

Characterization of Water Quality in the Los Angeles River

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ABSTRACT

The Los Angeles River is one of the most highly modified systems in the world. Dramatic modifications have successfully reduced flooding and property damage, but little of the engineered design has incorporated water quality improvements. The goal of this study was to identify sources of potential pollutants and characterize water quality along the river's seven reaches during dry weather. The three primary sources of potential pollutants included water reclamation plants (WRPs), major tributaries, and storm drain outfalls. In addition, the use of volunteers as a mechanism to collect data at large spatial scales, where tremendous labor is required over short periods of time, is evaluated. The three WRPs discharged the majority (72%) of the volume flowing in the Los Angeles River during this study. Likewise, the three WRPs discharged the highest concentrations and greatest mass emissions of nutrients including nitrate, nitrite, ammonia, and total phosphate. In contrast, 66 flowing storm drains and 6 flowing tributaries had the highest concentrations and mass emissions of bacteria including total coliform, *E. coli*, and enterococcus. Water quality in the Los Angeles River responded to inputs of potential pollutants. Levels of nutrients were generally low upstream and downstream of the WRPs (<0.1 mg/L ammonia), but were greatest in the immediate vicinity of the WRPs (approximately 6 mg/L ammonia). Concentrations of bacteria were generally high upstream and downstream of the WRPs (ca. 104 MPN/100 mL *E. coli*), but were lowest in the immediate vicinity of the WRPs (ca. 102 MPN/100 mL *E. coli*).

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