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**POTENTIAL IMPACTS FROM SHORT-DURATION EXPOSURES TO STORM WATER RUNOFF ON THE
ROCKY INTERTIDAL COMMUNITY OF THE LA JOLLA ASBS AND IMPLICATIONS FOR PROTECTING
BENEFICIAL USES**

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ABSTRACT: As part of a larger study for the City of San Diego, Weston Solutions assessed the impacts of storm water on the rocky intertidal biological community in the La Jolla Area of Special Biological Significance (ASBS), a designated marine preserve. The assessment used a triad approach: water chemistry, toxicity to native marine species, and biological surveys. Conditions during a storm event at the La Jolla ASBS were compared to a coastal reference site (Cabrillo National Monument), which is not influenced directly by storm water runoff. Water samples were collected for chemical and toxicological analyses at the La Jolla site over the course of a storm event (i.e., pollutograph) directly from a storm drain outfall as well as from the ocean receiving waters in the ASBS rocky intertidal habitat. Storm water samples were used in the laboratory to mimic the exposure to storm water that marine test species (e.g., abalone, sea urchins, diatoms, bivalves, and mysid shrimp) would experience over a tidal cycle (i.e., 6-h storm water exposure followed by a seawater flush for the duration of the test). Chemistry results showed that, during low tide, concentrations of pyrethroid pesticides and some metals at the La Jolla site were similar to those in storm water runoff and greater than LC50s of native marine organisms. Salinity at the La Jolla site was less than 3 ppt in the receiving waters during low tide, but never fell below 32 ppt at the reference site during the same storm event. Toxicity results indicate that short-term exposure (6 hours) to storm water runoff is toxic to marine organisms and exposure to fresh water during a storm may have more of an impact than exposure to pesticides and metals associated with the storm water outfall. Biological surveys showed distinct differences between the La Jolla ASBS and reference sites, possibly reflecting the long-term exposure to storm water runoff over several decades. The results have important implications for managing storm water discharges to ocean receiving waters and the ASBS with respect to new regulations designed to protect the beneficial uses of this important coastal habitat.

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