These surveys provide estimates of relative abundance for a variety of species. Relative abundance is the average catch of a given species for all trawls made during a survey cruise. SEAMAP catch per tow values (CPUE) for South Carolina waters varies between years.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Kingfish prefer near shore, shallow coastal waters with a muddy-sand bottom as well as high salinity bays and estuaries along the coast. The Gulf kingfish favor higher energy areas, such as sand bars, with wave action. The breaking waves suspend small crabs (mole crabs) and other crustaceans that the kingfish feed upon. Gulf kingfish feed by waiting beyond the wash (off-shore where the waves break) for a prey to pass. The same strategy is used at offshore sand bars. The other two kingfish species prefer slightly deeper water with a sandy mud bottom.

Kingfish can also be found in areas that have sufficient benthic infauna. These animals that live in the sediment, such as polychaetes (sea worms), mollusks (clams and snails) and crustaceans (amphipods, sea-lice) represent an important food source to kingfish. Southern kingfish appear to move south in the winter to areas with warmer water temperatures. They return to South Carolina's waters in the spring as temperatures moderate (Wenner and Sedberry 1989). The gulf and northern kingfish are believed to have a similar migration pattern.

CHALLENGES

Kingfish are consistently found in penaeid shrimp fishery by-catch along the southeast coast (unpub. data); this incidental catch can result in death for many kingfish juveniles. The mesh of a shrimp trawl is able to retain all but the very smallest kingfish juveniles. Any fishes that reside in the same area as the targeted shrimp will be caught by nets during shrimp trawls. Since the nets are pulled for a relatively long time (one or more hours), most fish caught by the net are dead by the time the catch reaches the boat (pers. obs.). Deckhands remove shrimp from the catch, then cull the remaining by-catch of fish and crab. Fish large enough for consumption are retained and the remainder is discarded over the side. Larger southern kingfish are placed in boxes, iced and brought to the dock for sale (pers. obs.). Kingfishes are prized for their mild and firm flesh and can bring a fair price. In some kingfish habitat, shrimp fishing is not conducted, either because of rough bottom or an absence of shrimp. These areas provide a refuge for this species from the shrimp trawl nets (unpub. data).

Poor water quality from increased nutrient runoff and sewage discharges can cause oxygen depletion in kingfish habitat. Dredging offshore sand bars could eliminate some habitat as well as stir up sediments. Elimination of sand bars reduces the amount of high-energy habitat for the gulf kingfish and impacts the benthic infauna that forms the diet of all three species. During dredging activities, sediments and sediment bound chemical toxicants become suspended in the water column. Turbidity that accompanies dredging activities may impact the respiratory lamellae in the gills of the all fishes, resulting in affects similar to terrestrial animals breathing dust.

CONSERVATION ACCOMPLISHMENTS

Recent regulations require that shrimp nets be equipped with TEDs (turtle excluder devices) and BRDs (by-catch reduction devices). TEDs prevent large kingfish and marine turtles from being trapped in the nets and drowned. BRDs allow many fish to escape the nets that would otherwise be included in the catch. By-catch reduction devices have mitigated some of the by-catch mortality for kingfishes and other species. However, with increased fuel prices combined with soft markets due to competition with farm-raised, imported shrimp, the use of BRDs in the penaeid shrimp fishery had declined over the years; a pattern that may continue.

CONSERVATION RECOMMENDATIONS

- Continue to monitor kingfish distribution, relative abundance, maturity and age composition in the SEAMAP survey and through recreational fisher surveys.
- Develop ways to obtain better data from the recreational and commercial fisheries.
- Develop a management plan for kingfish in South Carolina.
- Work with municipalities to encourage the use of Best Management Practices (BMP) to reduce nutrient and sewage runoff.
- Identify key offshore habitat (sand bars) and work with the appropriate agency to deter dredging in these areas.
- Partner with federal agencies and NGOs to establish incentive programs that promote continued use of BRDs in the shrimp trawl industry.

MEASURES OF SUCCESS

The ability to estimate population trends for each species of kingfish is one measure of success. Stable population trends for all three species of kingfish, as documented during annual surveys, would represent another measure of success.

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