

# Lower American River Bacteria Study

## Preliminary Summary of Phase 2 Monitoring Results

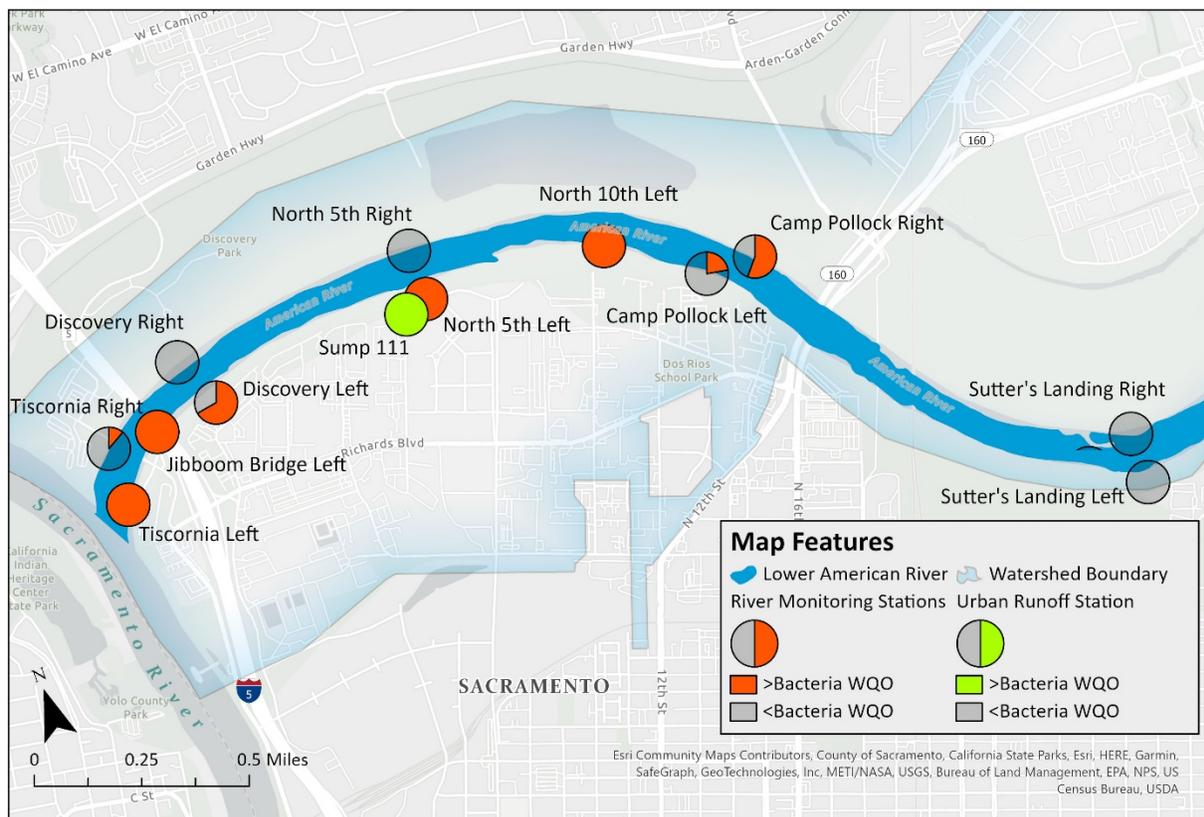
### Overview

Initial results for Phase 2 of Lower American River Bacteria Study are now available. The goals of this study are to investigate the elevated indicator bacteria levels and identify sources of fecal pollution in the lower six miles of American River. Phase 2 is focused on the 3-mile river reach from Sutter's Landing Regional Park to the confluence with the Sacramento River. Monitoring for Phase 2 of the study will include 30 sampling events conducted over two summers. This preliminary summary discusses the 2021 results from 13 sampling events. A thorough analysis of all data will be completed after the monitoring is finished in fall 2022.

### Multiple Stations Frequently Exceed Bacteria Water Quality Objectives

All samples were analyzed for the indicator bacteria *E. coli* and compared to the statewide [bacteria water quality objectives](#) developed to protect recreational users from effects of pathogens in California water bodies. Of the 12 river monitoring stations, 8 had at least one exceedance of the 6-week rolling geometric mean objective for *E. coli* and 6 stations exceeded the objective more than half the time. The monitoring stations and summary of exceedances are shown in Figure 1.

