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Assessing water quality in Marine Protected Areas from Southern California, USA

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ABSTRACT

Despite the regulatory mandate to maintain “natural water quality”, there are P271 storm drain discharges that potentially threaten the 14 designated marine water quality protected areas in Southern California called Areas of Special Biological Significance (ASBS). After sampling 35 site-events, the geomean concentrations of total suspended solids, nutrients, total and dissolved trace metals, and polycyclic aromatic hydrocarbons in the ocean following storm events were similar between reference drainages and ASBS discharge sites. Concentrations of chlorinated hydrocarbons were nondetectable and no post-storm sample exhibited significant toxicity to the endemic purple sea urchin (*Strongylocentrotus purpuratus*) near ASBS discharge sites. A reference-based threshold was developed and, despite the similarities in average concentrations, there were some individual ASBS discharge sites that were greater than reference background. Cumulatively across all ASBS, the constituents that were most frequently greater than the reference-based threshold were nutrients and general constituents, followed by dissolved and total trace metals.

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