



**Santa Clara Valley  
Urban Runoff  
Pollution Prevention Program**

**WATER QUALITY  
MONITORING AND  
WATERSHED  
ASSESSMENT**

**(2<sup>ND</sup> EDITION)**

**F**rom its inception in 1987, the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP or Program) has been a regional, statewide and national leader in the collection and analysis of monitoring and assessment data used to evaluate the condition of water bodies and impacts of urban runoff. The Program's initial monitoring activities established baseline water quality conditions of runoff from various urban land uses. In addition, the Program's annual monitoring plans include assessments designed to enhance the understanding of sources and the extent of urban runoff pollution, its effects and methods for its control.

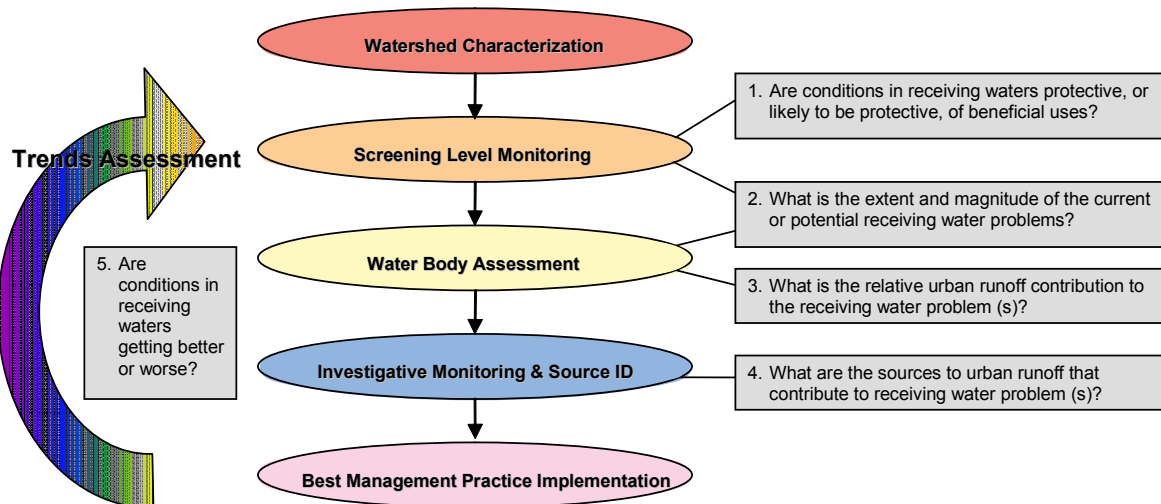


The Program conducts, manages and/or actively collaborates on a range of monitoring and assessment-related activities at varying spatial scales. These include studies designed to assess water quality and beneficial uses in local water bodies (e.g., creeks) and the San Francisco Bay, and loading studies to evaluate the proportion of pollutants entering the Bay from local tributaries. Studies on local water bodies are typically conducted through the Program's Multi-Year Monitoring Program. Monitoring activities conducted in the San Francisco Bay and pollutant loading evaluations are conducted through regional partnerships (e.g., the Regional Monitoring Program for Water Quality) for which the Program contributes financially and actively participates in the steering and technical review.

**Local Water Body Monitoring and Assessment**

**Monitoring and Assessment Process and Core Management Questions**

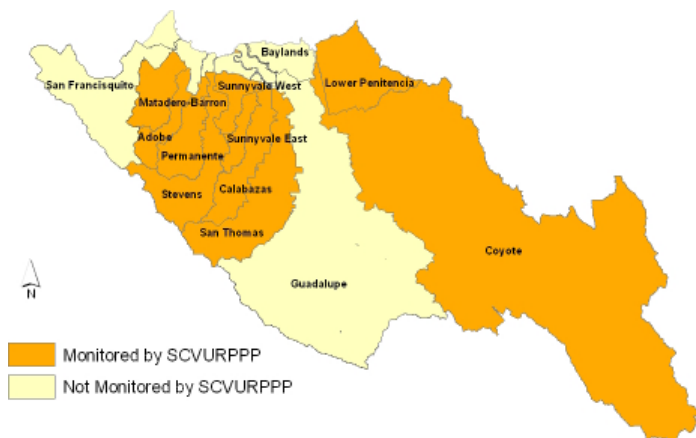
In 2004, the Program established a *Monitoring and Assessment Process* that systematically links environmental monitoring and watershed assessment. The idealized process has four steps that ultimately lead to the implementation of best management practices (BMPs) by the appropriate agencies (Figure 1). In addition, the Program has adopted five core monitoring questions to help provide focus at each step within the monitoring and assessment process. A detailed discussion of these steps can be found in the first edition of this fact sheet (January 2006).



