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Stormwater Runoff on Santa Monica Bay: Toxicity, Sediment Quality, and Benthic Community Impacts

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ABSTRACT

Results from the initial year of a three year study of the effects of stormwater in Santa Monica Bay are described. Surface water and sediment samples were collected for analysis following four significantly-sized storm events in January through March, 1996. Toxicity was present in water samples offshore of Ballona Creek and was proportional to the concentration of runoff in the plume. Changes in sediment characteristics, such as grain size and TOC, were evidence offshore of both Ballona and Malibu Creeks. Not only were the changes in sediment characteristics temporally stable (similar patterns observed after storms and during dry periods), but there was a gradient of change decreasing both upcoast and downcoast away from each creek mouth. Sediment contaminants, such as lead, total DDT, total PCB, and total PAH, were elevated at stations directly offshore Ballona Creek compared to sediments at similar depths offshore Malibu Creek. The first year's results have not detected significant stormwater-related change in benthic infaunal community assemblages or sediment toxicity in the vicinity offshore the discharge of either creek.

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