

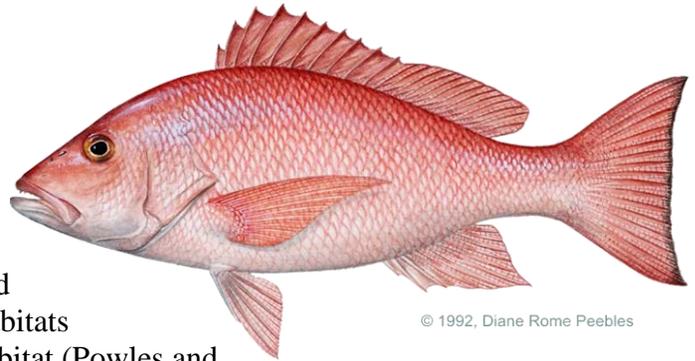
Red Snapper

Lutjanus campechanus

Contributor (2013): Byron White (SCDNR)

DESCRIPTION

Red snapper, a large snapper of great commercial and recreational fishery importance, is found near reef habitats consisting of limestone outcroppings, live-bottom habitat (Powles and Barans 1980), and shipwrecks along the southeastern United States, from North Carolina around the Gulf of Mexico to the Yucatan Peninsula (Nelson and Manooch, 1982; Manooch and Potts 1997). Red snapper occur in depths ranging from a few meters as juveniles, to over 600 m as adults (Camber 1955; Bradley and Bryan 1975). Little is known of juvenile red snapper along the Atlantic coast as they are rarely seen or harvested.



© 1992, Diane Rome Peebles

Taxonomy and Basic Description

Red snapper is a member of the family Lutjanidae (Snappers). Lutjanids are members of a large, diverse order of bony fishes, the Perciformes, which includes basses, sunfishes, perches, drums, groupers and many families of familiar shallow-water fishes. The genus *Lutjanus* includes silk snapper, gray snapper, schoolmaster, and many other species in addition to red snapper. Maximum adult total length (TL) for red snapper is 1.0 m (3.281 ft.) (Smith 1997); maximum weight is 22.8 kg (50 lbs.) (IGFA 2001).

The red snapper's body has a sloped profile, medium-to-large scales, a spiny dorsal fin, and a laterally compressed body. Red snapper have short, sharp, needle-like teeth, but they lack the prominent upper canine teeth found on the mutton, dog, and cubera snappers. Coloration of the red snapper is light red, with more intense pigment on the back. The iris of the red snapper is red.

Red snapper have 10 dorsal spines, 14 dorsal soft rays, 3 anal spines, and 8-9 anal soft rays. Red snapper under 30 to 35 cm (12 to 14 in.) TL frequently have a large, dark spot on the upper sides, located below the anterior soft dorsal rays.

Status

The stock of red snapper off the Southeastern Atlantic Coast was listed in 2010 as overfished and undergoing overfishing under Sustainable Fisheries Act (SFA) standards. The most recent stock assessment was completed in 2010 (with 2009 as the last year of data included), and results indicated that the stock off the coast of the Southeastern US was reaching an overfished condition and that overfishing was occurring (SEDAR 24). An updated SouthEast Data, Assessment, and Review (SEDAR) stock assessment is scheduled for 2014.

POPULATION SIZE AND DISTRIBUTION

Red snapper occur from North Carolina to the Yucatan Peninsula, including the Gulf of Mexico (Nelson and Manooch 1982; Manooch and Potts 1997). On the continental shelf off South Carolina, red snapper have been collected at depths from 7 to 74 m (23 to 243 ft.) (SCDNR-MARMAP data, see Figure 1).

