Inventory of Santa Clara Basin Stream Studies

Prepared for the Santa Clara Basin Watershed Management Initiative

Watershed Assessment Subgroup

By

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Santa Clara Valley Urban Runoff Pollution Prevention Program
Task SC 18-05

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Introduction

Summary

The *Inventory of Santa Clara Basin Stream Studies* describes twenty-one stream-related multi-stakeholder studies and projects that are in-progress in the Santa Clara Basin. The Basin is shown in Figure 1. This inventory of stream studies was compiled as part of the Santa Clara Basin Watershed Management Initiative (WMI). It is an information tool intended to promote inter-agency awareness of environmental investigations within riparian corridors, and to facilitate coordination of related data collection and management.

Background

Initiated in the summer of 1996, the WMI provides a mechanism for all agencies, organizations, and interested individuals operating in this geographic region to develop a coordinated and approach to managing surface water resources within the Basin. The WMI is in the process of preparing a Watershed Assessment Report, and in the future will produce a comprehensive Watershed Management Plan for the Basin. The Management Plan will integrate the following issues: watershed protection and enhancement, habitat and water quality enhancement, water rights and water supply reliability, flood control, regulatory compliance, land use, and public awareness and involvement.

The Watershed Assessment Subgroup (WAS) is an entity within the WMI with a mission to provide the WMI with a solid scientific foundation for watershed planning. One of the WAS's tasks is to coordinate the WMI's data collection and data management efforts with stream monitoring studies in the Basin. The Stream Studies Inventory is a result of this task.

Purpose

The WAS sponsored this inventory to provide information that will enable the agencies and organizations directing the stream studies, and the WMI, to 1) adopt consistent data collection procedures, 2) adopt consistent data storage formats and 3) promote efficient data sharing. By communicating such procedures the Stream Studies Inventory may produce several benefits, including:

- Identification of opportunities for collaborating on data collection and database development.
- Standardization of data collection protocols that enable efficient data comparison.

Methods

The studies included in the Stream Studies Inventory were identified by WAS subgroup members and by phoning selected representatives of local agencies and organizations. This inventory is

therefore a representative, but not necessarily comprehensive catalog of ongoing stream studies in the Basin.

Agency representatives were contacted initially to explain the purpose of the Stream Studies Inventory and to identify relevant projects and contacts within their agency. Project-contacts were sent electronically both a memo that described the purpose of the WMI and Task 7.1 of the WAS Action Plan, and a draft of the Stream Studies Inventory form. The memo requested documentation for information categories in this form.

Follow-up to the memo consisted of at least two phone calls to project-contacts and email correspondences as necessary to repeat requests for documentation, request additional information, and to answer questions. Profiles of individual stream studies were sent to respective project-contacts for verification of information content. Blank spaces next to information categories indicate that project-contacts did not provide this information, but should not be interpreted to mean that such information does not exist. Verification status is noted at the end of each stream study profile and reflects information as of November 2, 1998.

Funding

The Santa Clara Valley Urban Runoff Pollution Prevention Program funded the preparation of the Stream Studies Inventory (Monitoring Task 18-05.) The inventory fulfills Task 7.1 of the WAS Action Plan (July 7, 1998) for contributing to the Watershed Assessment Report.

Glossary

Lead Agencies and/or Contracted Parties:

CDFG: California Department of Fish and Game
CCRS: Coyote Creek Riparian Station
City SJ: City of San Jose
EOA, Inc: Eisenberg, Olivieri and Associates, Incorporated
GCRCD: Guadalupe Coyote Resource Conservation District
KLI: Kinetic Laboratories, Inc.
NHI: National Heritage Institute
NMFS: National Marine Fisheries Service
NRCS: Natural Resources Conservation Service
PCC: Peninsula Conservation Center
RWQCB: Regional Water Quality Control Board
SWRCB: State Water Resources Control Board
SCBWMI: Santa Clara Basin Watershed Management Initiative
SCVURPPP: Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD: Santa Clara Valley Water District
SFEI: San Francisco Estuary Institute
SJRA: San Jose Redevelopment Agency
SWRCB: State Water Resources Control Board
TAC: Technical Advisory Committee
USACE: United States Army Corps of Engineers
USDA: United States Department of Agriculture
US EPA: United States Environmental Protection Agency
USGS: United States Geological Survey
USFWS: United States Fish and Wildlife Service
WCC: Woodward Clyde Consultants
WERF: Water Environment Research Foundation

Study Information Template

Overall Purpose: *Primarily a research or a resource management project? Is the purpose to influence policy, or is it routine compliance with existing regulations and/or policies? Is the impetus for the project to respond to actions filed by representatives outside the organization?*

Project: *Full project name and acronym if used*

Lead Agencies/Organizations: *Entities managing the project*
Funding Sources: *Names of sources funding the project*
Contracted Parties: *Entities conducting the project, including Consultants*
Contact Information:
Name: Primary contact(s) for project management and follow-up information
Organization:
Phone:
Fax:
Email:

Relevance to SCBWMI:

Goals: *Project goals*

Objectives: *Project objectives*

Study Area Watersheds: *Watershed names and if known, 4-digit RWQCB subwatershed code*

Tributaries Sampled in Watershed: *Tributary names*

Sampling Location: *We need to be able to determine x,y coordinates for sampling locations. Therefore, please provide sampling site coordinates, or methods of selecting sample points, e.g., samples are taken every ## m upstream, at specified stream confluences, below stormdrain outfalls, etc., (if a subset of outfalls are sampled, provide outfall identification numbers).*

Sampling Frequency: *What is the time interval between sampling; are samples taken every hour, day, week, month, year, every major storm event (if so, define storm event), etc.*

Field Sampling Period: *Start and finish date, or indicate if ongoing.*

Projected Study Completion Date: *Date after which data analysis and reporting will be completed.*

General Data Types Collected: *Chemical, biological, physical, social, etc.*

Detailed Data Description: *For example, pH, conductivity, number of species and individuals of species X, substrate type, public perception of project, etc.*

