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# Historical trends in nearshore croaker (family Sciaenidae) populations in southern California from 1977 through 1998

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### ABSTRACT

Although croakers (Sciaenidae) are important members of the nearshore environment, most of the knowledge about their population trends has come from changes in commercial fishery landings and recreational fishery catches. However, data from these sources may misrepresent population trends if fisheries target different species or areas at different times. The objective of this study is to use fisheries-independent data from impingement surveys at coastal power generating stations to describe historical trends in sciaenid populations in southern California. Fish samples were collected in weekly impingement surveys at five coastal power generating stations off southern California from Ventura to San Onofre, California, from 1977 to 1998. Fish were collected from protective screens in incurrent cooling water over a 24-h period, counted, measured (up to 200 fish per species), and weighed by species. During the 21-year period, sciaenids accounted for 68% of the fish abundance and 53% of the fish biomass collected in these surveys. Seven species of sciaenids were collected: queenfish (*Seriphus politus*), white croaker (*Genyonemus lineatus*), yellowfin croaker (*Umbrina roncador*), black croaker (*Cheilotrema saturnum*), California corbina (*Menticirrhus undulatus*), white seabass (*Atractoscion nobilis*), and spotfin croaker (*Roncador stearnsii*). Queenfish abundance was more than 10 times that of white croaker, the second most abundant species, and more than 1,500 times more abundant than spotfin croaker, the least abundant species. Although most species were represented by juveniles and adults, queenfish and white croaker catches were dominated by juveniles, and all white seabass were juveniles. Historical trends in catch-per-unit-effort values (i.e., abundance and biomass per million gallons of filtered water) showed that queenfish abundance was relatively stable during this period, although its biomass decreased. The abundance and biomass of most species were higher in the 1970s, but yellowfin croaker was most abundant in the 1980s. These historical trends suggest a strong relationship to warming ocean conditions during the 1980s and 1990s. Although yellowfin croaker abundance and biomass were higher during the warmer period, most species catches decreased during this period. All species showed relatively minor seasonal fluctuations.

### Full Text

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