**Figure 1. SCVURPPP Multi-Year Monitoring and Assessment Process and Associated Five Core Monitoring Questions**

**Screening-Level Monitoring Results and Conclusions**

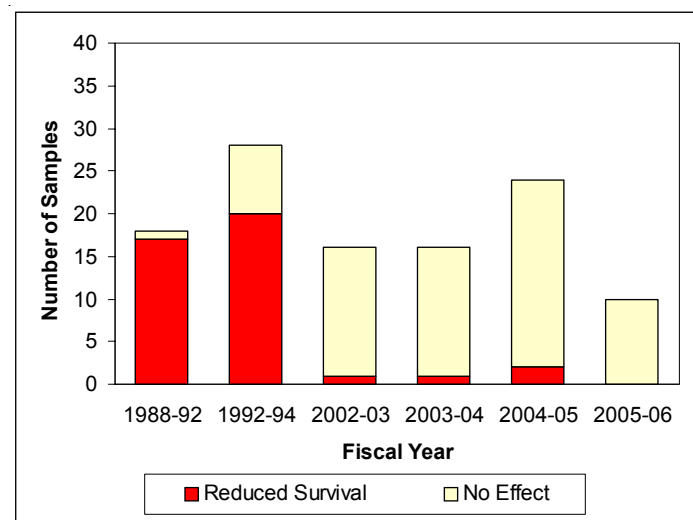
Between July 2002 and June 2006, the Program collected and analyzed screening-level water quality monitoring data from 49 creek sites located in sixteen water bodies and eight watersheds (Figure 2). Water samples were analyzed for conventional water quality parameters, chemical pollutants (metals and pesticides), aquatic toxicity and pathogen indicators. In addition, benthic macroinvertebrate (BMI) and fish bioassessments were conducted to better understand the status of aquatic life in these watersheds.



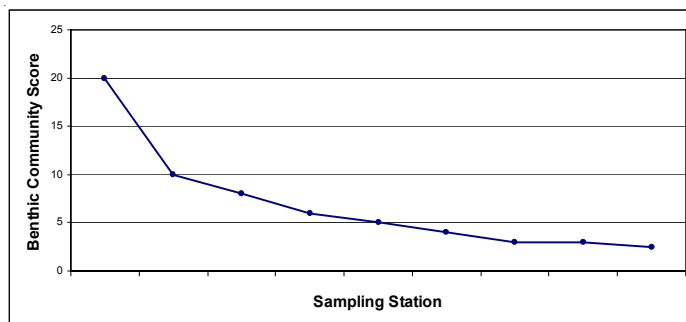
**Figure 2. Santa Clara Basin Watersheds Monitored by SCVURPPP.**

To date, screening-level monitoring results indicate that:

- Beneficial uses have only been designated for a few creeks in the Santa Clara Valley;
- Numeric Water Quality Standards are generally met for all pollutants sampled, including mercury, copper and nickel;
- Organophosphate pesticides (including diazinon) are generally not detected in creek water since the phase-out of diazinon began in late 2004;
- Acute aquatic toxicity has dramatically decreased in creek water from the mid-1990's to 2006 (Figure 3); and,
- Biological and physical integrity generally decreases in creeks as you move towards the San Francisco Bay (Figure 4).



**Figure 3. Number of creek water samples taken between fiscal years 2002-2003 and 2005-2006 that reduced *Ceriodaphnia dubia* survival (note: diazinon phase-out began in late 2004).**



**Figure 4. Conceptual illustration of reduced biological integrity in downstream stations in Santa Clara Basin Creeks.**

## Saratoga Creek Watershed Assessment

The Program is currently conducting a watershed assessment of the Saratoga Creek watershed. This watershed was previously identified as high-priority by the Water Board and may be impaired by excessive sediment production from erosion due to anthropogenic activities. There are three tasks associated with the Saratoga Creek assessment: 1) evaluate existing data to determine the status of Aquatic Life and Recreation beneficial uses; 2) evaluate potential sediment impacts to fish and habitat to determine if high priority ranking is warranted; and 3) identify potential investigative studies and/or management actions. During these tasks, the Program has analyzed results from two years of screening-level monitoring, with additional input from the following ongoing projects: 1) fish population surveys and aquatic habitat assessments at representative reaches in the watershed, and 2) riparian corridor assessment using the Unified Stream Assessment approach, developed by the Center for Watershed Protection. The Saratoga Watershed Assessment Report is scheduled for completion in early 2007.

## Index of Biotic Integrity Development

Aquatic biological integrity refers to the condition of the biological components of a water body. Because water bodies contain a variety of biological organisms (e.g., fish, amphibians, insects, algae) it is difficult to measure the condition of each. Therefore, specific categories of organisms are typically used as indicators of biological integrity.

Since 2002, the Program and other Bay Area urban runoff management programs having been collecting and analyzing aquatic invertebrates as indicators of biological integrity in local water bodies. As a next step, the Bay Area urban runoff programs, including SCVURPPP, are collaborating on the development of an Index of Biotic Integrity (IBI), which will provide a measuring stick used to better assess biological integrity at specific sites in Bay Area creeks. A draft version of the IBI is scheduled for completion in early 2007. IBI Tasks recently completed include the compilation of aquatic invertebrate data collected by local and State agencies through spring 2005; and the development of a regional aquatic invertebrate database that will be internet accessible.



SCVURPPP is an association of the thirteen cities and towns (Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, Sunnyvale) in the Santa Clara Valley, together with Santa Clara County and the Santa Clara Valley Water District. Program participants share a common permit to discharge stormwater to South San Francisco Bay.