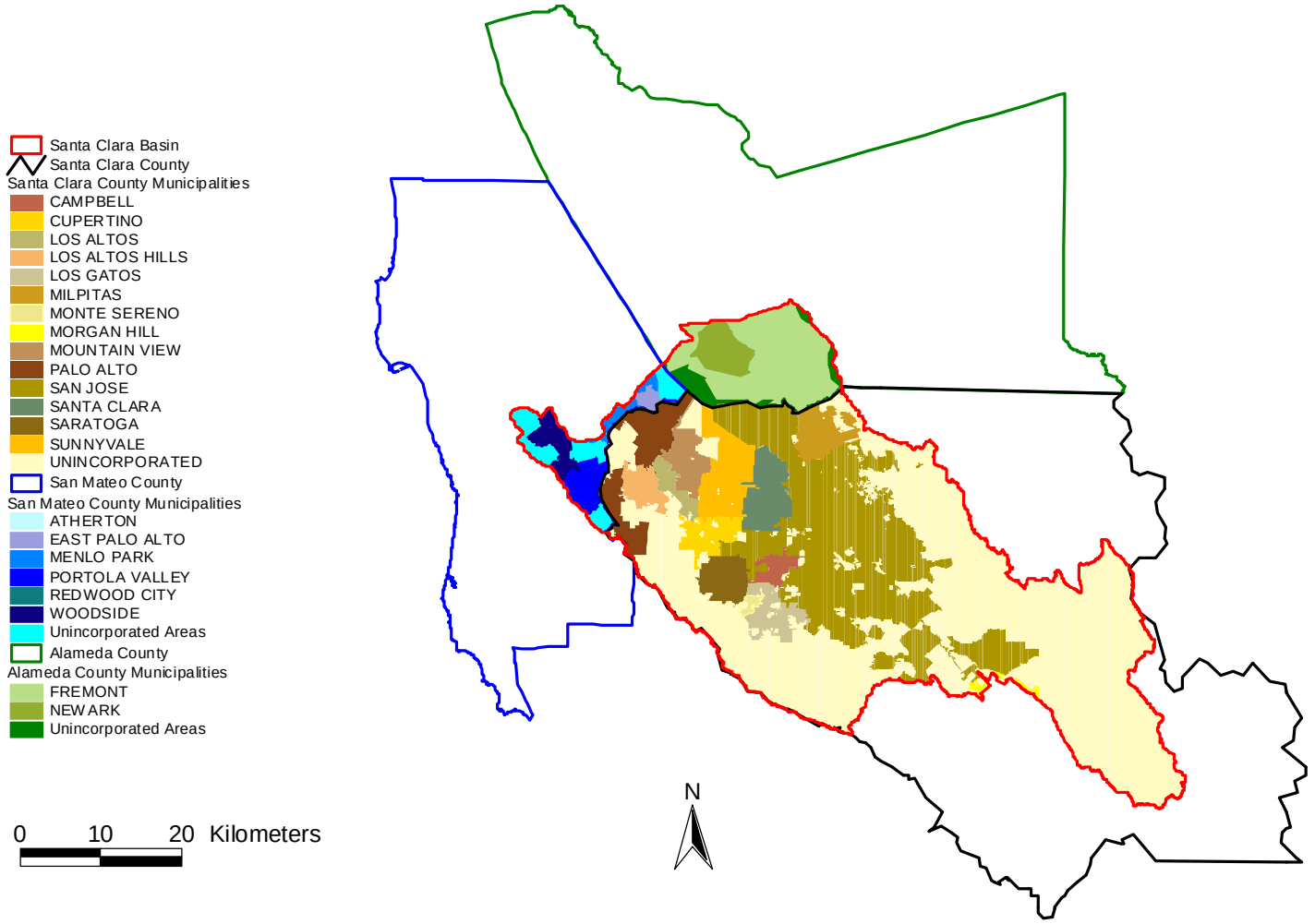
Sampling Protocols: *If using standard, published protocols, please include references. If not using standard protocols, please include description of methods.*

Data Format: *Specify whether hardcopy (tables, maps, etc.) or digital (spreadsheet, database, geographic information system, etc., including the name and version of the software used).*

Stakeholders Common to SCBWMI: *Entities involved in the study that are also participants in the SCBWMI*

Study Information Verified: *Indication of whether the study contact verified the Inventory information for the study, and verification date.*

Figure 1. Santa Clara Basin: Counties and Municipalities Within



Section 1: Resource Management Projects

Project Name: Giant Cane (*Arundo Donax)* Control Program

Overall Purpose: Resource Management

Lead Agencies/Organizations: SCVWD, NRCS
Funding Source: SCVWD
Contracted Party(s): none
Contact Information:
Name: Cindy Roessler
Organization: SCVWD
Phone: 408-265-2607 x 2294
Fax:
Email: cindroes@scvwd.dst.ca.us

Relevance to SCBWMI: Coordinated effort for resource management of an invasive species.

Goals: Initiate research and control efforts in south flood control zone of Santa Clara County.

Objectives: (1) Remove giant cane which is causing potential flood problems; (2) Determine effectiveness of different giant cane control methods.

Study Watersheds and Codes (RWQCB): Llagas (note: outside Santa Clara Basin; project geographic scope limited after initial project inquiry.)

Tributaries Sampled in Watersheds:

Sampling Location:

Sampling Frequency:

Field Sampling Period: Project put on hold for FY 98-99.

Projected Study Completion Date: Undetermined; subject to reinstating project.

General Data Types Collected:

Detailed Data Description:

Sampling Protocols:

Data Format:
Stakeholders Common to SCBWMI: SCVWD, NRCS
Study Information Verified: Yes

Project Name: Environmental Benefit and Risks of Infiltrating Stormwater (SCVURPPP BMP-2)

Overall Purpose: Resource Management

Lead Agencies/Organizations: SCVWD
Funding Source: SCVURPPP
Contracted Party(s): EOA, Inc.
Contact Information:

Name: Wendy Edde
Organization: EOA, Inc.
Phone: 408-720-8811
Fax: 408-720-8812
Email: wendyedde@eoainc.com

Relevance to SCBWMI: Example of improving stormwater management program.

Goals: Encourage pollutant reduction and mitigate increases in peak flow and total volume of runoff by promoting stormwater infiltration consistent with SCVWD policies.

Objectives: 1) Document existing Stormwater Infiltration Devices (SWIDs) in high risk locations; 2) Recommend changes to existing Industrial Inspection Performance Standards and to Industrial Inspector training; Identify and Catalogue SWIDs not covered by SCVWD Policy.

Study Watersheds and Codes (RWQCB): all watersheds within Santa Clara County.

Tributaries Sampled in Watersheds: NA

Sampling Location: NA

Sampling Frequency: NA

Data Collection Period: 8/98 – 1/99

Projected Study Completion Date: 2/99

General Data Types Collected: Engineering design

Detailed Data Description: Lists of: NOI facilities within SCVWD jurisdiction; other commercial/industrial and/or manufacturing facilities; drainage designs and practices, and stormwater runoff reduction techniques not covered by SCVWD policy. Assessment.of groundwater contamination risk from SWIDs.

Data Collection Protocols: Analyze SCVWD policy

Data Format: Maps, lists; digital format to be determined.

Stakeholders Common to SCBWMI: SCVWD, SCVURPPP

Study Information Verified: Yes

Project Name: Upper Guadalupe River Flood Control Project

Overall Purpose: Resource Management

Lead Agencies/Organizations: SCVWD
Funding Source: USACE, SCVWD
Contracted Parties: Jones and Stokes Associates, Inc.
Contact Information:

Name: Dennis Cheong
Organization: SCVWD
Phone: 408-265-2607 x2618
Fax: (408) 268 7687
Email: DennisC@scvwd.dst.ca.us

Relevance to SCBWMI: May provide useful data for the Watershed Assessment Report.

Goals: Reduce economic damage and threat to human safety caused by flooding along the Guadalupe River within the City of San Jose.

Objectives: 1) Modify the River channel to increase capacity for anticipated 100-year flow; 2) Reduce bank erosion and sedimentation; 3) Provide for long-term riparian habitat improvement; 4) Provide opportunity for future implementation of parks and continuous trail system that will go through downtown San Jose.

Study Watersheds and Codes (RWQCB): Guadalupe (5512), Alamitos (5510)

Tributaries Sampled in Watersheds: Canoas Creek, Alamitos Creek, Ross Creek, Guadalupe Creek.

Sampling Location: 8 Reaches of Guadalupe System between SR101 and Blossom Hill Rd; Canoas: from Almaden Expressway to ¼ mile upstream of Nightingale Drive; Ross: from Almaden Expressway to 700' upstream of Jarvis Avenue;

Sampling Frequency:

Field Sampling Period:

Projected Study Completion Date: 4/99

General Data Types Collected:

Detailed Data Description: Turbidity, heavy metal analysis, storm drainage outfall inventory, vegetation mapping, hazardous material sites, cultural resource sites

Sampling Protocols:

Data Format:

Stakeholders Common to SCBWMI: SCVWD, USACE, CDFG, RWQCB, USFWS, NMFS, City SJ, GCRCD

Study Information Verified: Yes

Project Name: Upper Penitencia Creek Flood Control Project

Overall Purpose: Resource Management for Flood Protection

Lead Agencies/Organizations: USACE, SCVWD
Funding Sources: SCVWD, USACE (Feasibility Study 50/50; Project Construction variable 30-50% for USACE)
Contracted Parties: USACE, SCVWD, USFWS, additional parties to be determined.
Contact Information:

Name: Randy Talley
Organization: SCVWD
Phone: 408-265-2607 x 2611
Fax: 408-268-7687
Email: randyt@scvwd.dst.ca.us
Name: Carlos Hernandez
Organization: USACE
Phone: 415-977-8590
Fax: 415-977-8687
Email: chernandez@smtp.spd.usace.army.mil

Relevance to SCBWMI: Because this flood control project is in its initial assessment phase, it could set a precedent for A) how the WMI may interface with such projects, and B) how SCVWD's recent policy amendment to "manage riparian corridors to facilitate movement from mitigation toward enhancement or restoration" may be implemented.

