11 Spotfin croaker, *Roncador stearnsii*

Spotfin croaker, *Roncador sternsii*. Photo credit: B Varney

History of the fishery

Spotfin croaker were determined to be overexploited in the early 1900s and since 1915, it has been illegal to commercial take spotfin croaker. Today spotfin croaker are mostly targeted by recreational anglers fishing in bays and surf zones from beaches, jetties, and piers in southern California. Spotfin croaker may form small aggregations (usually fewer than 50 fish) in depressions or holes near shore and it has been reported that the best spotfin croaker fishing is when a “croaker hole” or a “croaker run” is found.

Estimates of recreational catch were generated by the Marine Recreational Fisheries Statistics Survey (MRFSS) from 1981 to 1989 and from 1993 to 2003. From 2004 to the present, catch estimates are produced by the California Recreational Fisheries Survey (CRFS), which benefits from an improved sampling design. Both surveys rely on an angler-intercept method to determine species composition and catch rates, coupled with a telephone survey to estimate fishing effort. Though similar methodology in general was used for each, the two sampling designs are sufficiently different that catch estimates generated from MRFSS and CRFS are not considered comparable and will be provided in separate graphs and tables below.

According to the Marine Recreational Fishing Statistical Survey (MRFSS) spotfin croaker catch has varied greatly between 1980 and 2003, from a high of 87,000 fish in 1981 to a low of 643 in 1989 (Figure 11-1).

Since 2004, the spotfin croaker catch has continued to be highly variable, ranging from 29,143 fish in 2005 to 58,123 fish in 2007 (Figure 11-2) according to California Recreational Fisheries Survey (CRFS) data. Ninety-seven percent of spotfin croaker were caught in shore modes (beach/bank [BB] and manmade [MM]) versus boat modes (party/charter boats and private/rental boats). The average estimated annual spotfin

croaker catch from 2004 to 2009 was 40,197 fish per year with catch almost evenly divided between BB and MM modes. CRFS reduced sampling levels for the BB mode in 2010 and BB and MM in 2011; therefore, the estimates for 2010 and 2011 are not comparable with the 2004-2009 estimates. Currently there is no minimum size limit for spotfin croaker; however, there is a ten fish bag limit.

