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LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD (LARWQCB)

Agenda Item No. 13, December 13, 2001
Discussion of 2002 Water Quality Assessment Effort and
Update of 303(d) List of Impaired Waterbodies

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

Los Angeles, California
December 13, 2001
448th Regular Board Meeting

ITEM: 13

SUBJECT: Discussion of 2002 Water Quality Assessment effort and update of 303(d) List of Impaired Waterbodies.

PURPOSE: To discuss the schedule and process for updating our Regional Water Quality Assessment and 303(d) List of impaired waterbodies.

BACKGROUND: The federal Clean Water Act (Sections 305(b) and 303(d)) requires states to assess the quality of waters within the state and prepare a list of waterbodies not attaining water quality standards (known as the 303(d) list of water quality limited segments, or impaired waterbodies).

CURRENT STATUS: Staff began soliciting data for the 2002 Water Quality Assessment and 303(d) List in fall 2000. On March 5, 2001, the Regional Board sent another letter to over 1,200 interested parties soliciting water quality data. The deadline for submitting data was May 15, 2001. The data was imported into this system and distributed to staff who analyzed the data to determine whether waterbodies are achieving water quality standards.

Today, staff will present draft recommendations to the Regional Board and hear comments from interested stakeholders. This is an information item for discussion only and staff will then forward the Region's 303(d) list to the State Board for final adoption in early 2002.

DISCUSSION: In the Regional Board's recent water quality assessments, staff have referred to water quality assessment guidelines developed by US EPA as well as clarifying guidance issued by US EPA and the State Board.[1] Attached is the staff report largely based on the 1996 Water Quality Assessment, which explains the water quality assessment guidelines that were used. Staff has reviewed and revised these guidelines as appropriate based on more recent EPA guidance, a review of other states' methodologies, and public input.

A total of 204 changes to the 1998 303(d) list are proposed; 119 new listings are proposed and 85 de-listings are proposed. The net

[1] US EPA. 1997. "Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Report) and Electronic Updates: Supplement." EPA-841-B-97-002B. September 1997; TMDL Workgroup. 1997. "1998 Clean Water Act Section 303(d) Listing Guidelines for California."

change to the 1998 303(d) list is the addition of 34 waterbody segment/pollutant combinations. The proposed de-listings would eliminate 12 TMDL analytical units (one is administratively removed due to an approved TMDL). The proposed new listings would add 8 TMDL analytical units. See Table 4-1 in the staff report for a summary of the proposed changes by watershed and type of impairment.

Of the new listings, 75 are related to water chemistry, water column toxicity and bacterial indicators (see Table 4-2 in staff report), while 44 are related to tissue, sediment or benthic community impairments (see Table 4-3 in staff report). Of the de-listings, 6 are related to water chemistry, water column toxicity and bacterial indicators (see Table 4-4 in staff report), while 79 are related to removal of tissue, sediment or benthic community impairment listings (see Table 4-5 in staff report). The majority of the tissue de-listing are proposed because the original listing was based on tissue concentrations exceeding Elevated Data Levels (EDLs), a guideline that was later determined by the State Board to be insufficient for determining impairment.

ATTACHMENTS:

1. Staff Report
2. Fact Sheets

Draft

Staff Report

2002 Update:

Clean Water Act Section 303(d) List of Impaired Waters

Los Angeles Region

Prepared by
California Regional Water Quality Control Board, Los Angeles Region

December 4, 2001

1 Introduction

Each of California's nine Regional Water Quality Control Boards has been asked to assist the State Board in preparing an update to the State's Clean Water Act Section 303(d) list (SWRCB, 2001). The 303(d) list identifies surface waters that do not or are not expected to attain water quality standards.

1.1 Public Process

Staff of the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) began the process for developing the 303(d) list by conducting two solicitations for data and information. The first was a targeted solicitation in fall 2000 and the second was a solicitation to the Regional Board's entire Basin Planning mailing list in spring 2001. The spring solicitation lasted from March 6, 2001 to May 15, 2001 (LARWQCB, 2001). On March 14, 2001, the State Water Resources Control Board (State Board) also sent a letter to interested persons requesting that data be sent to the Regional Boards to aid in updating the 303(d) list. Approximately 35 discrete datasets or sources of information were received; the majority of these were submitted by major NPDES dischargers and particularly Publicly Owned Treatment Works (POTWs).