Goals: Reduce damages by existing and expected future flooding in the Upper Penitencia Creek watershed.

Objectives: Conduct a Feasibility Study to provide information required to develop alternative implementable remedies to reduce flood damages.
Sediment Study 12/98: Field reconnaissance to evaluate geomorphic character; Estimate sediment yield, load, and transport capacity; Assess channel stability and upstream and downstream effects of the project; Bridge scour analysis.
Hydrologic Study 12/98: Estimate flow versus frequency curve using USGS stream gauge data, for existing and future hydrologic conditions. Generate flood hydrographs. SCVWD will obtain new data in coordination with USACE and other agencies.
At later dates:
Hydraulic Design and Risk-based Studies - USACE
Social Environment Study - SCVWD
Hazardous Materials Study - SCVWD
Environmental Impact Statement and Report - SCVWD
Fish and Wildlife Studies - USFWS
Economic Studies - SCVWD
Surveying and Mapping - SCVWD

Study Watersheds and Codes (RWQCB): Coyote (Upper Penitencia 5506)

Tributaries Sampled in Watersheds: Upper Penitencia

Sampling Location: Upper Penitencia from Coyote Creek to Dorel Drive

Sampling Frequency:

Field Sampling Period: 12/98 - 12/99

Projected Completion Date: 2/01

General Data Types Collected: Physical, chemical, biological, social

Detailed Data Description: Geology, sediment (basin yield, load, and transport capacity), hydrologic (flow/frequency & flood hydrographs), hydraulic (water surface profiles, floodplains & bridge scour), topographic (aerial photos & contour maps), economic (costs/benefits) and real estate (land & structural values).

Sampling Protocols:

Data Format: Intergraph, AutoCAD, HEC-RAS (HEC-2), HEC-HMS (HEC-1), HEC-FFA

Stakeholders Common to SCBWMI: SCVWD, USFWS, USEPA

Study Information Verified: Yes

Project Name: Calabazas Creek Flood Control Project

Overall Purpose: Resource Management: Flood Control

Lead Agencies/Organizations: SCVWD
Funding Sources:
Contracted Parties:
Contact Information:
Name: Roy Weese
Organization: SCVWD
Phone: 408-265-2600 x 2688
Fax: 408-323-1735
Email: royweese@scvwd.dst.ca.us

Relevance to SCBWMI: May provide useful data for the Watershed Assessment Report.

Goals: Reduce economic damage and threat to human safety caused by flooding Calabazas creek.

Objectives: 1) Modify the River channel to increase capacity for anticipated 100-year flow; 2) Reduce bank erosion and sedimentation; 3) Provide for long-term riparian habitat improvement.

Study Watersheds and Codes (RWQCB): Calabazas (5523)

Tributaries Sampled in Watersheds: Calabazas

Sampling Location:

Sampling Frequency:

Field Sampling Period:

Projected Completion Date:

General Data Types Collected:

Detailed Data Description:

Sampling Protocols:

Data Format:
Stakeholders Common to SCBWMI:
Study Information Verified: Yes

Project Name: Urgent Sediment Removal Project

Overall Purpose: Resource Management for Flood Protection

Lead Agencies/Organizations: SCVWD
Funding Sources: SCVWD
Contracted Parties: SCVWD
Contact Information:

Name: Beau Goldie
Organization: SCVWD
Phone: 408-265-2607 x 2634
Fax:408-268-8547
Email: beaug@scvwd.dst.ca.us

Relevance to SCBWMI: Activities include data collection and affect channel morphology and habitat of stream organisms.

Goals: Reduce sediment loads that have decreased creek capacity to convey the one-percent flood.

Objectives: Sample and analyze sediments (total sampling population is approximately 100,000 cubic yards) to characterize physical and chemical properties and comply with regulatory permits for sediment removal, disposal or reuse.

Study Watersheds and Codes (RWQCB): San Tomas (5319), San Francisquito (5516), Stevens (5319), Coyote (5501)

Tributaries Sampled in Watersheds: San Tomas, Saratoga, San Francisquito, Stevens, Berryessa, Lower Penitencia, Los Coches, Calera

Sampling Location: Sampling locations are selected in three dimensions:

1) Creek station or location along creek: locations are referenced by their proximity to major transportation corridors and by District station numbers (both downstream and upstream) (see Appendix A); sampling interval determined by dividing length of creek reach by number of samples to be collected. Initial location determined by selecting a random number (X) within the sampling interval, and initial sample shall be collected X feet upstream.
2) Location along creek cross section: chosen by dividing the creek invert into thirds, generating a random number between 1 and 3 at each cross section to determine which third will be sampled.
3) Depth below ground surface: determined in the field -- use visual clues and/or existing data to determine sediment depth, and generate a random number to determine the depth at which samples shall be collected.

Sampling Frequency: Two-tiered sampling design: collect samples for every 1,000 cubic yd^3 of sediment and composite up to 4 consecutive samples; every 4,000 yd^3 collect an additional in-

situ sample that remains uncomposited. If no sediment is found at designated sampling interval, staff will proceed either upstream or downstream until they find a sediment deposit to sample. Extent of sampling on each creek is based on volume of identified sediment deposit, e.g., if 30,000 yd^3 of sediment are to be removed on a single creek, 30 sites will be sampled.

Field Sampling Period: Summer 1996-1997

Projected Completion Date: Summer, 1997

General Data Types Collected: Sediment

Detailed Data Description: Sediment; testing for metals (total CAM 17 – arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, selenium, zinc, silver, barium, cobalt, molybdenum, antimony, thallium, vanadium), pesticides, halogenated volatiles, polynuclear aromatic hydrocarbons (PAHs), petroleum products, toxicity, moisture content, grain size. Field sampling logs will document the sampling date, time, location, collector, methods, location within creek, depth, number, site conditions, analysis requested, and other information describing the sampling event.

Sampling Protocols: Sediment Collection: slide hammer and a stainless steel sleeve to minimize volatilization; in gravely soils of poor cohesion, a hand trowel, hand auger, or another sampling method approved by the District. Sediment Analysis: EPA Methods 8010 and 8015 for volatile organics (halogenated); EPA Methods 6010 and 7000 for CAM 17 metals – at least 25% of all samples will be tested using the standard WET extraction method, and an additional 25% will be tested using the modified WET extraction method; EPA Method 8080 for pesticides; EPA Method 8310 for polynuclear aromatic hydrocarbons (PAHs); EPA Method 8015 for petroleum products; EPA method 160.3 for sediment moisture content; ASTM method D422 – sieve test – for grain size, samples with > 10% fines as determined by the sieve test will also be tested using ASTM D422 – hydrometer test. All samples analyzed for toxicity (TOC) by EPA 415.2.

Data Format:

Stakeholders Common to SCBWMI: SCVWD, RWQCB, CDFG

Study Information Verified: Yes

Project Name: Adobe Creek Watershed Planning Study

Overall Purpose: Resource Management: Watershed Planning and Flood Control

Lead Agencies/Organizations: SCVWD
Funding Sources: SCVWD
Contracted Parties: SCVWD
Contact Information:
Name: Scott Wilson
Organization: SCVWD
Phone: 408-265-2607 x 2621
Fax: 408-268-7687
Email: scotwils@scvwd.dst.ca.us

Relevance to SCBWMI: May provide useful data for the Watershed Assessment Report.

