

SCCWRP #0237

Chronic effects of contaminated sediments on the urchin *Lytechinus pictus*

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ABSTRACT

The urchin, *Lytechinus pictus*, one of the most abundant species on the mainland shelf off southern California, was exposed to three of the most contaminated sediment types in the region and a control (reference) sediment. Mortality, growth, gonad production and bioaccumulation were measured in the laboratory for 60 d in flow-through experiments. Significant mortality (49%) occurred in Santa Monica Bay sludge outfall sediment. Growth rates were significantly reduced in sediments from Los Angeles Harbor, Palos Verdes sewage outfall Santa Monica Bay sludge outfall. Both male and female gonad production as significantly decreased in the Santa Monica Bay sludge and Palos Verdes outfall sediments. Gonads accumulated up to 12.6 ppm DDTs and 7.4 ppm polychlorinated biphenyls but decreased in concentrations of Zn, Cu, and Cd. The biological effects measured could have been caused by several types of contaminants and were significantly correlated with many of the contaminants measured in the sediments.

Keywords—Chronic effects Contaminated sediments Sediment toxicity *Lytechinus pictus*
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