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Fin erosion among fishes collected near a Southern California municipal wastewater outfall (1971-82)

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ABSTRACT

In the Southern California Bight, fin erosion is most frequently encountered among fishes collected near municipal water outfalls. This paper presents an analysis of the trends in the incidence of fin erosion among fishes collected by otter trawls near Los Aneles from 1971 through 1982.

About 24% of the 122 species of fish and 9% of the more than 170,000 individuals collected had the disease. Flatfish (Pleuronectidae, Bothidae, and Cynoglossidae) and rockfish (Scorpaenidae) accounted for 66% of the affected species and 99% of the affected individuals. Dover sole (Pleuronectidae: *Microstomus pacificus)* accounted for 89% of the affected individual.

The incidence of fin erosion was highest close to the outfalls and declined with increasing distance. The number of species with the disease declined from 1971 to 1982. The incidence of the disease also declined in two of the three most affected species (Dover sole and rex sole, *Glyptocephalus zachirus*). The contemporaneous decline in the number of species and the proportion of individuals with the disease and the decline in the surface sediment contaminant levels suggest that the magnitude of contamination and the incidence of fin erosion are directly related.

The effect of fin erosion on the Dover sole population was examined. Dover sole recruit to the study area when they are 40-50 mm SL; the incidence of fin erosion was negligible in new recruits but increased rapidly with increasing fish size. No significant differences were detected in the length-weight relationships or size-at-age data between Dover sole with and without the disease. Survival rates of Dover sole with and without fin erosion were similar until age 3; thereafter, the survival rate of diseased fish was significantly lower.