Goals: Reduce economic damage and threat to human safety caused by Adobe Creek flooding and address sources of water quality impairment.

Objectives: 1) Modify the River channel to increase capacity for anticipated 100-year flow; 2) Reduce bank erosion and sedimentation; 3) Provide for long-term riparian habitat improvement.

Study Watersheds and Codes (RWQCB): Adobe Creek (5521)

Tributaries Sampled in Watersheds: Adobe, Barron

Sampling Location: Adobe Sites: 3 above intersection with Barron Crk, 1 on South of El Camino Real, 2 N of Foothill Expressway, 2 on either side of junction with Robleda Crk, 1 NW of El Monte Ave, 3 south of 280, 1 at junction with West and Middle Forks, 1 downstream of this junction, and 1 at intersection with North Fork. Barron Sites: 1 above intersection with Adobe Crk.

Sampling Frequency:

Field Sampling Period:

Projected Completion Date:

General Data Types Collected: Sediment, Water Quality

Detailed Data Description: Sediments: EPA priority pollutant metals, chlorinated pesticides, polychlorinated biphenyls, polynuclear aromatic hydrocarbons, chlorinated herbicides, total petroleum hydrocarbons, total recoverable petroleum hydrocarbons.

Sampling Protocols:

Data Format:

Stakeholders Common to SCBWMI: SCVWD

Study Information Verified: Yes

Section 2: Mitigation Projects

Project Name: Environmental Enhancement Project(s) - Streamflow Augmentation and Wetland Creation using Recycled Water

Overall Purpose: Mitigation to enhance environment and minimize impacts to salt marsh ecosystem.

Lead Agencies/Organizations: City of San Jose

Funding Source: City of San Jose, Environmental Services Department; SCVWD

Contracted Party(s): Tetra Tech, Inc. and subconsultants

Contact Information:
Organization: City of San Jose
Name: Don Arnold
Phone: 408-945-3740
Fax: 408-934-0476
Email: don.arnold@ci.sj.ca.us

Relevance to SCBWMI: 1) Explicit intent to coordinate data collection efforts with those of other stream studies: project will only collect those data not collected by other current stream studies; 2) NPDES permit requirements; 3) Actions will increase streamflows and wetland acreage; South Bay precedent for reintroducing recycled water into streams.

Goals: Optimize environmental benefits of introducing recycled water.

Objectives: 1) Design and support implementation of two streamflow pilot augmentation projects; 2) Feasibility studies of wetland creation project.

Study Watersheds (and RWQCB Code): Guadalupe (5512), Coyote (5501)

Tributaries Sampled in Watersheds: Mainstems of Guadalupe and Coyote

Sampling Location: 18 miles of Coyote Creek above Standish Dam; three five-mile sampling segments below introduced flow (near crossing of Umbarger Road), and one three-mile segment above point of introduced flow.

Sampling Frequency: variable (no further specification provided)

Field Sampling Period: 7/98 - 5/00

Projected Study Completion Date: 12/00

General Data Types Collected: Water quality, biological and physical habitat assessment, biological communities.

Detailed Data Description: Salinity, T^o, trace metals, organics, nutrients, species numbers, abundance, and habitat for macroinvertebrates and fishes, toxicity, nuisance vegetation, sediment grain size.

Sampling Protocols: Macroinvertebrates: US EPA Rapid Bioassessment Protocol (CDFG 1996); Fish: riffle/run habitat will be sampled via electrofishing using block nets and a three-pass depletion method, pool habitat will be sampled using a 150 x 6-foot beach seine with ¼-inch mesh and a three-pass depletion method; physical habitat: to be determined.

Data Format: Electronic relational database with georeferenced sampling sites

Stakeholders Common to SCBWMI: Cities of San Jose, Sunnyvale, Santa Clara, SCVWD

Study Information Verified: Yes

Project Name: Fisheries and Aquatic Habitat Collaborative Effort (FAHCE)

Overall Purpose: Mitigation required to respond to lawsuit

Lead Agencies/Organizations: SCVWD, CDFG

Funding Source: SCVWD, CALFED

Contracted Party(s): Study design and evaluation: TAC, SCVWD

Contact Information:

Name: Scott Akin
Organization: SCVWD
Phone: 408-265-5600 x2060
Fax: 408-264-0213
Email: scotakin@scvwd.dst.ca.us

Relevance to SCBWMI: 1) Explicit intent to coordinate and collaborate on data collection with other stream studies, including SCVWD flood control projects, RWQCB water quality monitoring, City of San Jose streamflow augmentation project; 2) useful data for WMI.

Goals: 1) Identify the contribution of SCVWD facilities and operations to existing fishery habitat conditions within the context of the variety of factors impacting salmon and steelhead populations; 2) Identify reasonable flow and non-flow measures that will improve habitat conditions for such fish populations within the context of competing water and land use demands.

Objectives:

1.0) Research Objectives: Provide a technical basis for well-grounded policy decisions; specifically, quantify:
1.1) the diversity, abundance, and condition of existing salmon and steelhead resources;
1.2) habitat quantity and quality that may limit the above listed in (1.1);
1.3) non-flow measures that could change existing conditions that limit the above listed in (1.1);
1.4) alternative flow regimes that could change the conditions that limit the above listed in (1.1).

2.0) Management Objectives: Identify and evaluate alternative management actions based in part on the above studies and on the following:
2.1) Improve habitat conditions to maintain fish populations in good condition;
2.2) Protect, maintain, and improve habitat conditions for species listed under the State and Federal Endangered Species Acts or identified as California Species of Special Concern;
2.3) Improve the availability and suitability of stream corridor and channel habitat for a diversity of species of fish and wildlife.

Study Watersheds: Guadalupe (5512), Coyote (5501), Stevens (5319)

Tributaries Sampled in Watersheds: Guadalupe, Alamitos, Los Gatos Creek, Stevens Creek

Sampling Location: Guadalupe: six miles between Almaden Expressway and Guadalupe Reservoir. No further information.

Sampling Frequency: 1998: 7/15-10/15. Guadalupe and Alamitos: 7/20 – 8/8. Los Gatos and Stevens Creek: 7/15-10/15.

Field Sampling Period: 7/20/98 – 10/15/00

Projected Study Completion Date: 12/00

General Data Types Collected: biological, physical

Detailed Data Description: toe-to-toe channel widths, stream depth, proportion of bankside cover that is woody debris, riparian vegetation, undercut bank, boulder, or aquatic vegetation, bank stability, instream cover complexity, residual pool volume index, stream substrate (Wentworth scale), degree of sedimentation, area affected by fine sediment, sediment sources, area of salmonid spawning gravel, terrestrial drift potential (fish food), benthos production potential, salmonid habitat quality, constraints to salmonid habitat quality, potential salmonid migration barriers, temperature, dissolved oxygen.

Sampling Protocols: Fish Habitat, CDFG - Flosi and Reynolds 1988; macroinvertebrate communities (CDFG 1996); fluvial geomorphic classes (Rosgen 1994); residual pool volume index (Lisle and Hilton 1991), bank stability (Platts et al. 1983), salmonid habitat quality (Li et al. 1994), constraints to salmonid habitat quality (Li et al. 1994), sediment (McNeil Sampler, samples will be dried and sieved to determine cumulative frequency distribution statistics), temperature (continuous on the hour).

Data Format: Excel, Access, others (unspecified).

Stakeholders Common to SCBWMI: SCVWD, CDFG, GCRCD, NHI, City SJ, SJRA, NMFS, USFWS, SWRCB.

