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A regional survey of the microbiological water quality along the shoreline of the Southern California Bight

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ABSTRACT

A regional survey of the microbiological water quality along the shoreline of the Southern California Bight (SCB), from Point Conception south to Ensenada, Mexico, was conducted during August, 1998, by 36 agencies under the coordination of the Southern California Coastal Water Research Project (SCCWRP). Microbiological water quality was assessed by calculating the percentage of shoreline mile-days that exceeded bacterial indicator thresholds for total and fecal coliforms, total/fecal ratios, and enterococci. Sample sites were selected using a stratified random sampling approach, with the SCB recreational shoreline divided into six strata: high- and low-use sandy beaches, high- and low-use rocky shoreline, and perennial and ephemeral freshwater outlets. Samples were collected on a weekly basis at a total of 253 sites, beginning on August 2, 1998, and continuing for five weeks. Samples were analyzed by 22 participating laboratories using their normal methods (multiple tube fermentation, membrane filtration, Colilert®, and/or Enterolert®). All laboratories met testing criteria established through intercalibration exercises and quality control check samples distributed during the sampling period. Nearly 95% of the shoreline mile-days did not exceed daily and monthly bacterial indicator thresholds, demonstrating good bacteriological water quality along the SCB shoreline. Freshwater outlets, comprised mainly of storm drains, had the poorest water quality with 60% and 40% of the shoreline miles exceeding monthly and daily thresholds, respectively. Freshwater outlets were also more likely to demonstrate exceedences by multiple indicators at a single site, and repeat exceedences at sites over the five-week period. Compared with the southern California beaches, Mexican beaches had nearly 5 times the number of exceedences for total and fecal coliforms, and nearly 8 times the number of exceedences for total/fecal ratios.

Full Text

ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/1999AnnualReport/19_ar20.pdf