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Relative abundance and health of demersal fish species on the southern California shelf in 1994

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ABSTRACT

Numerous local studies of demersal fish populations have been conducted off the southern California coast during the last 25 years, but the populations have not been described synoptically. This study describes the distribution, relative importance, and health of dominant fish species in the first synoptic survey of the southern California mainland shelf. Fish were collected by 7.6-m head rope semiballoon otter trawls from 114 stations at depths of 10-200 m from Point Conception, California, to the United States-Mexico international border in July- August 1994. Species were identified, counted, measured (length), examined for anomalies, and weighed. Eightyseven fish species from 34 families were collected; rockfishes and flatfishes were most diverse. More species were common (i.e., widely distributed) than were abundant or high in biomass. Overall, Pacific sanddab (*Citharichthys sordidus*), plainfin midshipman (*Porichthys notatus*), California halibut (*Paralichthys californicus*), slender sole (*Lyopsetta* (= *Eopsetta*) *exilis*), Dover sole (*Microstomus pacificus*), and white croaker (*Genyonemus lineatus*) were among the top three species in either areal coverage, total abundance, or total biomass. Pacific sanddab was the most widespread and abundant species, and was second (after California halibut) in biomass. Species rankings varied by areal coverage, abundance, and biomass for the entire mainland shelf, geographic regions, depth zones, and wastewater influence areas. Anomalies were found in 197 of 18,912 fish, with pigment anomalies and parasites being most prevalent; epidermal tumors, lesions, and fin erosion occurred in 17 fish. In the 1970s, tumors, fin erosion, lesions and skeletal deformities were prevalent in locally contaminated areas, but these anomalies were rare and scattered along the mainland shelf in 1994. The 1% anomaly rate likely represents background conditions. Regionwide, demersal fish populations were relatively healthy, with notable decreases in anomalies since the 1970s.

Full Text

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