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Trace element anomalies in marine organisms off southern California

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ABSTRACT

Large quantities of DDT and trace metals are released annually to the coastal marine ecosystem off southern California via municipal wastewaters discharged through five major submarine outfall systems. Samples of the California seamussel, *Mytilus californianus,* and Dover sole, *Microstomus pacificus,* were collected from throughout the Southern California Bight to determine if, around these ocal point sources, contamination of the nearshore biota had occurred. Highest DDT levels in seamussels were observed in specimens collected from the vicinity of a major outfall, which, in the past, discharged effluents containing industrial wastes from the manufacture of this pesticide. Copper levels were significantly higher in urban seamussels than in either rural or island control specimens. In contrast, cadmium concentrations were significantly lower in the urban samples. Lead appears to be a wide-spread contaminant of the southern California coastal region. Concentrations of chromium were highest in rural sea mussels and silver concentration were highest in urban specimens. No significant differences in the nickel and zinc levels were observed between sea mussels from any of the three regions. Similarly, no significant enhancements in the trace metal concentrations measured in Dover sole livers were observed despite the close association of the specimens with highly contaminated sediments.