



Santa Clara Valley Urban Runoff Pollution Prevention Program

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Integration of WMI Assessment Results into SCVURPPP Multi-Year and FY 02-03 Receiving Waters Monitoring Plans

Introduction

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) developed an 8-year monitoring plan for Santa Clara Basin (Basin) Watersheds to help the Regional Water Quality Control Board (RWQCB) characterize receiving water quality and satisfy long-term monitoring goals (i.e., status and trends monitoring, surveillance monitoring, management effectiveness monitoring and monitoring to help establish realistic standards). To help develop the plan, SCVURPPP compiled existing available information relevant to watershed assessment and monitoring to identify data gaps and to help prioritize future information needs for watersheds in the Basin.

Background

The Santa Clara Basin Watershed Management Initiative (WMI) released preliminary results from the Pilot Watershed Assessment and draft chapters from the Watershed Assessment Report (WAR) to Program staff in April 2002. Program staff compiled and reviewed the available information to assist in the development of the SCVURPPP FY 02-03 and Multi-Year Receiving Waters Monitoring Plans. This information was used to identify gaps of information necessary to make a support statement of the primary uses/interests identified by the WMI. These uses/interest included: cold freshwater habitat (COLD), preservation of rare and endangered species (RARE), water-contact recreation (REC-1), municipal and domestic water supply (MUN), and protection from flooding (PFF). Information obtained from the WMI was only relevant to Upper Penitencia Creek, Guadalupe River and San Francisquito Creek watersheds, since these were the watersheds that were chosen by the WMI for the pilot assessments.

This analysis focused on identifying general data gaps for Santa Clara Basin Watersheds and specific data gaps within Upper Penitencia Creek, since Guadalupe River and San Francisquito Creek watersheds were not considered in the SCVURPPP long-term monitoring plan. (Guadalupe River is being extensively being monitored by the SCVWD and San Francisquito Creek is being monitored by a stakeholder group lead by the San Francisquito Creek Joint Powers Authority).

Approach

Program staff obtained preliminary WMI assessment results to identify stream reaches with insufficient data for assessing the primary uses/interest. These data included: reach assessment tables (Microsoft Access database); assessment stream reaches (Arcview

shapefiles); and draft hard copy versions of the Data Gaps memo and chapters 4-6 of the WAR. The WMI reach assessment table for each of the pilot watersheds was queried for all stream segments that were identified as having insufficient data to make a support statement (identified as "N/A" in the database *certainty* field) or segments with support statements that were based on data with a high degree of uncertainty (identified as "1" or "2" in database *certainty* field). Low certainty was determined by the WMI in reaches that contained relevant data that was very limited and of poor or questionable quality. These records were used in this analysis to identify stream segments containing data gaps. Additional queries were conducted to identify stream segments with data gaps for each of the five beneficial uses/interest. These queries were joined to the assessment stream reach database in the GIS, using the common database *reach_id* field, to create spatial coverages of stream segments containing data gaps. In addition, the stream segments with data gaps were queried to characterize the percent of land use, channel type and flow regime for each of the beneficial uses/interest.

Results

The stream segments with data gaps for each of the beneficial uses/interest for the pilot assessment watersheds are shown in figures 1-5. The percent of land use type, channel type and flow regime, for each stream segment containing data gaps categorized by beneficial use is shown in Table 1.

Table 1. Percent of assessment reaches containing data gaps by land use, channel type and flow regime for each beneficial use in the Upper Penitencia, Guadalupe River and San Francisquito Creek watersheds.

Assessment Reach Characterization	Beneficial Use/Interest				
	MUN	REC1	PFF	RARE	COLD
<i>Land Use</i>					
Rural	64	62	88	71	71
Transitional	14	16	8	12	13
Urban	22	22	4	17	16
<i>Natural Channel</i>	99	99	99	99	99
<i>Flow Regime</i>					
Perennial	23	24	26	25	24
Intermittent	30	31	42	33	37
Ephemeral	46	44	32	42	38

Table 1 shows that assessment reaches containing data gaps are typically natural channels in primarily rural areas and have either intermittent or ephemeral flow regimes.

Most of the assessment reaches in Upper Penitencia Creek contained data gaps for the MUN and REC1 uses (figures 1 and 2). Data gaps for PFF interest occurred only in Dutard Creek, a small tributary to Upper Penitencia Creek (figure 3). The assessment reaches that contained data gaps for assessing RARE use were primarily in the upper reaches of Upper Penitencia Creek and Arroyo Aguague, with the exception of the lowest reach of the mainstem and Dutard Creek. Data gaps for COLD occurred in Dutard Creek and Arroyo Aguague.

