

## 3.2 PATHOGEN DATA IN SACRAMENTO RIVER BASIN

A significant quantity of data on regulated drinking water pathogens (i.e., *Cryptosporidium* and *Giardia*) was collected as part of the Coordinated Monitoring Program in the Sacramento River between 2001 and 2004. These data are plotted in Figure 3-4. In general, the samples are overwhelmed by the number of non-detects of either of the two pathogens, although *Giardia* was detected considerably more often than *Cryptosporidium*. Where detected, concentrations were very low (< 1 count per liter), although counts were marginally higher for *Giardia*. The locations with the highest concentrations observed for *Giardia* (at American River near Discovery Park and Sacramento River at Mile 44) also show higher concentrations for total coliforms and *E coli*. Although the quantity of data is too limited to draw strong conclusions, these data do show the benefit of collecting coliform data, and suggest perhaps that there might be common sources.

The pathogen data collection shown in Figure 3-4 is unique in its scope and has not been replicated elsewhere in the Central Valley at this scale. However, this sampling was discontinued in 2004 because results could not be clearly interpreted compared to numeric objectives.

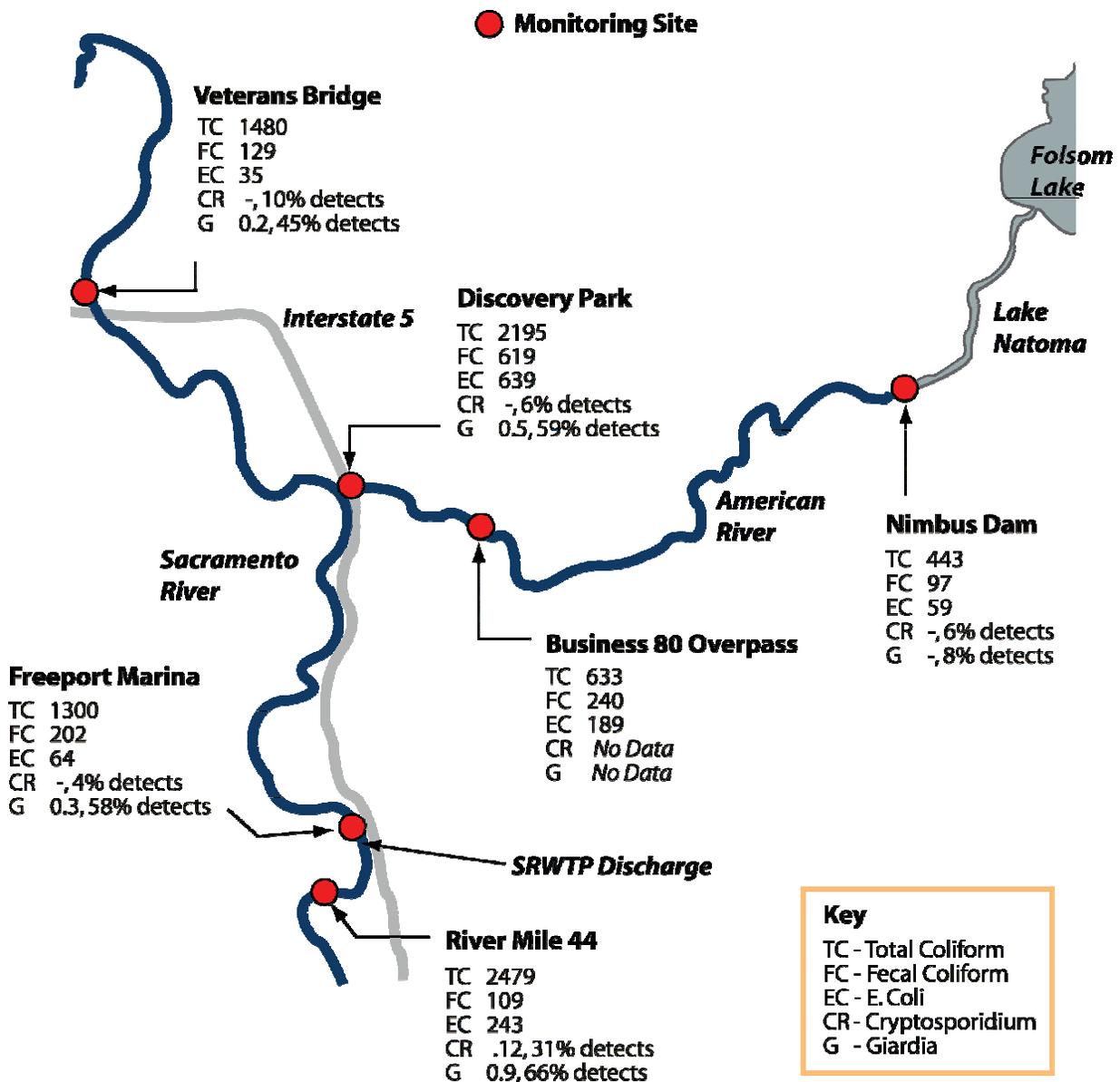


Figure 3-4. A variety of bacterial and pathogen indicators sampled as part of the Coordinated Monitoring Program on Sacramento River (CMP). Data averages are shown for total coliforms, fecal coliforms, *E. coli*, *Cryptosporidium*, and *Giardia*. A "-" indicates no average was determined.

### 3.3 DATA RANGES FOR SURFACE WATER

To provide further background and more detail on the ranges of concentrations observed for different coliform parameters across the Central Valley, a series of box plots has been prepared for all available data. All stations are shown in alphabetic order. Data from wastewater effluent and from urban runoff were excluded from these plots and are presented separately. Figures 3-5 to 3-7 show the total coliform, fecal coliform and *E. coli* concentrations across a variety of surface water locations throughout the Central Valley. Data are shown in both linear and logarithmic scales in

these plots to allow comparison of numerical values across several orders of magnitude. The plots show that the highest concentrations were observed in the discharge from Natomas East Main drainage Canal as well as several stations that were near sloughs. The former indicates the role of urban stormwater in these measurements, whereas the latter indicate the contribution of wildlife. The same pattern is seen for both total coliform and *E. coli* concentrations (there were fewer slough stations that reported fecal coliform data).