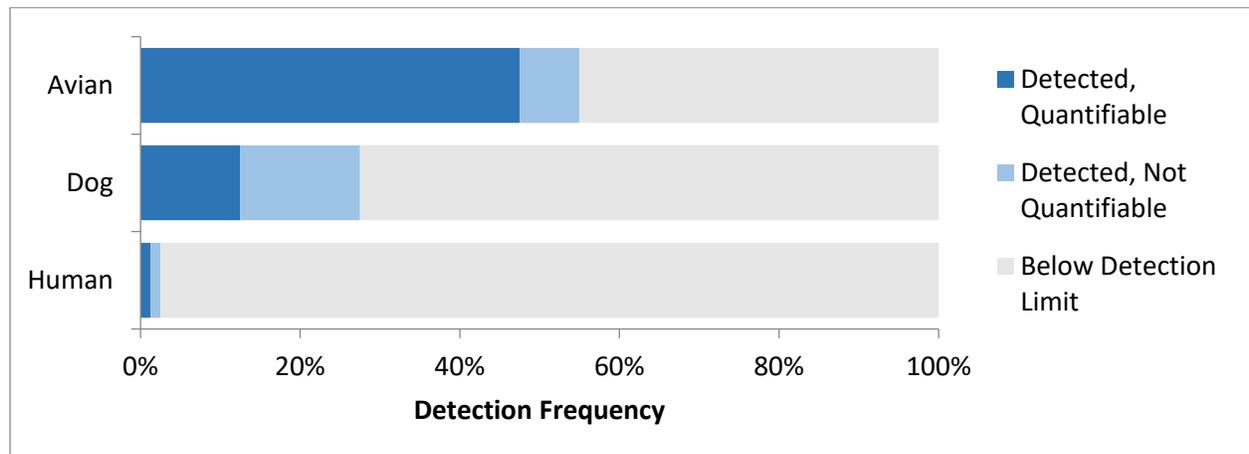
*Figure 1. Map of the Phase 2 study area showing the river and urban runoff drainage monitoring locations. Station symbols indicate the proportion of 2021 *E. coli* results that exceed the bacteria water quality objective (WQO).*



### Birds Indicated as the Most Consistent Source of Contamination

Samples with elevated *E. coli* levels were submitted for microbial source tracking (MST) analysis. MST samples were analyzed for genetic markers chosen to identify human, dog, and bird sources of fecal contamination. The percentage of detections for each marker are shown in Figure 2. Initial MST results indicate that birds are the largest and most consistent source of fecal contamination in the Phase 2 study reach. Dogs are also a consistent source of fecal contamination in some areas. Humans were not a significant or consistent source of fecal contamination during the 2021 sampling period.

Figure 2. Summary of Phase 2 MST sample results for the 12 river stations. The graph shows the percent of the 80 river samples that were detected for each source marker. Results that are detected but not quantifiable indicate the targeted marker was present but at too low a concentration to determine the amount.



### About the Study

The Lower American River flows west from Nimbus Dam to the confluence of the American and Sacramento Rivers and is a popular destination for boating, swimming, fishing, and other recreational activities. The Central Valley Water Board, Sacramento Regional County Sanitation District (Regional San), Sacramento Area Sewer District, Sacramento Stormwater Quality Partnership, and Sacramento County Regional Parks are collaborating on a phased study to identify the sources of fecal pollution in the lower 6-miles of the river.

Monitoring for Phase 1 of the source tracking study was completed in 2020. Phase 1 focused on dry weather conditions in the 3-mile reach from the upstream end of Paradise Beach to Sutter’s Landing Regional Park. Initial findings are described in the [Phase 1 Data Summary](#).

Phase 2 of the study focuses on dry weather conditions in the 3-mile river reach from Sutter’s Landing Regional Park to the confluence with the Sacramento River. Monitoring sites were selected to provide information on spatial trends and potential sources of fecal pollution. Since there is unlikely complete mixing of sources from one bank to the other given the size and hydrology of river, the 12 monitoring sites were distributed on the south (river left) and north (river right) banks of the river. In addition, Sump 111 is being monitored to characterize *E. coli* sources in dry weather urban runoff.

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