



Female sheephead (right) transition into males (left), which can grow to 40-pounds and live 50 years



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## CALIFORNIA SHEEPHEAD (*SEMICOSSYPHUS PULCHER*)

Photos by Ashley Knight

**A**n important and commonly encountered member of the kelp forest and rocky reef ecosystems, the California sheephead has a relatively broad range, extending from Monterey Bay, well into the subtropical waters of southern Baja California and around into the Sea of Cortez, where they overlap with the related Mexican hogfish.

Typical of the wrasse family (*Labridae*), sheephead mature as females and transition into males later in life (protogynous hermaphrodites). The transformation of the gonads from female to male is also associated with changes in morphology and color patterns, with males taking on a protruded black head and tail separated by a red mid-section. Females lack the protruded head morphology and are uniformly pink, while young of the year are orange with a white stripe and black spots along the dorsal region.

Females begin to mature between three and six years of age and spawn multiple times over the spawning season. Large males defend spawning territories where they court individual females within a harem, while deterring smaller males from the territory. Spawning season is thought to occur from July through September, though spawning has been observed in captive sheephead from April through October. Age of sex change is highly variable, and timing is dependant upon several factors, including localized sex ratio (how many males are in proximity) and the size of the mature males in the area. Large males may reach 50 years of age and weights exceeding 40 pounds.

The strong jaw, bony mouth, and large canine-like teeth are indicative of

the sheephead's ability to consume a crunchy diet. Sheephead feed predominantly on hard-shelled invertebrates, including mussels and a variety of other mollusks, crabs, urchins, and lobster. At night they move into crevices and caves, where they encase themselves in a mucus cocoon to mask their scent from predators during periods of reduced metabolic activity.

Although not often targeted directly, sheephead have always been a welcome catch of recreational fishers, and they make up a considerable percentage of the catch aboard inshore commercial passenger fishing vessels, which take an average of 28,000 fish annually. Recreational sheephead catches typically exceed commercial harvest levels, though commercial catch rates have increased dramatically as a result of the live-fish fishery. Following a peak harvest of 366,000 pounds in 1997, live fish trapping was somewhat curtailed through increasing regulations. The total allowable sheephead harvest is currently set at 205,000 pounds annually, with 63 percent of the catch allocated for the recreational fishery and the remaining 75,000 pounds broken into two-month cumulative trip limits for the commercial fishery. Additionally, a 12-inch minimum size limit recently went into effect to reduce the number of imma-

ture sheephead harvested by live-fish trappers and recreational anglers.

Even though we have promoted the selective harvest of males as a conservation tool for other fish and sharks, it is not recommended to selectively harvest male sheephead because the removal of large males may impair sheephead population structure. More research is needed on the cues and conditions that regulate sex change, but it is apparent that when large males are removed from their territory, the larger (more fecund) females change sex, thereby reducing overall egg production for the population.

Limited fishery data for this species does not indicate that stocks are threatened; however, it may be the case that unique fishery management techniques should be explored to account for the sheephead's very different reproductive strategy.

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