Discussion

The WMI assessment reaches with insufficient data to accurately assess each of the primary uses/interests are logical areas to collect data in the future to help determine if these uses are supported or not. In addition, information characterizing the assessment reaches, such as land

use and flow regime is useful to help prioritize future monitoring efforts. The WMI assessed all reaches in the pilot watersheds for each of the primary uses/interest. As a result, many of these reaches are unlikely to support these uses. For example, many of the intermittent, rural stream reaches are unlikely to support COLD or REC1, however many of these reaches are identified as having data gaps. To prioritize data collection efforts, SCVURPPP may focus monitoring activities in stream reaches with limited data where beneficial uses are more likely to occur, such as perennial stream reaches. In addition, monitoring efforts may also target areas where anthropogenic activities may have greater impacts to beneficial uses, such as stream reaches in urban and transitional areas.

SCVURPPP has proposed data collection efforts in the Multi-Year Receiving Waters Monitoring Plan that will help address the data gaps identified by the WMI for all five primary uses/interests. These efforts include:

- REC 1: Screening monitoring of bacterial indicators, a primary indicator used by the WMI to assess REC 1, will be collected at several sampling locations for all watersheds in the Santa Clara Basin over a four-year interval. In addition, protocols will be developed and implemented for conducting stream surveys to determine the relative risk of exposure to the public.
- MUN: Screening monitoring of metals, nutrients, turbidity, and organics (pesticides, PAHs and PCBs) will be collected at selected locations for all watersheds in the Santa Clara Basin over a four-year interval. In addition, chronic toxicity testing of water will be conducted at selected locations. To the extent possible, sampling locations will be selected in reaches where drinking water supplies are being drawn.
- COLD: Bioassessment surveys using macroinvertebrates, and physical habitat assessments will be conducted at several sampling locations for all watersheds in the Santa Clara Basin over a four-year interval. Monitoring of fish populations will be conducted by SCVURPPP, in coordination with SCVWD, in stream reaches that are suspected to support cold-water fish communities if sampling permits can be obtained. In addition, SCVURPPP will be conducting focused studies that measure sediment-related impacts to salmonid fish communities in watersheds where excess sediment from anthropogenic activities may be impairing COLD beneficial use.
- RARE: Potential impacts of sediment to salmonid fish and other sensitive aquatic species that utilize similar stream reaches will be addressed in assessments of watersheds that may be impaired by excess sediment due to anthropogenic activities. Some of the sensitive species addressed in the sediment study may be included on the list of rare species developed by WMI.
- PFF: Baseline information describing geomorphic and hydrologic characteristics of stream channels in the Santa Clara Basin will be compiled and field verified to assist in the development of the Hydromodification Management Plan (HMP), as required in C.3 Provision in SCVURPPP's NPDES Permit. Data collection will focus on stream reaches that are susceptible to erosion (limited hardscape) and are impacted by increased development and land use changes.

SCVURPPP is addressing the data gaps identified by the WMI for Upper Penitencia Creek in its FY 02-03 and Multi-Year Receiving Waters Monitoring Plan. SCVURPPP data collection efforts that relate to WMI assessment of beneficial use include:

- MUN and REC1: Screening level monitoring of water and sediment chemistry, as well as bacterial indicators is planned for FY 02-03 in two urban reaches (WMI reaches 2

and 4). Both reaches divert water to percolation ponds. Future monitoring for trends in these data types is addressed in the Multi-Year Plan.

- COLD and RARE: SCVURPPP identified Upper Penitencia Creek as medium priority watershed that may be impaired by excess sediment due to anthropogenic activities and deserves further study. Studies to determine sediment related impacts to salmonid fish and other sensitive species have been identified in the Multi-year Plan. Data collection efforts will be coordinated with the SCVWD's Feasibility Study phase of its Capital Improvement Projects in Upper Penitencia Creek. These studies will focus in the upper reaches of the watershed in reaches that support salmonid fishes, which may include some of the WMI reaches that has insufficient data to assess these uses. Bioassessment surveys will be collected in Upper Penitencia Creek in the future to determine status and trends for health of benthic macroinvertebrates communities.
- PFF: Location of data collection efforts as part of the HMP have not been identified. SCVURPPP will consider collecting baseline data in Dutard Creek to satisfy C.3 requirements.

The SCVURPPP will continue to coordinate monitoring efforts with the WMI, as well as Federal, State and local agencies to meet water quality objectives.