Regional Board staff also solicited comments on the proposed assessment methodology to be used in the 2002 update of the 303(d) list. Staff presented the proposed methodology as an information item at a special meeting of the Regional Board on May 31, 2001. Interested persons were given until June 30, 2001 to provide comments on the proposed methodology. Staff also gave a presentation on the proposed methodology at a regularly scheduled meeting of the Southern California Association of POTWs (SCAP) and presented an early draft of the 2002 update to the 303(d) list to SCAP on October 16, 2001. Comments received by the Regional Board will be included in the submittal package to State Board.

Finally, staff held a public workshop on November 19, 2001 to discuss proposed changes to the 1998 303(d) list and will present staff's recommended changes to the Regional Board as an Information Item at a Board meeting on December 13, 2001.

1.2 Overview of Report

The update to the 1998 303(d) list includes recommendations for new listings of water bodies and pollutants as well as for de-listings. This document describes the methodology that was used to complete the regional assessment of water quality and to identify recommended changes to the 303(d) list of impaired surface waters within the Los Angeles Region. The specific factors for each recommended change to the 1998 303(d) list are described in a Fact Sheet (see attached). Fact sheets are not included for water bodies where there was insufficient data to complete an assessment or if new data support existing listings.

2 Factors Considered in Recommending Changes to the 303(d) List

2.1 Listing Factors

Water bodies and associated pollutants were recommended for addition to the 303(d) list if any one of the following factors was met:

1. Effluent limitations or other pollution control requirements (e.g., BMPs) are not stringent enough to assure protection of beneficial uses and attainment of water quality objectives outlined in the Basin Plan and in statewide water quality control plans, including those implementing SWRCB Resolution No. 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California."
2. Fishing, drinking water, or swimming advisory currently in effect.
3. Beneficial uses are impaired or are expected to be impaired within the listing cycle (i.e., in the next four years). Impairment is based upon evaluation of chemical, physical, or biological integrity. Impairment was determined based upon physical/chemical monitoring, bacteriological monitoring, toxicity tests, bioassessment and/or habitat monitoring, and other monitoring data such as fish tissue data, sediment chemistry and sediment toxicity. Applicable Basin Plan water quality objectives, Federal water quality criteria (e.g., CTR criteria), US EPA recommended water quality criteria, or criteria or guidelines developed by other state or federal agencies determine the basis for impairment status.
4. The water body is on the previous 303(d) list and either (a) monitoring continues to demonstrate a violation of objectives or (b) monitoring has not been performed.
5. Data indicate tissue concentrations in consumable body parts of fish or shellfish exceed applicable tissue criteria or guidelines. Criteria used to assess tissue impairments were Maximum Tissue Residual Levels.

2.2 Delisting Factors

Water bodies were recommended for removal from the list for specific pollutants or stressors if any one of the following factors was met:

1. The original listing was based on exceeding EDLs (Elevated Data Levels) or other assessment guidelines not considered appropriate or outdated.
2. It has been documented that the objectives are being met and beneficial uses are not impaired based upon an evaluation of available monitoring data.
3. A TMDL has been approved by the US EPA for that specific water body and pollutant (see 40 CFR 130.7(b)(4)).
4. There are control measures in place that will result in protection of beneficial uses. Control measures include permits, clean up and abatement orders, and Basin Plan requirements which are enforceable and include a time schedule (see 40 CFR 130.7(b)(1)(iii)).

3 Assessment Criteria

The Regional Board's water quality assessment follows USEPA (1997) guidance as outlined in the *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement* and generally follows the

methodology used in the 1996 water quality assessment prepared by the Regional Board (LARWQCB, 1996). The USEPA guidance specifies that seven broad beneficial use categories should be assessed in the 305(b) Reports; the federal beneficial uses evaluated in this assessment report and the corresponding Regional beneficial uses and water quality objectives used to assess these uses are listed in Table 3-1. Several regional beneficial uses are not assessed in this report including aquaculture, hydropower generation, freshwater replenishment, navigation, industrial process supply and industrial service supply.

Each of these federal beneficial uses is assessed according to the following designations: fully supporting, fully supporting but threatened, partially supporting, not supporting, and not assessed. The fully supporting but threatened category relates to waterbodies where a use is supported but may not be in the future unless pollution prevention or control action is taken. Waterbodies that are assessed as fully supporting but threatened, partially supporting, or not supporting are considered "impaired" and are proposed for listing on the federal Clean Water Act 303(d) list of impaired waters.