Study Information Verified: Yes

Section 3: Permit Compliance

Project Name: First Flush Monitoring Project

Overall Purpose: Permit Compliance: NPDES

Lead Agencies/Organizations: City of San Jose, Environmental Services Department
Funding Sources: City of San Jose
Contracted Parties: City of San Jose
Contact Information:
Name: Dave Grabiec
Organization: City of San Jose
Phone: 408-945-3028
Fax: 408-934-0476
Email: dave.grabiec@ci.sj.ca.us

Relevance to SCBWMI: Results may influence how stormwater programs are implemented.

Goals: Support IC/ID, IIP, and Outreach Programs by identifying sectors in City of San Jose with greatest pollutant loads.

Objectives: Collect and analyze samples from major storm drain outfalls to identify the presence and relative magnitude of pollutants in different sectors of the stormwater system.

Study Watersheds and Codes (RWQCB): Guadalupe (5512, 5511, 5311), Coyote

Tributaries Sampled in Watersheds: Sampling outfalls on Guadalupe River and Coyote Creek

Sampling Location: 25 storm drain outfalls:

River	Street	Outfall Number
Guadalupe	River Oaks	526
Guadalupe	Montague	581
Guadalupe	George	510
Guadalupe	San Pedro	509
Guadalupe	W. Virginia	119
Guadalupe	Edwards	128
Guadalupe	Blossom Hill	386
Guadalupe	Blossom Hill	410
Guadalupe	Tasman	Lift station
Coyote	Brokaw	635
Coyote	Story	162
Coyote	Balfour	182
Coyote	Umbarger	222
Coyote	Senter	298
Coyote	Needles	310

Coyote	Oswego	133
Coyote	Alma	151
Coyote	Tully	313
Canoas	Cottle	397
Canos	Cottle	398
Lower Penitencia	Ringwood	No number
Lower Penitencia	Old Oakland	No number
Los Gatos	Lincoln	232

Sampling Frequency: First effective rainfall and every opportune rainfall event of the wet season

Field Sampling Period: 4/98 - ongoing

Projected Completion Date: Ongoing

General Data Types Collected: Water quality

Detailed Data Description: Toxic metals, pesticides, PCBs, poly aromatic hydrocarbons, total suspended solids, nitrates, phosphates, oil and grease.

Sampling Protocols: Manually composited, time-proportional samples. A single grab sample is collected every hour during the storm event and composited into a single sample for analysis.

Data Format: Access 2.0

Stakeholders Common to SCBWMI: Cities San Jose, Sunnyvale, Santa Clara, SCVURPPP

Study Information Verified: Yes

Project Name: Stormwater Monitoring to Support Illicit Connection/Illegal Discharge and Industrial Inspection Programs

Overall Purpose: Permit Compliance: Support and improve stormwater program implementation of City of San Jose Urban Runoff Management Plan and the Santa Clara Valley Urban Runoff Pollution Prevention Plan.

Lead Agencies/Organizations: City of San Jose, Environmental Services Department
Funding Sources: City of San Jose
Contracted Parties: City of San Jose
Contact Information:
Name: Dave Grabiec
Organization: City of San Jose
Phone: 408-945-3028
Fax: 408-934-0476
Email: dave.grabiec@ci.sj.ca.us

Relevance to SCBWMI: Results may improve implementation of stormwater programs.

Goals: 1) Support IC/ID, IIP, and Outreach Programs by proactive investigation of pollutant sources; 2) Evaluate effectiveness of Urban Runoff Management Program activities.

Objectives: Characterize drainage areas and stormwater discharges including land use characteristics, pollutant concentrations, and mass loading; 2) assess existing or potential adverse impacts on beneficial uses caused by pollutants; 3) identify potential sources of pollutants; 4) evaluate effectiveness of stormwater pollution prevention control measures.

Study Watersheds and Codes (RWQCB): Guadalupe, Coyote

Tributaries Sampled in Watersheds: Stormdrains connected to Guadalupe and Coyote

Sampling Location: Six drainage areas representing commercial/industrial parks within San Jose.

River	**Street**	**Outfall Number**
Coyote	Charter Park Dr.	171
Coyote	Yard Ct.	553
Guadalupe	Terminal Ave.	607
Coyote	Industrial Ave.	631
Coyote	Rogers Ave.	644
Coyote	Paragon Dr.	641

Sampling Frequency: Every major storm event that is preceded by sufficient dry weather for pollutant accumulation to occur.

Field Sampling Period: 10/97 – 3/00

Projected Completion Date: 7/00

General Data Types Collected: Water quality and flow

Detailed Data Description: Toxic metals, pesticides, PCBs, Poly Aromatic Hydrocarbons, total suspended solids, nitrates, phosphates, oil and grease.

Sampling Protocols: Flow-proportional, composite samples are collected for analysis.

Data Format: Access 2.0

Stakeholders Common to SCBWMI: Cities of San Jose, Sunnyvale, Santa Clara, SCVURPPP

Study Information Verified: Yes

Project Name: Industrial Stormwater Monitoring Pilot Program

Overall Purpose: Permit Compliance: support and improve implementation of City of San Jose Urban Runoff Management Plan and the Santa Clara Valley Urban Runoff Pollution Prevention Plan.

Lead Agencies/Organizations: City of San Jose, Environmental Services Department
Funding Sources: City of San Jose
Contracted Parties: City of San Jose
Contact Information:

Name: Dave Grabiec
Organization: City of San Jose
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Fax: 408-934-0476
Email: dave.grabiec@ci.sj.ca.us

Relevance to SCBWMI: Results may improve implementation of stormwater programs, specifically may improve SWPPP implementation and monitoring.

Goals: Provide a general indication of the extent to which industries have met the objectives of their stormwater pollution prevention permits (SWPPPs).

Objectives: 1) Characterize pollutant sources from industrial facilities in SIC sectors whose processes have potential to produce metal contaminates as a by-product of their operations; 2) evaluate effectiveness of SWPPP implementation at industrial facilities that have implemented control measures; 3) provide information and training to industry and inspection staff to improve SWPPP monitoring techniques and control measure implementation.

Study Watersheds and Codes (RWQCB): Guadalupe

Tributaries Sampled in Watersheds: N/A

Sampling Location: Two printed circuit board manufacturers were sampled at locations that represent specific manufacturing activities.

Sampling Frequency: A single-storm monitoring event.

Field Sampling Period: 10/97

Projected Completion Date: 10/98

General Data Types Collected: Water quality

Detailed Data Description: Copper, Nickel

Sampling Protocols: Grab samples representing runoff downstream of industrial pollutant sources were collected at 20 – 40 minute intervals.

Data Format: Program report hardcopy.

Stakeholders Common to SCBWMI: Cities of San Jose, Sunnyvale, and Santa Clara, SCVURPPP

Study Information Verified: Yes

Project Name: Industrial Stormwater Monitoring Pilot Program

Overall Purpose: Permit compliance: NPDES

Lead Agencies/Organizations: City of Sunnyvale
Funding Sources: City of Sunnyvale
Contracted Parties: City of Sunnyvale
Contact Information:
Name: Robert Gallo
Organization: City of Sunnyvale
Phone: 408-730-7737
Fax: 408-747-1139
Email: rgallo@ci.sunnyvale.ca.us

Relevance to SCBWMI: Study results may influence BMPs for some industrial manufacturing facilities.

Goals: Improve compliance NPDES permit for detecting and reducing stormwater metal loadings.

Objectives: Determine whether copper and/or nickel concentrations found in stormwater runoff sampled at electroplating, metal finishing, and semiconductor manufacturing facilities differ significantly from those sampled at other commercial and industrial sites.

Study Watersheds and Codes (RWQCB) : Sunnyvale East (5523, 5319) and West (5319).

Tributaries Sampled in Watersheds: NA

Sampling Location: Three facilities from each of the three targeted industrial categories (electroplating, metal finishing, and semiconductor manufacturing).

Sampling Frequency: 5 storm events: 2 samples per event, the 1st within the first hour of the storm event (1st flush samples), and the 2nd after the 2nd hour of the storm event. Total of 120 industrial stormwater samples were taken (3 facilities x 4 types of facilities x 5 storms x 2 samples per storm).

