



# Species Profile: Spot

## Short-Lived Fish Supports South Atlantic Fisheries & Serves as Important Prey Species

### Introduction

Spot directly support recreational and commercial fisheries in the South Atlantic and function as an important forage species in the region. The range of this short-lived species includes brackish and saltwater habitats predominately between the Chesapeake Bay and South Carolina. Annual variation in landings, typically composed of fish belonging to a single year class, is due in part to the prevailing environmental conditions at spawning and nursery sites. To date, a formal coastwide stock assessment of spot has not been conducted. The 1987 Management Plan identified data requirements to conduct a stock assessment to manage the resource more effectively. Small-sized spot remain a major component of the bycatch associated with seine, trawl, and pound net fisheries in the Chesapeake Bay and North Carolina, as well as that of the South Atlantic shrimp trawl fishery. However, substantial reductions in the magnitude of bycatch have occurred in the latter fishery. Upon the future completion of an assessment, additional management measures may be designed to protect the stock if necessary.

### Life History

Spot occur along the U.S. Atlantic coast in estuarine and coastal waters from the Gulf of Maine to Florida, although they are most abundant from Chesapeake Bay south to South Carolina. Spot migrate seasonally, entering bays and estuaries in the spring, where they remain until late summer or fall when they move offshore to spawn. Spot mature between the ages of two and three, at lengths of seven to eight inches. Their maximum life span is about six years, although fish older than four years are uncommon. Spawning takes place in the ocean from fall to early spring, and the post-larvae move into estuaries, utilizing low salinity tidal creeks where they develop into juveniles. As spot grow, they move toward higher salinity areas during the summer and early fall and offshore in the fall as water temperatures decrease. Those that summered in the northern portion of their range also move south in the autumn. Spot are opportunistic bottom feeders, eating mainly worms, small crustaceans and mollusks, as well as organic material. The post-larvae prey on plankton, but become bottom feeders as juveniles or adults. Predators such as striped bass, weakfish, summer flounder, bluefish, and sharks eat them in turn.

### Commercial & Recreational Fisheries

Spot support commercial fisheries along the Atlantic coast, particularly from the Chesapeake Bay southward. They are harvested by a variety of commercial gears including haul seines, pound nets, gillnets, and trawls. Commercial catches fluctuated widely between 1950 and the early 1980s, ranging from 3.9 to 14.5 million pounds. Such variability is expected, because spot are a short-lived species and catch in most years consists of a single year class, the strength of which appears to be determined by environmental conditions that prevail on the spawning and nursery grounds in any particular year. Landings show less year-to-year variability from 1984 to 2005, ranging from 5.5 to 8.8 million pounds.



Photo courtesy of Virginia Marine Resources Commission

**Spot**  
***Leiostomus xanthurus***

**Common Name:** Norfolk spot, flat croaker, golden croaker, silver gudgeon, goody, chub, roach, jimmy, spot croaker

**Family:** Sciaenidae

**Management Unit:** Delaware - Florida

**Interesting Fact:**  
\* Only member of the drum family, which includes weakfish, red and black drum, and croaker, with a forked tail.  
\* Spot live to be older and attain a greater size in the northern part of its range.

**Largest Recorded:** 13.5 inches, 1 pound, 7 ounces (2004)

**Life Span:** 6 years

**Stock Status:** Unknown

Spot is a popular recreational species that is sought by anglers from Delaware Bay to northern Florida. Most of the Atlantic recreational harvest is taken within three miles of the coast, from shore or by private or rental boats rather than by party or charter boats. Recreational harvest of spot has fluctuated from a high of 6.9 million pounds in 1981 to a low of 1.6 million pounds in 1999. Over the last five years, recreational harvest has averaged 3.7 million pounds, and for the first time in 2006, recreational landings surpassed commercial landings.

### Stock Status

No coastwide assessment has been performed for spot; however, spot are a target or component of several state surveys using trawl, gillnet, or seine net to sample. Juvenile abundance indices (JAIs) have been highly variable. Juvenile abundance was below average in 2006 in the Delaware Estuary and the state's inland bays. With the exception of a few spikes in abundance, JAIs have generally declined in Maryland's portion of the Chesapeake Bay and showed a slight downward trend in abundance in other Maryland Bays. Nearly consistent declines in juvenile abundance has occurred in Virginia's portion of the Chesapeake Bay since 1992, while abundance has fluctuated without trend in North Carolina's Pamlico Sound and other estuaries. An adult abundance index in North Carolina shows little fluctuation for the five years that the survey has been conducted.

In addition to these surveys, commercial and recreational catch-per-unit effort (CPUE) data provide indices of relative spot abundance. Since 1994, commercial CPUE has generally increased over time in Maryland, varied without trend in Virginia, and been relatively stable in North Carolina. Maryland recreational CPUE has generally decreased with a few spikes and a small amount of potential recovery in 2003-2005, while Virginia recreational CPUE has been variable around the time series average, exceeding it in 2005 and 2006, and North Carolina recreational CPUE has shown a general increase over time.

### Atlantic Coastal Management Considerations

The Atlantic States Marine Fisheries Commission adopted the Spot Fishery Management Plan (FMP) in 1987. The major problem addressed in the FMP is the lack of stock assessment data for effective management of the resource. Basic data requirements include information on recruitment, age, size, and sex composition, and variations in these characteristics over time and space. In addition, accurate catch and effort statistics are needed from the recreational and commercial fisheries to assess the effect of fishing activities on the population. Progress has been made on collecting these data elements, but more work remains to make an assessment possible.



Another problem addressed by the FMP is the bycatch (or inadvertent catch of undersized or unwanted fish) of spot in the southern shrimp trawl, pound net, long haul seine, and trawl fisheries. The magnitude of the problem was underestimated at the time of FMP development, although it was cited as having potentially significant effect on spot stocks. Since plan adoption, major progress has been made in the development of bycatch reduction devices (BRDs) for shrimp trawlers. In some tests, bycatch has been reduced by 50 to 75 percent, while retaining shrimp, through the use of a BRD. Although commercial fishermen did not readily accept use of them initially because of their expense and handling problems, the devices are now used by shrimpers throughout the South Atlantic states.

Unlike the majority of the Commission's FMPs, the Spot FMP does not contain mandatory management measures, but rather provides recommendations for states to follow in reaching the FMP's goals. Each year, the South Atlantic State-Federal Fisheries Management Board is provided with a review of the Spot FMP, the current year's landings, and data from fishery independent surveys to determine whether revised management action is required. Upon the future completion of an assessment, additional management measures may be designed to protect the stock if necessary. For more information, please contact Nichola Meserve, Fishery Management Plan Coordinator, at (202) 289-6400 or nmeserve@asmfc.org.

**Annual Coastal Spot Landings**  
Source: Personal communication from NMFS Fisheries Statistics Division, Silver Spring, MD, 2008