Table 3-1. Correlation between Federal and Regional Beneficial Uses and Associated Water Quality Objectives

Federal Beneficial Use	Regional Beneficial Use	Water Quality Objectives
Fish consumption	Commercial and sport fishing	Fish consumption advisories; tissue MTRLs
Shellfish harvesting	Shellfish harvesting	Shellfish harvesting advisories
Aquatic life	Warm freshwater habitat	CTR acute and chronic aquatic life criteria; ammonia; DO; pH; solid, suspended & settleable material; floating material; water column toxicity; tissue MTRLs; sediment ERM and PEL guidelines; sediment toxicity; benthic infauna
	Cold freshwater habitat	
	Estuarine habitat	
	Wetland habitat	
	Marine habitat	
	Wildlife habitat	
	Preservation of biological habitat	
	Rare, threatened, or endangered species	
	Migration of aquatic organisms	
	Spawning, reproduction, and/or early development	
Swimming or primary contact recreation	Water contact recreation	Total coliform; fecal coliform; beach closures; beach postings
Secondary contact recreation	Non-contact recreation	Fecal coliform
Drinking water supply (raw water)	Municipal and domestic supply	Title 22 Primary MCLs; nitrogen species
	Ground water recharge	
Agriculture	Agricultural supply	Water quality objectives from Table 3-8

When comparing data against standards, the "worst case approach" is used. That is, if one parameter, such as ammonia, dissolved oxygen or a trace metal, indicates impairment for a particular use, the waterbody is designated as impaired for the use affected by this parameter. For example, a waterbody that is not supporting the aquatic life use due to high ammonia concentrations and is partially supporting the use due to elevated metal concentrations would be given an overall classification of "not supporting."

Each watershed in the region is divided into waterbody reaches (a specified segment of river or creek) and lakes or reservoirs that match those designated in the 1994 Water Quality Control Plan (hereafter referred to as Basin Plan). The one exception to this is in the Calleguas Creek watershed, where through the TMDL process the reaches have been redefined (see Appendix 1 for the new reach definitions). Not all reaches had sufficient data to assess all uses, and in many cases no uses could be assessed for a particular reach. If there were multiple sampling stations within a reach, the data were aggregated and analysis was performed for the entire reach. Therefore, in general, entire reaches are assessed rather than portions of a reach.

To aid in future assessments, staff has identified all potential sources of pollutants to the extent possible. However, for many waterbodies, data are not sufficient to link specific sources to specific pollutants.

Some beneficial uses, notably agriculture and in some cases aquatic life and contact recreation, are impaired due to constituents that have naturally high concentrations within a watershed or subwatershed. Examples of these constituents include total dissolved solids, chlorides, boron and sulfate that are leached from rock formations. In some lakes and estuaries, coliform counts may be high due to a large population of waterfowl. Though natural sources may be contributing to the impairment - not enough information is available at this point to classify any of the affected uses as "unattainable" – therefore, water bodies are still listed as impaired even if the source is likely natural. The source of these impairments will be carefully evaluated during the TMDL process.

The US EPA *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports): Supplement* (1997) provides formulas for conducting assessment of five of the 305(b) beneficial uses (assessment methodologies are not given for the secondary contact recreation use or agriculture use). The Regional Board followed US EPA guidelines where such guidelines were applicable. These guidelines are described below. Additional guidelines and criteria were developed to assess other beneficial uses (agriculture and non-contact recreation) and for other data types (i.e., tissue, sediment, benthic community, water column toxicity) not addressed in the 1997 guidelines. A summary of the guidelines used in this assessment is presented below.

For water chemistry and bacteriological data, a minimum requirement of ten data points over a three-year period was determined to be necessary for conducting an assessment of any reach/pollutant combination. For tissue, sediment, bioassessment and toxicity data, a weight of evidence approach was used, as described below.

3.1 Aquatic Life Assessment Guidelines

Aquatic life use support can be determined based on *bioassessments, habitat assessments, toxicity assessments* and/or *physical/chemical data.*

Most of the aquatic life use support assessments in the Los Angeles Region are based on physical and chemical water, as well as sediment, toxicity and bioaccumulation data. Physical and chemical data (water column) includes toxic substances (priority pollutants, chlorine and ammonia) and conventional constituents or stressors (dissolved oxygen, pH, and temperature). The assessment guidelines, based on USEPA's guidance document, are shown in Table 3-2. Regional Board staff developed additional guidelines for tissue, sediment and benthic community data lacking detailed US EPA guidelines. These are also described below.

