

Wet and dry weather toxicity in the San Gabriel River

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ABSTRACT

The lower San Gabriel River is an urban watershed located on the border of Los Angeles and Orange Counties. It has a diversity of potential pollutant sources including five water reclamation plants (WRPs) that discharge treated wastewaters and more than 100 storm drains that discharge largely untreated urban runoff to the river. The goal of this study was to assess the magnitude of toxicity to *Ceriodaphnia dubia* throughout the lower San Gabriel River watershed during wet and dry weather, identify the responsible toxicants, and compare the magnitude of toxicity over time to evaluate the effectiveness of previous watershed management actions. Wet weather runoff was sampled from sites located at the end of the four main reaches of the lower San Gabriel River; Walnut Creek, San Jose Creek, Coyote Creek, and San Gabriel River mainstem. None of the samples collected over two wet seasons exhibited acute or chronic toxicity. Dry weather samples were tested from 16 locations distributed throughout the lower watershed for up to 18 months. None of the dry weather samples from Walnut Creek, San Jose Creek, or the San Gabriel River mainstem exhibited acute or chronic toxicity. Acute and chronic toxicity was intermittently measured in the Coyote Creek tributary. Toxicity identification evaluations suggested nonpolar organic constituents, likely diazinon and perhaps surfactants, as possible toxicants. Toxicity observed in this study was significantly reduced compared to a similar study of the watershed 12 years previously, especially in the San Gabriel River mainstem. Much of the reduction in toxicity was associated with upgrades in WRP treatment. Little to no change in toxicity was observed in Coyote Creek upstream of the WRP discharge where little to no control of dry weather urban runoff had occurred.

Full Text

ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2007AnnualReport/AR07_129_138.pdf