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Contaminated, Effluent-Affected Sediment on the Continental Margin near Los Angeles, California (abstract from talk): EOS Trans. AGU, 76(3), Ocean Sciences Meeting Supplement OS1, 1996.

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Discharges of suspended solids and sediment-borne pollutants, including DDT and PCBs, through an ocean outfall system on the Palos Verdes shelf have produced a fine-grained, contaminated sediment deposit. Reductions in solids and contaminant discharges since 1971 have resulted in a two-layered deposit, consisting of less contaminated material overlying a horizon of heavily contaminated, organic-rich sediment at subsurface depths of 5 to 35 cm. Very-high-resolution subbottom profiling, sidescan-sonar imagery, sea-floor photography, and laboratory measurements on core samples from approximately 60 stations were conducted to map and characterize the effluent-affected sediment. Results were entered in a geographic information system (GIS) to allow manipulation of data and calculation of the bulk characteristics of deposit. The body of effluent-affected sediment has a volume of approximately 9 million cubic meters and a thickness between 5 cm and 60 cm. The body extends from approximately 35 m on the continental shelf down the continental slope to a water depth of at least 500 m. Practically all of the deposit is contaminated with DDT and PCBs. Within the deposit, concentration levels of p,p'-DDE (the dominant isomer of DDT) are typically greater than 1 ppm and range as high as several hundred ppm. The footprint of DDT-contaminated sediment, delimited at the 1 ppm concentration level of p,p'-DDE, covers a seafloor surface area in excess of 40 square kilometers. The mass of total DDT per unit area was integrated using the GIS to yield a mass of total DDT for the entire Palos Verdes Margin in excess of 100 metric tons.

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last modified 1996