Field Sampling Period: 11/97 - 5/98

Projected Completion Date: 7/98

General Data Types Collected: Water chemistry

Detailed Data Description: Total Copper, total Nickel, total suspended solids, specific conductance, total organic Carbon, pH, and oil and grease (in some cases). For samples > 500 ppb Cu or Ni, a series of additional metals may be analyzed upon request.

Sampling Protocols: Grab and catch methods; flow measurement sampling using an automatic sampling instrument. Detection limits for copper and nickel, 0.01 and 0.003 mg/L, respectively.

Data Format: Technical memorandum; sample data are stored in the City's sample history database (format not specified)

Stakeholders Common to SCBWMI: Cities of Sunnyvale, Santa Clara, San Jose, SCVURPPP

Study Information Verified: Yes

Project Name: Palo Alto Stream Monitoring

Overall Purpose: Permit compliance: NPDES

Lead Agencies/Organizations: City of Palo Alto
Funding Sources: City of Palo Alto
Contracted Parties: City of Palo Alto
Contact Information:
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Relevance to SCBWMI: Useful data. Analysis may provide useful information.

Goals: Monitor water quality

Objectives: Identify trends in levels of metals in creeks during rainy season.

Study Watersheds and Codes (RWQCB): San Francisquito (5516)

Tributaries Sampled in Watersheds: San Francisquito, Matadero, Barron, Adobe

Sampling Location: N = 4. San Francisquito: Stanford Diversion Canal on Arestradero Rd. (control), Newall/San Fran Creek @ bridge (downstream); Matadero: Sand Hill Rd next to Palo alto Booster Pump Station (control); Matadero Crk @ Greer rd (downstream). Barron: Barron Crk @ Louise St. (downstream); Adobe: Adobe Crk @ E. Meadow Circle.

Sampling Frequency: 4 storm events per winter rainy season

Field Sampling Period: Oct-Jan

Projected Completion Date: Ongoing

General Data Types Collected: Water quality

Detailed Data Description: Copper, nickel, lead, zinc, total and dissolved solids, nitrates, turbidity, dissolved oxygen, pH, and conductivity.

Sampling Protocols: Isco Sequential sampler for composite 5 gallon samples collected at 15 minute intervals (100 ml / interval). Set sampler for 24 hour cycle. EPA method for handling samples.

Data Format: MS Access and Excel for graphs

Stakeholders Common to SCBWMI: City of Palo Alto, SCVURPPP

Study Information Verified: Yes

Section 4: Precedent-Setting for Watershed Management

Project Name: Stormwater Environmental Indicators Pilot Demonstration Projects

Overall Purpose: Precedent Setting: Evaluate EPA's Environmental Indicator methodology for evaluating stormwater programs; Develop a guidance manual for applying this methodology in the arid West.

Lead Agencies/Organizations: SCVURPPP
Funding Sources: SCVURPPP, WERF
Contracted Parties: SCVURPPP, WCC, KLI, CCRS, EOA Inc.
Contact Information:

Name: Dan Cloak
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Email: dtcloak@eoainc.com

Relevance to SCBWMI: Testing a methodology to evaluate stormwater programs. Physical and biological indicators may be used to assess the effects of urbanization on stream habitat.

Goals: Evaluate the usefulness of the Center for Watershed Protection's Environmental Indicator Methodology (Claytor and Brown 1996) to measure the success of stormwater Programs by applying it in Coyote Creek and a small industrial catchment (Walsh Avenue) in the City of Santa Clara.

Objectives: 1) Evaluate indicators at 2 scales: a large urban/residential watershed (310 m^2) and a small industrial drainage (28 m^2); 2) Compare pre-program data to current data.

Study Watersheds and Codes (RWQCB): Coyote (5501, 5308, 5503, 504, 5304, 5502, 5507, 5509, 5506)

Tributaries Sampled in Watersheds: Coyote Creek

Sampling Location: waiting for QAPP (by 4/98)

Sampling Frequency: waiting for QAPP (by 4/98)

Field Sampling Period: 11/98 - 9/99

Projected Completion Date: 12/99

General Data Types Collected: Biological, chemical, physical, and social.

Detailed Data Description: waiting for QAPP (by 4/98)

Sampling Protocols: waiting for QAPP (by 4/98)

Data Format: Electronic: relational database and in a GIS (PC ARC/INFO)

Stakeholders Common to SCBWMI: SCVURPPP, CCRS

Study Information Verified: Yes

Project Name: Guadalupe River Flood Management Collaborative (GRFMC)

Overall Purpose: Precedent for Watershed Management: Develop an integrated solution to river management that achieves a long-term resolution of issues related to the completion of the Guadalupe River Flood Control Project.

Lead Agencies/Organizations: USACE, SCVWD, City SJ, SJRA

Funding Source: USACE, State Flood Control Subventions, SCVWD, SJRD, City SJ

Contracted Parties: Corps (ANWest, Jones & Stokes, Hargreaves Associates, Northwest Hydraulic Consultants), SCVWD (Jones & Stokes, Biggs Cardosa Associates, Archaeological Resource Management), SJRA (Hargreaves, Sasaki Associates).

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Organization: US Army Corps of Engineers, Sacramento District
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Fax: (408) 557-7846
Email: kmyers@usace.mil

Relevance to SCBWMI: Collaborative, multi-stakeholder approach to watershed management.

Goals: Reduce the threat of flooding along the Guadalupe River within the downtown areas of the City of San Jose and provide 1% flood protection, develop a riverside park, ensure that the environment and community interests in transportation and development are fully protected, and satisfy conditions of the State Water Resources Control Board Certification.

Objectives: Review available alternatives and development of alternative design and mitigation options to respond to habitat loss caused by increased flood protection and recreation; complete the flood control project in compliance with the Water Quality Certification and the Endangered Species Act. The primary focus is on the specific flood control project in Contracts 1, 2, and 3; a secondary focus is to review the flood control project in the context of the broader watershed.

Study Watersheds and Codes (RWQCB): Guadalupe (5511, 5512)

Tributaries Sampled in Watersheds: Alamitos Creek, Guadalupe Creek, Canoas Creek, Ross Creek, Los Gatos Creek (these streams are within purview of project but are not being sampled).

Sampling Location: NA

Sampling Frequency: NA

Field Sampling Period: NA

Projected Study Completion Date:

General Data Types Collected: NA

Detailed Data Description: NA

Sampling Protocols: NA

Data Format: NA

Stakeholders Common to SCBWMI: SCVWD, USACE, City SJ, SJRA, NHI, GCRCD, CA DFG, NMFS, SWRCB, RWQCB, USFWS

Study Information Verified: Yes

Project Name: Regional Geographic Initiative Demonstration of the Bay Area Watersheds Science Approach in Permanente Creek

Overall Purpose: Precedent for developing a unified approach for watershed assessment in the Bay Area.

Lead Agencies/Organizations: SFEI
Funding Sources: US EPA, SCVURPPP
Contracted Parties: SFEI, CCRS
Contact Information:

Name: Josh Collins
Organization: SFEI
Phone: 510-231-9539
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Relevance to SCBWMI: Prototype development of a scientifically-based watershed assessment procedure based on Bay Area Watershed Science Approach.

Goals: Develop a science-based watershed assessment template to promote regional consistency among local watershed assessment.

Objectives: 1) Develop an understanding of the historical ecology and land uses of the watershed; 2) to develop base mapfor field notations of local conditions, visualize study findings and to serve as a public directory to spatial data and data sources; 3) identify source and relative contribution of sediment loads; 2) identify meaningful sampling points in coordination with the Regional Geographic Initiative; 3) Establish protocol for sampling water quality and hydro-geomorphology that will enable the SCVURPPP to strategically apply pollutant reduction measures.

