



Summary of 2008 Southern California Bight Regional Monitoring Program (Bight '08)

Shoreline Microbiology Component

Significance

The vast majority of southern California beaches have good water quality. For example, more than 95% of beaches from Santa Barbara to the US-Mexico International Border met water quality criteria in the Bight '98 survey. When water quality criteria were not met, it was most often near flowing storm drains. Many of these storm drain contamination sources have been remediated by the joint efforts of state and local agencies, but a short list of chronically contaminated beaches remain. New molecular technologies based on identifying host genetic material have recently been developed specifically to aid in source identification. The shoreline microbiology survey was the first attempt to systematically identify sources at the remaining problematic beaches.

Goal

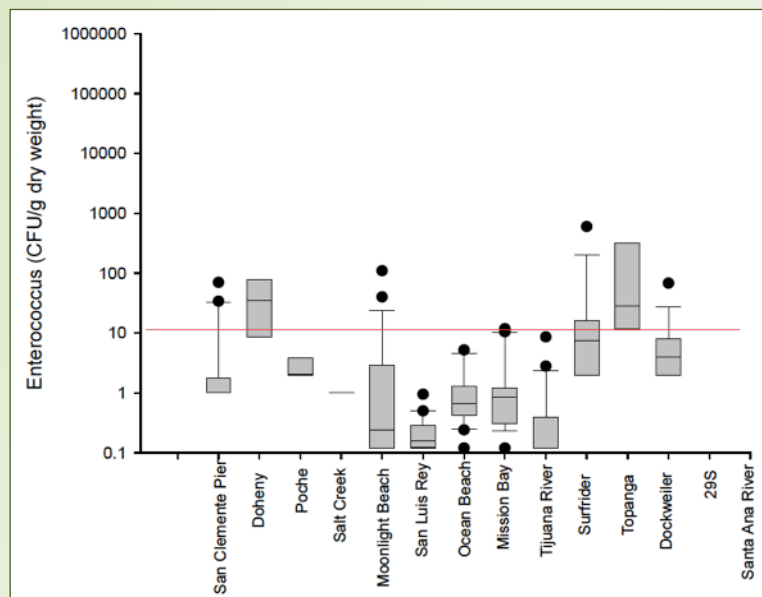
The primary goal of this component was to determine how many frequently contaminated beaches have human sources of fecal indicator bacteria such as *Enterococcus*.

Approach

Working with research laboratories around the country, Bight '08 developed and refined methods for differentiating beaches with human sources of fecal bacteria from those with non-human sources such as growth in sand or on beach wrack. In total, these methods were employed at 14 of the most frequently contaminated southern California beaches. Samples were taken in storm drains, where waves wash ashore closest to storm drains, and in the waves washing ashore 25 yards down-current from the drains.

Findings

Sand and wrack contributed some, but not all of the *Enterococcus* to the problematic beaches studied in Bight '08. Human sources of fecal indicator bacteria were found at more than half of the contaminated beaches. The human sources were confirmed at a subset of beaches using a second human marker. Now that the human/non-human marker "proof of concept" has been demonstrated, the next steps will be to refine the application and standardize the confirmation procedure for future source tracking and remediation studies. The sand and kelp methods developed through Bight '08 are now widely accepted as the industry standard. Efforts to develop standard methods for identifying human markers were also advanced.



Enterococcus levels in sand at the 14 beaches tested

Final Report

In preparation, please contact [John Griffith](#) to request a copy.