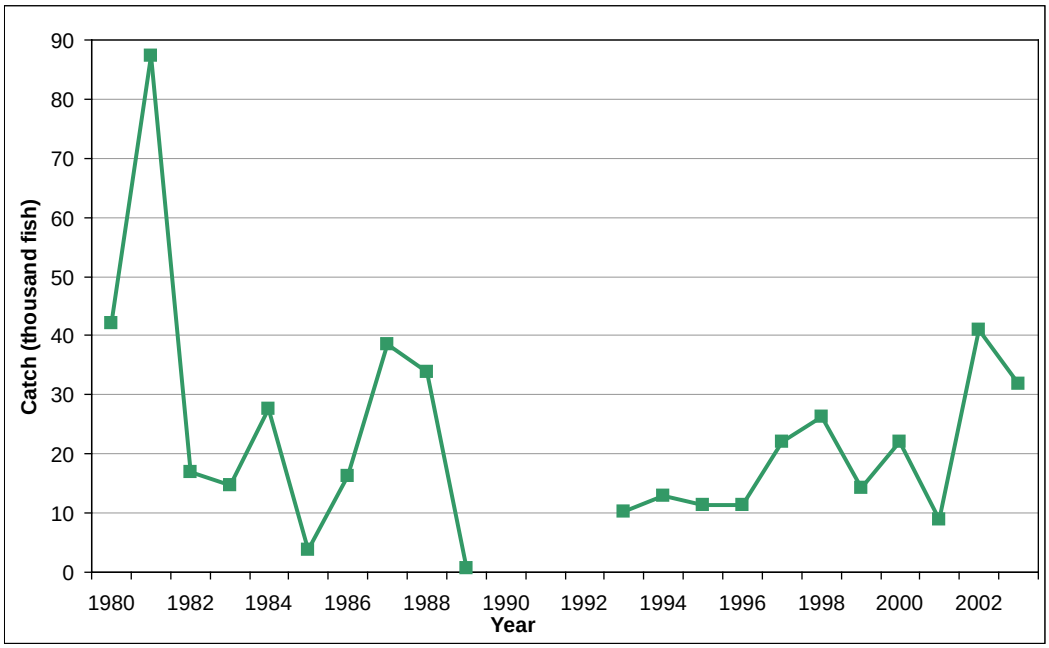

Figure 11-1. Spotfin croaker recreational catch, 1980-2003. Data source: MRFSS data, all fishing modes and gear types combined. Data for 1990-1992 are not available.

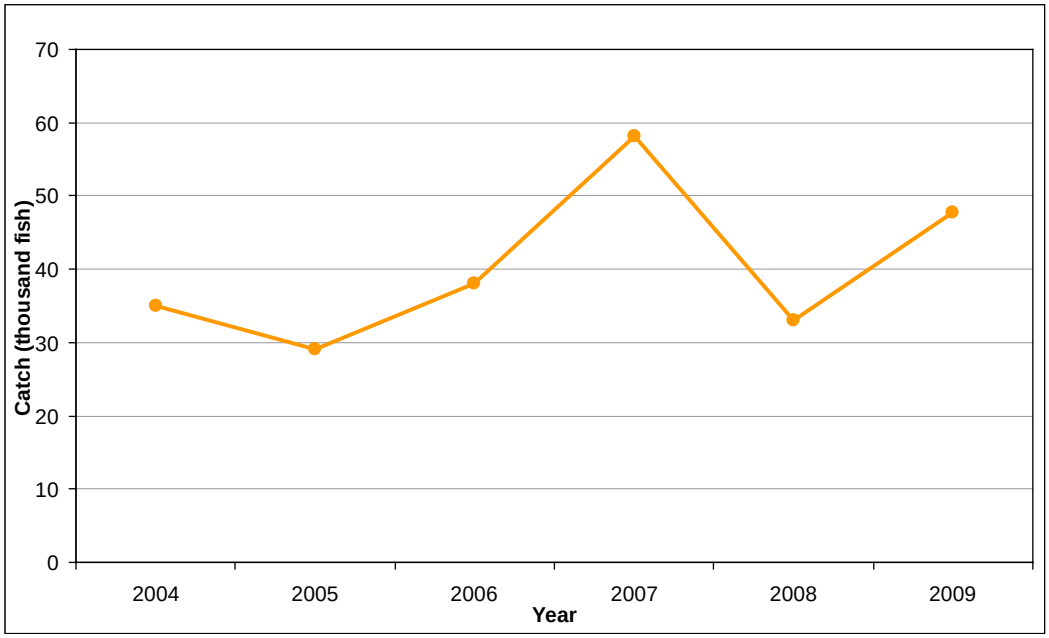

Figure 11-2. Spotfin croaker recreational catch, 2004-2009. Data source: CRFS data, all fishing modes and gear types combined. Data for 2010-2011 are not available.

Status of the Biological Knowledge

Spotfin croaker range from Point Conception, California to the southern tip of Baja California, Mexico but are most commonly found from Los Angeles Harbor, California to central Baja California, Mexico. They are a heavy bodied fish named for the distinct black spot at the base of the pectoral fin. Spotfin croaker can grow to be at least 27 inches (69 centimeters) and live to be 24 years old. They are usually a bluish silver color on their backs with wavy lines on their sides and they have white bellies. During the summer spawning season, males may exhibit golden colored pectoral and pelvic fins and gold coloring on their backs. Spotfin croaker have pharyngeal tooth plates (modified gill arches with teeth) and feed on benthic invertebrates including clam siphons and small crustaceans.

Spotfin croaker can be found from the intertidal zone to 73 feet (22 meters). They are most commonly found in water less than 30 feet deep (9 meters), primarily over sand or mud bottoms; however, they may also be found less frequently in rocky reef habitats. Spotfin croaker may be sexually segregated during the spring and summer months. A study reported male spotfin croaker utilizing primarily soft bottom, nearshore habitat while during the same seasonal period, females dominated the population inside a bay and estuary site. Spotfin croaker also show sexual dimorphism in growth rates with females growing faster than males after age three.