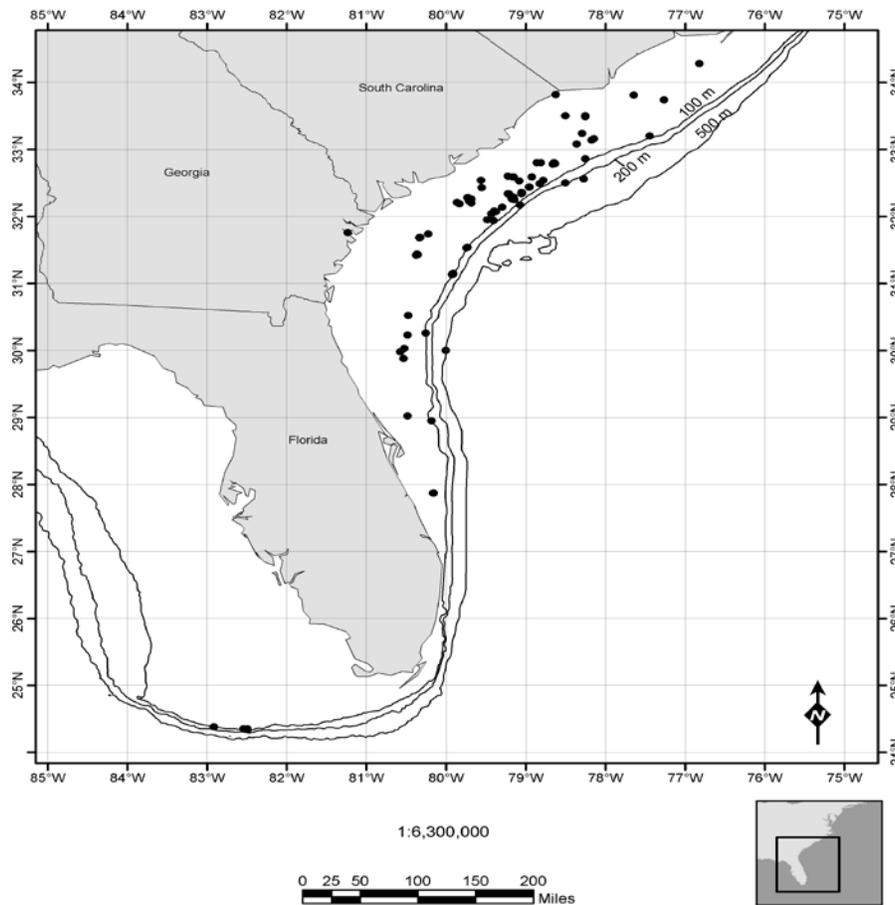


Fig. 1: Red snapper collection sites

An estimate of absolute red snapper population size in South Carolina is not available. South Carolina's annual landings of red snapper have been highly variable. The commercial fishery landings of red snapper have averaged 42,000 pounds per year from 1979 to 2005 (NOAA Fisheries 2013 online data; see Figure 2), while recreational landings in South Carolina have averaged nearly 19,000 pounds per year from 1983 to 2008 (NOAA Fisheries 2013 online data). However, the landings of red snapper have been decreasing since the mid 1990's. The sharp decline in commercial and recreational landings after 2009 are a function of management measures—to close the fishery—that were imposed in 2009.

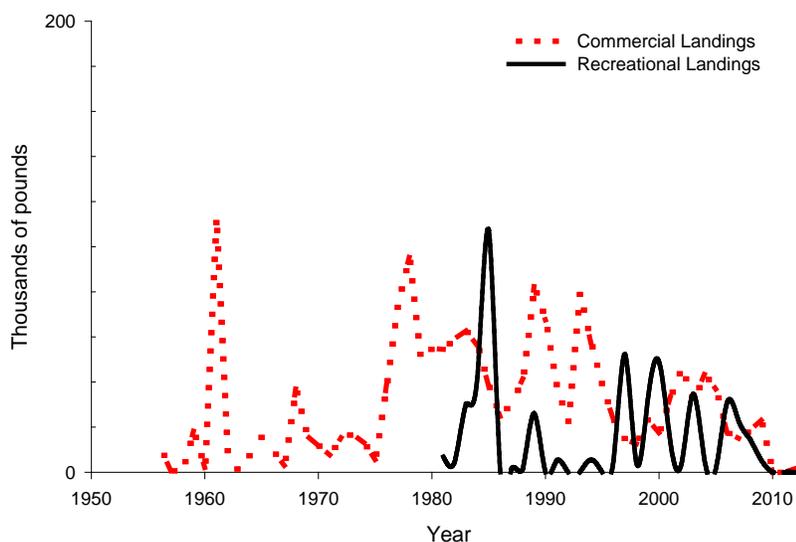


Fig. 2: Commercial Landings of Red Snapper in SC.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

In offshore waters, red snapper occupy natural and artificial reefs including wrecks, hard bottom, live bottom, shelf-edge scarps, ledges, sponge/coral habitat, and other habitats that provide vertical relief above the bottom. Small red snapper, less than age one, are rarely captured by commercial or recreational fishing gear in the Atlantic waters of the Southeastern United States (Stender and Barans 1994; SEAMAP 2000). In the Gulf of Mexico, red snapper juveniles are frequently taken as by-catch in shrimp trawls (Bradley and Bryan 1975; Gutherz and Pellegrin 1988).

CHALLENGES

Red snapper are considered to be overfished and are experiencing overfishing (SEDAR 24, NOAA Fisheries 2013). Because red snapper are long-lived (57 years, Allman et al. 2002), slow growing, and late maturing (it takes five years to reach 100% maturity in females (White and Palmer 2004)), overfishing is a primary concern as such activity is likely to skew age compositions and reproductive ability of the population. Red snapper are frequently caught in deep water, 30+ m (98+ ft.); if caught from these depths and subsequently released, mortality is high due to pressure changes.

