

## Characterization of stormwater toxicants from an urban watershed to freshwater and marine organisms

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### INTRODUCTION

Stormwater samples were collected from Chollas Creek, a highly urbanized watershed in San Diego, California, that discharges directly to San Diego Bay and tested using one freshwater species (*Ceriodaphnia*, water flea) and two marine species (*Strongylocentrotus purpuratus*, purple sea urchin; and *Mysidopsis bahia*, mysid shrimp). No two species responded similarly after exposure to urban wet weather discharges. *Strongylocentrotus* was extremely sensitive to stormwater, exhibiting responses during every storm at concentrations as low as 6–12% stormwater. In contrast, *Mysidopsis*, exhibited no response to stormwater for any of the storms sampled. *Ceriodaphnia* exhibited intermediate toxic responses; two of three samples were toxic at relatively high concentrations of 50–100% stormwater. Toxicity identification evaluations (TIEs) were conducted on each species to determine the toxic constituent(s). Organophosphate pesticides, most likely diazinon and chlorpyrifos, were responsible for the toxicity observed in *Ceriodaphnia*. Trace metals, most likely zinc and copper, were responsible for the toxicity observed to the sea urchin,

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