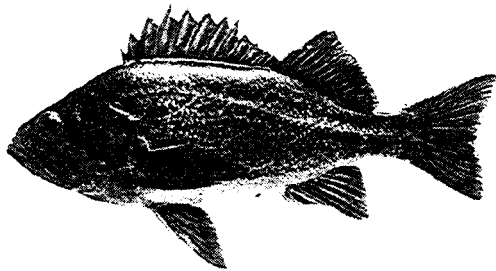


CANARY ROCKFISH

History of the Fishery

The commercial trawl catch of canary rockfish (*Sebastes pinniger*) in California has declined from over two million pounds to 183 thousand pounds in the nine-year period from 1981 to 1989. (Previous to 1981, rockfish landings were not recorded separately by species.) Eureka and Fort Bragg together contribute 88 percent of the canary rockfish trawl catch, which is only seven percent of the rockfish landings for Eureka, and eight percent for Fort Bragg. The only non-trawl commercial landings are in a small hook-and-line fishery that operates from San Francisco southward.

Canary rockfish represent a small but consistent portion of the sport catch. From 1979 to 1986, the average annual catch was 280,000 fish per year, slightly less than three percent of the total for all rockfish species. The average catch from Monterey northward was more than twice what it was to the south: 194,000 fish per year (five percent of the rockfish catch) as compared to 86,000 fish per year (one percent of the rockfish catch).



Canary rockfish, *Sebastes pinniger*.

Status of Biological Knowledge

Canary rockfish, referred to as orange rockfish in older reports, occur from Baja California to southeast Alaska. Their center of distribution is the Washington-British Columbia area, and in California they have commercial importance only as far south as Bodega Bay. Electrophoretic differences indicate that canary rockfish may have two separate subpopulations: one north, the other south of central Oregon. Canary rockfish have been caught at depths below 1,000 feet, but are taken in abundance only to 500 feet.

Canary rockfish grow rapidly until they reach maturity at about 16 inches, then more slowly to a maximum age of 60 years. Most populations have few individuals older than 20 years. For example, at one year, females average 6.7 inches and males 7.9 inches; at 4 years, females are 13.4 inches and males 13.8 inches; by age 12, females average 20.4 inches and males 19.7 inches. By age fifty they have added little length (females = 22.4 inches; males 21.2 inches.)

Females begin to mature sexually at 10.6 inches, reaching 50 percent maturity at 17.3 inches, and 100 percent maturity at 21.2 inches. Males begin to mature at 11 inches, reaching 50 percent maturity at 15.7 inches, and 100 percent maturity at

17.7 inches. A 10.6-inch female carries about 69,000 eggs; a 17.3-inch female about 489,000 eggs; and a 21.2-inch female about 1,113,000 eggs.

Canary rockfish are viviparous, meaning that the females bear free-living young and contribute some energy to their young while they are inside the mother. Males fertilize the females around December, and the females hold their young until December to March. Pelagic juveniles occur in the upper 100 feet of the surface waters from April to June. It is assumed that the juveniles descend to benthic habitats after mid-June.

Adult canary rockfish feed primarily on euphausiids. Next in importance as prey are fish: mainly myctophids and adult shortbelly rockfish which are most abundant in fall and winter diet. Gelatinous zooplankton and associated hyperiid amphipods are common prey, but are a minor part of the diet. Pelagic juvenile canary rockfish feed on copepods, and euphausiid eggs and larvae.

Predation on canary rockfish is most severe during the pelagic larval and juvenile stages. Juveniles (one to three inches) are commonly found in the stomach contents of chinook salmon. Undoubtedly other predators of juvenile fish (other fishes, mammals and birds, including the common murre) prey on juvenile canary rockfish. After the juveniles descend to the benthos and become adults, they are much less vulnerable to predators.

Status of Population

The canary rockfish catch has declined sharply during the last ten years, particularly in Eureka. The mean length of canary rockfish has declined approximately 10 percent during this period at both Eureka and Fort Bragg. While estimates of population size or exploitation rates for canary rockfish in California waters are unavailable, these declines warrant increased surveillance of this species.

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