Study Watersheds and Codes (RWQCB): Permanente (5519)

Tributaries Sampled in Watersheds: Permanente, and selected tributaries (undetermined).

Sampling Location: Contiguous segments of reaches of the mainstem channel, selected tributaries, or within selected reference reaches, where a reach is defined as a length of channel between obvious changes in channel form or between stream crosses, and a segment is defined as a length of left or right bank or terrace, or a length of channel bed within a reach.

Sampling Frequency: Undetermined.

Field Sampling Period: 10/98

Projected Completion Date: 8/99

General Data Types Collected: Physical

Detailed Data Description: Stream Terraces and Stream Banks: height above bankfull stage, length of eroded segment, average lateral and vertical extent of erosion, cause and kind of erosion, average volume of erosion per cause and kind, total length of revetment per type and condition, total length of terrace per natural substrate type and condition, total length of segments dominated by invasive/exotic plants, total length of segments dominated by native plants, DBH and age of over-story trees, and dimensions of storm drains or other point sources. Channel Beds: bed form and substrate type, length and depth of pools, cause of pool, bankfull height, width, depth, mean depth, cross-sectional area, flood-prone width and depth, entrenchment ratio, average volume of aggradation or degradation, D50 of substrate particle size, average height of point bars and mid-channel bars, average volume of sediment storage, and Thalweg profile.

Sampling Protocols: Experimental to develop a local standard, with the exception of sediment size. D50 particle size determined using pebble count (Harrelson et al., 1994).

Data Format: Report, GIS (ARC/INFO, ArcView).

Stakeholders Common to SCBWMI: SFEI, CCRS, SCVURPPP, US EPA, RWQCB.

Study Information Verified: Yes

Project Name: San Francisquito Coordinated Resources Management Plan

Overall Purpose: Precedent in Santa Clara Basin for a Coordinated Resource Management Group developing a watershed management plan. Water quality and riparian habitat monitoring programs based upon CRMP task force and Technical Advisory Committee recommendations.

Lead Agencies/Organizations: CCRS
Funding Sources: Stakeholders listed below
Contracted Parties: CCRS, Balance Hydrologics, Inc.
Contact Information:

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CRMP Program:
Name: Pat Showalter
Organization: PCC
Phone: 650-962-9876
Fax: 650-962-8234
Email: crmp@pccf.org

Relevance to SCBWMI: Data collection and a local example of watershed planning and management at a sub-basin scale with a strong emphasis on community participation.

Goals: Foster a diverse and healthy watershed, valued as a natural and community resource, in a manner consistent with public health and safety and respecting property rights.

Objectives: 1) Natural Resource Preservation; 2) Flood and Erosion Control; 3) Pollution Prevention; 4) Adoption of policies, ordinances and General Plans that protect riparian and wetland areas; 5) Facilitate policies, ordinances, planning mechanisms to discourage illegal creek uses; 6) Educate and Involve Public in Riparian Stewardship.

Study Watersheds and Codes (RWQCB): San Francisquito (5516)

Tributaries Sampled in Watersheds: West Union Creek, Bear Gulch Creek, San Francisquito Creek, Los Trancos Creek, Corte Madera Creek

Sampling Location: Every 500 m up streams (see attached map)

Sampling Frequency: Fiscal Year 97-98: Water Quality: 10/97 - 10/98, sampled bimonthly; Stream Flow: Minimum of 10x/yr; Channel morphology and substrate: 2x/yr.

Field Sampling Period: 10/96 – 10/98

Projected Completion Date: 10/98

General Data Types Collected: Chemical and physical. *Data sampled in monitoring program may vary depending on development of task force goals and objectives.

Detailed Data Description: T^o, DO, turbidity, pH, conductivity, Stream flow, Suspended sediment, pebble counts, height of streambank and water, and Thalweg profile.

Sampling Protocols: Channel Morphology: USFS (GTR RM-245); Substrate: Wolman (1954) protocol in riffle areas only, w/in 600' of sampling point. Flow, sediment, temperature, and salinity: USFS (GTR RM-245); USGS (no reference provided by Balance Hydrologics, Inc.).

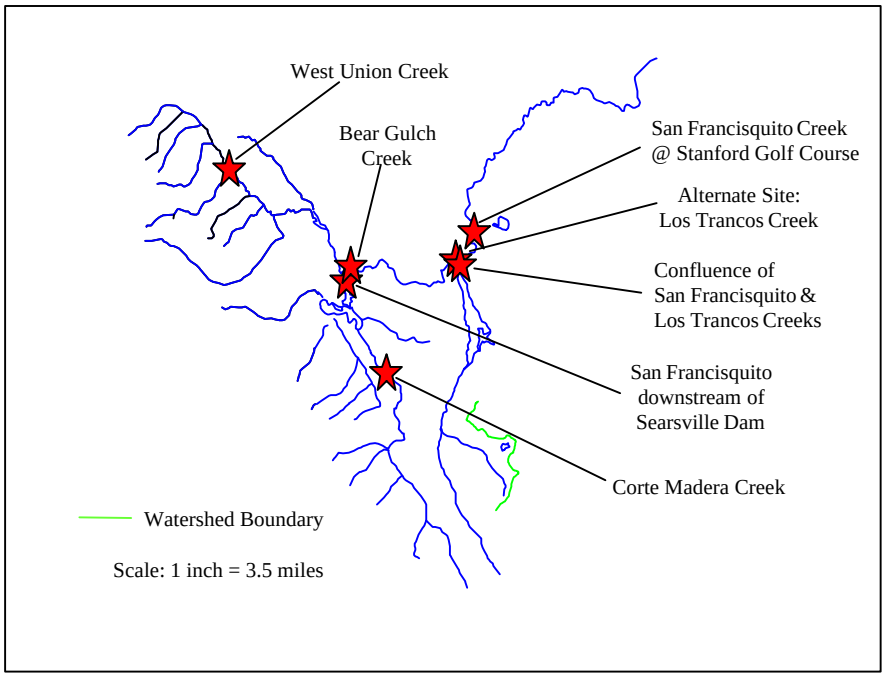
Data Format: Excel 5.0 workbook with a field that includes coordinates and links to a GIS (ARC/INFO, ArcView).

Stakeholders Common to SCBWMI: California Department of Conservation (DOC), Environmental Protection Agency (EPA), National Park Service (NPS), California Department of Water Resources (DWR), USDA Natural Resources Conservation Service (NRCS), US DOI Fish and Wildlife Service (USFWS), Regional Water Quality Control Board (RWQCB), The Audubon Society, River/Trail Conservation, Santa Valley Water District, City of Palo Alto, County of San Mateo, County of Santa Clara, Peninsula Conservation Center, Santa Clara Valley Audubon Society, Bay Area Action, Coyote Creek Riparian Station, Committee for Green Foothills, Santa Clara County Creeks Coalition, Stanford University.

Study Information Verified: Yes

1997 – 1998 Watershed Monitoring Program

Water Quality, Sediment and ChannelCharacteristics Sampling Sites, Upper San Francisquito Creek Watershed Study



Project Name: Lower Silver Creek Watershed Project

Overall Purpose: Resource Management for Flood Protection

Lead Agencies/Organizations: USDA-NRCS
Funding Sources: Public Law 566
Contracted Parties: NRCS, SCVWD, GCRCD
Contact Information:

Name: Robert Snieckus
Organization: NRCS
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Fax: 530-757-8217
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Relevance to SCBWMI: Precedent for redesigning the traditional flood control project design (concrete channel construction); updating design with modern practices including soil bioengineering practices, urban fishery enhancement, riparian and wetland habitat creation, sediment traps, etc. Citizen baseline monitoring data obtained by high school students. Future monitoring to continue throughout construction and for 10 years after completion.