CONSERVATION ACCOMPLISHMENTS

The red snapper fishery off South Carolina is managed in federal waters by the South Atlantic Fishery Management Council (SAFMC 2013). In the commercial fishery, a limited access permit is required. Red snapper must be landed with the heads and fins intact to facilitate enforcement of regulations. There is currently a prohibition on recreational and commercial harvest and possession of red snapper, except a brief (3-14 day) open season which occurred in 2012 and 2013. In addition, the SAFMC established Marine Protected Areas (MPA) in the region in 2009 that are closed to bottom fishing year-round

(SAFMC 2013). The scheduled SEDAR stock assessment for red snapper in 2014 will provide updated information as to the status of the population in the region.

CONSERVATION RECOMMENDATIONS

- Continue to evaluate the effects of management plans, including MPA's, on red snapper stocks.
- Continue to monitor red snapper populations via fishery independent sampling.
- Initiate studies of the early life history, juvenile habitat preference, and spawning locations for red snapper.

MEASURES OF SUCCESS

The SCDNR-MARMAP program that annually monitors relative abundance, length frequency, size and age at maturity of reef fishes can detect changes in those parameters that result from management efforts. MARMAP is also monitoring sex ratios, which should indicate a restoration of normal sex ratios if spawning season closures and other management measures have been effective. Measurement of management success is difficult in the absence of long-term historical data that precede expansion of the fishery in the 1970s; however, MARMAP monitoring can detect changes in relative abundance, size, age, maturity and other population parameters that respond to fishing pressure or management regulations. Increases in abundance, size, size and age at maturity, sex reversal, and sex ratios with at least 20% males would indicate positive trends in the population.

LITERATURE CITED

- Allman, R.J., G.R. Fitzhugh and W.A. Fable 2002 Report of red snapper otolith aging: 2002 data summary. NMFS Southeast Fisheries Science Center, Panama City Laboratory Contribution Series 02-02. 5 pp., tables and figs. (Ref. 48779)
- Bradley, E. and C. F. Bryan III. 1975. Life history and fishery of the red snapper (*Lutjanus campechanus*) in the northwestern Gulf of Mexico: 1970-1974. Proc. Gulf Caribb. Fish. Inst. 27:77-106.
- Camber, C. I. 1955. A survey of the red snapper fishery of the Gulf of Mexico, with special reference to the Campeche Banks. Florida State Board of Conservation Technical Series No. 12:1-64.
- Gutherz, E. J. and G. J. Pellegrin. 1988. Estimate of the catch of red snapper, *Lutjanus campechanus*, by shrimp trawlers in the U.S. Gulf of Mexico. Mar. Fish. Rev. 50: 17-25.
- IGFA, 2013. 2013 IGFA World Record Book. IGFA, Fort Lauderdale, USA.
- Manooch, C.S. III and J.C. Potts. 1997. Age and growth of red snapper, *Lutjanus campechanus*, Lutjanidae, collected along the southeastern United States from North Carolina through the East Coast of Florida. J. Elisha Mitchell 113:111-122.
- Nelson, R.S. and C.S. Manooch, III. 1982. Growth and mortality of red snapper, *Lutjanus campechanus*, in the west central Atlantic Ocean and the northern Gulf of Mexico. Trans. Am. Fish. Soc. 111:465-475.
- NOAA Fisheries 2013. Fisheries Statistics. Available on line and accessed in May 2013 at:

<http://www.st.nmfs.noaa.gov/st1/>

Powles, H. and C.A. Barans. 1980. Groundfish monitoring sponge-coral areas off the southeastern United States. *Mar. Fish. Rev.* 42(5):21-35

SEDAR 24. 2010. SEDAR 24 Stock Assessment Report, South Atlantic Red Snapper, SEDAR One Southpark Circle #306, Charleston, SC 29414. 524 pp.
http://www.sefsc.noaa.gov/sedar/download/SEDAR%2024_SAR_October%202010_26.pdf?id=DOCUMENT

SAFMC 2013. . South Atlantic Fishery Management Council information accesses in May 2013 at:
<http://www.safmc.net/fishid/fmpro?-db=content&-format=default.html&-view>.

Smith, C.L., 1997. National Audubon Society field guide to tropical marine fishes of the Caribbean, the Gulf of Mexico, Florida, the Bahamas, and Bermuda. Alfred A. Knopf, Inc., New York. 720 p.

White, D.B., and S.M. Palmer. 2004. Age, growth, and reproduction of the red snapper, *Lutjanus campchanus*, from the Atlantic waters of the southeastern U.S. *Bull. Mar. Sci.* 75(3):335-360.