

Spot
Leiostomus
xanthurus

Common Names:
Norfolk spot

Family: Sciaenidae

Interesting Fact: Only member of the drum family, which includes weakfish, red and black drum, and croaker, with a forked tail.

Largest Recorded: 16 inches, 1 1/2 pounds

Oldest Recorded: 5 years

Age/Length at Maturity:
Age 2 (7.3 inches) and 3 (8.4 inches)

Stock Status:
Unknown

Species Profile: Spot

Popular South Atlantic Stock Benefits from Bycatch Reduction Efforts

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

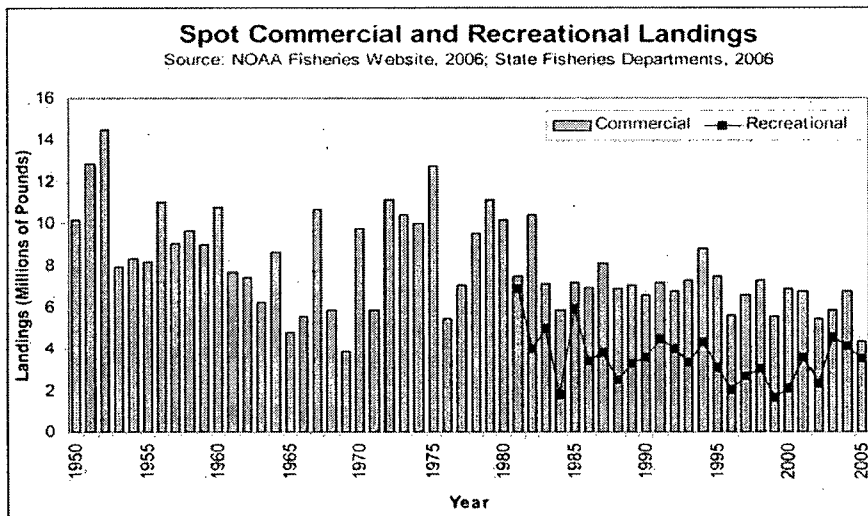
Spot occur along the U.S. Atlantic coast in estuarine and coastal waters from the Gulf of Maine to Florida, although they are most abundant from Chesapeake Bay south to South Carolina. Spot migrate seasonally, entering bays and estuaries in the spring, where they remain until late summer or fall when they move offshore to spawn. Spot mature between the ages of two and three, at lengths of up to seven or eight inches. Their maximum life span is about five years, although fish older than three 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 they 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. Such predators 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 southward. They are harvested by a variety of commercial gear including haul seines, pound nets, gillnets, and trawls. Commercial catches have fluctuated widely since 1930 with no apparent long-term trends. Landings peaked in 1952 at 14.5 million pounds, and have since ranged between 3.9 and 12.7 million pounds. Since 1983, commercial landings on the Atlantic coast have remained steady, ranging from four to nine million pounds. Commercial landings were 4.37 million pounds in 2005.

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. The recreational catch of spot has fluctuated from a high of 6.9 million pounds in 1981 to a low of 1.6 million pounds in 1999. In 2005, 3.6 million pounds were landed, the highest number in almost a decade.

Spot are short-lived and year-to-year fluctuations in landings can be expected since the catch in most years consists of a single year class. Moreover, year class abundance is thought



to be determined by environmental conditions that prevail on the spawning and nursery areas in any particular year. Changes in fishing effort, habitat degradation, and economic conditions may also affect the quantities of fish caught in any year.

Stock Status

Except for Virginia, there is no specific spot stock status survey, but the species is a major component of samples in generalized trawl and seine surveys in several states. An analysis of spot catches in Maryland's juvenile seine survey showed a trend of increasing abundance from 1957 to 1976, and then a protracted decline, punctuated by occasional high years. The 2005 abundance index increased drastically, reaching its highest value since 1988. In 2006, abundance fell back to low levels.

Spot young-of-the-year abundance, as determined by the Virginia Institute of Marine Science via the Virginia Chesapeake Bay Trawl Survey, was relatively high from 1981 through 1990. Since 1992, spot young-of-the-year abundance has remained low except for fair to moderate-sized year classes in 1997 and 2005. The abundance of juvenile spot in the North Carolina Pamlico Sound Survey has fluctuated without trend since 1979.

Atlantic Coastal Management Considerations

The Commission adopted the Spot Fishery Management Plan (Plan) in 1987. Management is overseen by the South Atlantic State-Federal Fisheries Management Board (South Atlantic Board), which includes participating states from Delaware through Florida, as well representation from the National Marine Fisheries Service, U.S. Fish and Wildlife Service and South Atlantic Council. The major problem addressed in the Plan is the lack of stock assessment data for effective management of the resource. Basic data requirements include information on recruitment, age, size, and sex compo-

sition, 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 impact of fishing activities on the population. Another problem addressed by the Plan is the bycatch (i.e., the 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 Plan development, although it was cited as having potentially significant impacts on spot stocks.

Since plan adoption in 1987, significant progress has been made in the development of bycatch reduction devices to reduce the magnitude of bycatch of fish such as spot by shrimp trawlers. These devices are designed to retain shrimp while shunting bycatch out of escape openings. In some tests, bycatch has been reduced by 50 to 75 percent. Although commercial fishermen did not readily accept use of these devices 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 fishery management plans, the Spot Plan does not contain mandatory management measures, but rather provides recommendations for states to follow in reaching the Plan's goals. Each year, the South Atlantic Board is provided with a review of the Spot Plan, the current year's landings, and data from fishery independent surveys to determine whether revised management action is required. For more information, please contact Nichola Meserve, Fisheries Management Plan Coordinator, at (202) 289-6400 or nmeserve@asmfc.org.