Goals: Provide protection from 100-year (1%) flood-events while incorporating water quality, environmental education, fishery and wildlife enhancement in a rapidly urbanizing area of San Jose.

Objectives: Redesign the flood control project that was developed for this creek in the 1970's, paying particular attention to engineering designs that maintain riparian corridor function and sustain biological communities.

Study Watersheds and Codes (RWQCB): Lower Silver Creek portion of Coyote Creek watershed (5507).

Tributaries Sampled in Watersheds: Lower Silver Creek

Sampling Location: McKee, Maybury, and Wooster cross-streets.

Sampling Frequency: Weekly

Field Sampling Period: 2/95 – 6/95

Projected Completion Date: 1995

General Data Types Collected: water quality, biological

Detailed Data Description: pH, depth and velocity, temperature, dissolved oxygen, conductivity, turbidity, macroinvertebrate assemblages.

Sampling Protocols: Coyote Creek Riparian Station protocols (CCRS 1995).

Data Format: Custom field sample sheets entered into a spreadsheet (not specified).

Stakeholders Common to SCBWMI: NRCS, SCVWD, GCRCD

Study Information Verified: Yes

Section 5: Research

Project Name: Factors Affecting the Distribution of Lotic Macroinvertebrates in an Urban Setting

Overall Purpose: Research to improve the USGS National Water-Quality Assessment Program, and to establish biomonitoring protocols in the South Bay and other urban centers.

Lead Agencies/Organizations: USGS
Funding Sources: USGS
Contracted Parties: none
Contact Information:

Name: Dr. James L. Carter
Organization: USGS
Phone: 650-329-4439
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Email: jlcarter@usgs.gov

Relevance to SCBWMI: Researchers will: 1) produce useful assessment tools: a) a model to predict the expected invertebrate community at urban stream sites; b) determine the level of sampling effort and taxonomic resolution that is most cost effective to use the model; and 2) provide useful macroinvertebrate data; 3) try to coordinate with other studies sampling macroinvertebrate communities and habitats.

Goals: To determine the factors that most influence the distribution of stream macroinvertebrates in an urban environment.

Objectives: Relate the distribution of lotic macroinvertebrates to site- and basin-scale physical, chemical, and geomorphological variables. Determine how these factors vary within and among sub-basins and determine their rate of longitudinal (downstream) change. Explore the relationships between variables driving the distribution of lotic macroinvertebrates and measures of urbanization, such as: population density, percentage impervious area, etc.

Study Watersheds and Codes (RWQCB): San Francisquito (5516), Los Trancos (5521), Stevens Creek (5319), Saratoga (5520), Guadalupe (5512), Alamitos (5510), Calero (5310), Coyote (5501), Upper Penitencia (5506)

Tributaries Sampled in Watersheds: Streams included in the study are 1. San Francisquito Ck., 2. Corte Madera Ck., 3. Los Trancos Ck., 4. Stevens Ck., 5. Saratoga Ck., 6. Guadalupe R., 7. Los Gatos Ck., 8. Ross Ck., 9. Guadalupe Ck., 10. Alamitos Ck., 11. Barret Ck., 12. Arroyo Calero, 13. Coyote Ck., and 14. Penitencia Ck.

Sampling Location: Sites were established at approximately 2 kilometer intervals, starting at the mouth of each stream. On most streams, the upstream most sites are limited to an altitude of 300-400 m. Some locations were inaccessible and/or proved to have insufficient riffle habitat. In total, 85 sites were sampled.

Sampling Frequency: 2 x /year: May – August. Sampling for invertebrates, DO, pH, and conductivity occurred during May. NO_2+NO_3 was mainly sampled during June. Geomorphological measurements were made July – August.

Field Sampling Period: May - August 1997, 1998 and ongoing if funded.

Projected Completion Date: Ongoing.

General Data Types Collected: Physical, chemical, and biological.

Detailed Data Description: Depth, velocity, temperature, substrate particle size in riffle habitats, channel geometry (slope and wetted and bankfull width and depth), DO, pH, conductivity, NO_2+NO_3, percent canopy, qualitative vegetative cover, number of species and individuals of lotic invertebrates found in riffle and multi-habitat collections.

Sampling Protocols: Substrate particle size measured using Wolman pebble count technique (Wolman 1954). Chemical samples were taken as grab samples or measured instream with a meter except NO_2+NO_3, which was filtered at 0.2 µm and kept at 4^oC and analyzed within 30 days. Invertebrates were sampled with a 500 µm kicknet: riffle samples were taken by compositing 5 - .09 m^2 randomly chosen kick samples; multi-habitat samples were taken by a percentage habitat weighted technique. Riffle samples were taken by compositing 5 - .09 m^2 randomly chosen kick samples (Furst et al. 1981).

Data Format: Data are stored as field and laboratory data sheets, EXCEL 97 spreadsheets, and hard copy of raw EXCEL 97 files. Lotic macroinvertebrates are stored in an on-site reference collection.

Stakeholders Common to SCBWMI: SCVWD, CCRS

Study Information Verified: Yes

Project Name: 1998 RMP Estuary Interface Pilot Study, Phase II

Overall Purpose: Research

Lead Agencies/Organizations: SFEI

Funding Sources: SCVURPPP, RWQCB, and 77 industrial, municipal, stormwater, cooling water, and dredged material dischargers

Contracted Parties: SFEI

Contact Information:
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Fax: 510-231-9414
Email: rainer@sfei.org

Relevance to SCBWMI: Useful data; Their findings may influence the design of new source and loading components of the RMP.

Goals: Improve data collection and analysis of water-quality monitoring data; determine watershed contribution of pollutants to the Estuary

Objectives: 1) Evaluate 2 years of pollutant data to determine regional applicability of findings; 2) Identify sources of variability that could be minimized using the basic physical watershed characteristics to be assembled as part of the SCBWMI (e.g., flow, rainfall, TSS load, land use, stream channels, storm drains, and impervious surface cover) to develop a pollutant monitoring design at the estuary interface that is regionally applicable.

Study Watersheds and Codes (RWQCB): South Bay Estuary (5101)

Tributaries Sampled in Watersheds: Coyote Creek and Guadalupe River (a.k.a. Alviso Slough)

Sampling Location: Two "transitional" sampling stations south of the San Jose (Standish Dam site) and Sunnyvale local effects monitoring stations at the following coordinates (latitude, longitude as degree, minute, seconds), respectively: 37 27 43, 121 58 32; 37 26 8, 122 0 40.

Sampling Frequency: 2/5 – 2/14, 2/15 – 2/22, 4/22 – 4/29, 7/22 – 7/30, 7/31 – 8/6.

Field Sampling Period: 2/96 – 8/96, annually.

Projected Completion Date: 2/15/00

General Data Types Collected: Physical and chemical for water and sediment.

Detailed Data Description: Water: Total Suspended Sediments, hardness, chlorophyll-a, NO3, NH4, PO4, Si, temp. conductivity, dissolved and (near-) total concentrations of As, Ag, Cd, Zn, Cr, Se, Pb, Copper (Cu), Nickel (Ni), Mercury (Hg), dissolved and particulate trace organic compounds: polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), organochlorine pesticides (such as DDT compounds, chlordane, dieldrin mirex, , and organophosphate pesticides (diazinon and chlorpyrifos). Sediment: grain size, TOC, TN, redox potential, same trace metals as in water plus Al, Mn, and Fe. Same trace organics, except diazinon and chlorpyrifos.

Sampling Protocols: Water sampling: Ultra-clean sampling methods (Flegal and Stukas 1987; EPA Method 1977, 1995); Sediment sampling: modified van Veen grab with a 0.1 m^2 surface area.

Data Format: relational database accessible via customized interface at SFEI's web site: www.sfei.org

Stakeholders Common to SCBWMI: SFEI, SCVURPPP

Study Information Verified: Yes

References:

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