

SCCWRP #0746

## Regional assessment of marine and estuarine sediment toxicity in Southern California, USA

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### ABSTRACT

Sediment toxicity was investigated at 222 stations in the Southern California Bight (SCB) during 2008. This represented the first time that assessment methods established by California's new Sediment Quality Objectives program were employed in a survey of this scale. The goal was to determine the extent and magnitude of sediment toxicity in the SCB, how toxicity compared among specific environments, and whether toxicity has changed over the last decade. Two toxicity tests were used: the 10-day amphipod whole sediment survival test with *Eohaustorius estuarius* and a 48-h embryo development test with the mussel *Mytilus galloprovincialis* exposed at the sediment–water interface. Less than 1 % of the area of the SCB was found to be toxic to the amphipod test. No toxicity was found in offshore stations, but 14 % of embayment areas were toxic to the amphipods. The mussel test identified 13 % of the embayment areas to be toxic. Estuary and marina locations had the greatest areal extent of toxicity for both tests. The two toxicity methods agreed that sediments were not toxic at over half of the stations tested. The mussel test showed a greater magnitude of response than the amphipod. Sediment toxicity was shown to have declined in both extent and magnitude from levels measured in 1998 and 2003.

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