A recent study conducted in 2004 captured larval spotfin croaker in May, July, and September, suggesting the spawning season for spotfin croaker is at least from April to September. This is longer than previously thought. Spotfin croaker are serial spawners

and new research estimates that small spotfin croaker (8-12 inches; 20-31 centimeters) may spawn approximately 35,000-641,000 eggs in one batch depending on the size of the female. The larval duration for spotfin croaker is approximately 25 days and larval croaker spawned in May showed 30 percent slower growth rates than those spawned later in the season.

A limited tagging project conducted more than 50 years ago by the California Department of Fish and Wildlife (Department) found spotfin croaker moved extensively between Alamitos Bay and Newport Bay in southern California. Although the data showed no discernible patterns in spotfin croaker movements and only one percent of the tagged spotfin croaker were recaptured, spotfin croaker tagged in Los Angeles Harbor were recaptured as far south as Oceanside, California, a distance of 61 miles (98 kilometers). A more recent Department beach seine study conducted in southern California in 2007-2009 captured no spotfin croaker during the winter months; however, spotfin croaker were caught consistently throughout the rest of the year supporting speculation about seasonal movements. In addition, the most recent beach seine study found spotfin croaker are more abundant on lower incoming tides than at other times suggesting daily horizontal movements related to tidal flux.

Status of the Population

Data for estimating spotfin croaker abundance and density across southern California are limited. Historic impingement surveys at coastal power generating stations from 1977 to 1998 noted a declining abundance of spotfin croaker; however, a recent study found that the mean entrapment rate for spotfin croaker after 1998 was 295 percent higher than the mean annual entrapment rate for the period from 1972-1998.

Beach seine studies conducted by the Department also found increased spotfin croaker abundance in recent years. Relative to other species, spotfin croaker abundances ranked 26th in the 1960s, 17th in the 1990s, and 3rd in the 2000s. Currently there are no data to suggest the spotfin croaker population is in decline. In addition, recently restored wetlands at Bolsa Chica and Huntington Beach, in southern California may provide new habitat important for spotfin croaker.

Management Considerations

Based on the limited available data, the spotfin croaker stock does not appear to be in decline; however, a more complete understanding of the adult life history and ecology of spotfin croaker could help to refine management efforts. Spotfin croaker are rarely targeted by commercial passenger fishing vessels or private boaters, and most angler pressure is from shore based fishing modes limiting exploitation exposure. Spotfin croaker are most likely benefiting from the recent bay and estuary restoration at Bolsa Chica and Huntington Beach wetlands in southern California. These newly restored wetlands may provide increased habitat and protection for the species.

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Further Reading

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Williams JP, Claisse JT, Pondella II DJ, Medeiros L, Valle CF, Shane MA. 2012. Patterns of life history and habitat use of an important recreational fishery species, spotfin croaker, and their potential fishery implications. Mar Coastal Fish 4:71-84.

Spotfin croaker recreational landings, 1980-2003.

Year	Number of fish	Year	Number of fish	Year	Number of fish
1980	42,161	**1988**	33,877	**1996**	11,431
1981	87,321	**1989**	643	**1997**	22,074
1982	16,937	**1990**	*no data*	**1998**	26,364
1983	14,683	**1991**	*no data*	**1999**	14,233
1984	27,607	**1992**	*no data*	**2000**	21,944
1985	3,692	**1993**	10,319	**2001**	9,017
1986	16,198	**1994**	12,895	**2002**	40,967
1987	38,650	**1995**	11,428	**2003**	31,914

Data Source: MRFSS data, all fishing modes and gear types combined. Data for 1990-1992 are not available.

Spotfin croaker recreational landings, 2004-2009.	
Year	**Number of fish**
2004	35,066
2005	29,143
2006	38,129
2007	58,123
2008	32,971
2009	47,749

Data Source: CRFS data, all fishing modes and gear types combined. Data for 2010-2011 are not available.