Water chemistry objectives for aquatic life use support are drawn from the region's 1994 Basin Plan and the California Toxics Rule (CTR). Note that the metals data are compared to dissolved criteria, where data were expressed as total recoverable a conversion factor was used to determine the dissolved fraction. In addition, metals criteria in the CTR are hardness dependent; therefore, the event-specific hardness is used to determine the appropriate limit. If no hardness data were available, the default hardness value of 400 mg/L was used.

The Regional Board has recently initiated a comprehensive regional bioassessment monitoring program, known as the Surface Water Ambient Monitoring Program (SWAMP) and expects to use data collected under this program in future assessments. However, for this assessment, the Regional Board used best professional judgement to indicate only a few localized habitat-related problems such as areas of high sedimentation and impairment of benthic communities.

Table 3-2. Assessment Guidelines for Aquatic Life Use Support (USEPA, 1997)

Assessment Designation	Assessment Guidelines
Bioassessment	
Fully supporting	Reliable data indicates functioning, sustainable biological communities (e.g., macroinvertebrates, fish, or algae) none of which has been modified significantly beyond the natural range of the reference condition.
Partially supporting	At least one assemblage (e.g., macroinvertebrates, fish, or algae) indicates moderate modification of the biological community compared to the reference condition.
Not supporting	At least one assemblage indicates nonsupport. Data clearly indicate severe modification of the biological community compared to the reference condition.
Fish tissue data	
Fully supporting	Reliable data indicates fish tissue concentrations below predator risk thresholds.
Partially supporting	No guideline
Not supporting	Data indicates fish tissue concentrations above predator risk thresholds.

Assessment Designation	Assessment Guidelines
Habitat assessment	
Fully supporting	Reliable data indicate natural channel morphology, substrate composition, bank/riparian structure, and flow regime of region. Riparian vegetation of natural types and of relatively full standing crop biomass (i.e., minimal grazing or disruptive pressure).
Partially supporting	Modification of habitat slight to moderate usually due to road crossings, limited riparian zones because of encroaching land use patterns, and some watershed erosion. Channel modification slight to moderate.
Not supporting	Moderate to severe habitat alteration by channelization and dredging activities, removal of riparian vegetation, bank failure, heavy watershed erosion or alteration of flow regime.
Aquatic life use support: Aquatic and/or sediment toxicity data	
Fully supporting	No toxicity noted in either acute or chronic tests compared to controls or reference conditions.
Partially supporting	No toxicity noted in acute tests, but may be present in chronic tests in either slight amounts and/or infrequently within annual cycles.
Not supporting	Toxicity noted in many tests and occurs frequently.
Aquatic life use support: Water column toxic substances (priority pollutants listed in the California Toxics Rule, trace metals, ammonia)	
Fully supporting	For any one pollutant, no more than 1 violation of chronic criteria and no more than 1 violation of acute criteria within a 3-year period based on at least 10 grab or 1-day composite samples. If fewer than 10 samples are available, then best professional judgement is used considering the number of pollutants having violations and the magnitude of the exceedance(s).
Partially supporting	For any one pollutant, acute or chronic criteria exceeded more than once within a 3-year period, but in <= 10 percent of samples.
Not supporting	For any one pollutant, acute or chronic criteria exceeded in > 10 percent of samples.
Aquatic life use support: Water column conventional constituents and stressors (DO, pH)	
Fully supporting	For any one pollutant or stressor, criteria exceeded in <= 10 percent of measurements.
Partially supporting	For any one pollutant or stressor, criteria exceeded in 11 to 25 percent of measurements.
Not supporting	For any one pollutant or stressor, criteria exceeded in > 25 percent of measurements.

3.1.1 Aquatic life assessment guidelines: Tissue, sediment and benthic community data

Lacking US EPA guidelines, the Regional Board developed assessment guidelines for sediment chemistry, sediment toxicity, benthic infaunal community and bioaccumulation (tissue) data for the purposes of this water quality assessment report. These general guidelines are described below and in Table 3-3. The primary sources of monitoring data were the Bay Protection and Toxic Cleanup Program (BPTCP) database, the State Mussel Watch Program (SMW) database and the Toxic Substances Monitoring Program (TSM) database. The BPTCP database provided primarily sediment chemistry, sediment toxicity and benthic infaunal community data. The SMW database provided primarily tissue contaminant levels from mussels (either transplanted or resident species) and limited sediment chemistry data. The TSM database provided primarily tissue contaminant levels from various fish species.

Special studies provided additional monitoring data for Marina del Rey (The Marine Environment of Marina del Rey Harbor, Report to the Department of Beaches and Harbors, County of Los Angeles by Aquatic Bioassay and Consulting Laboratories, July 1995-June 1996; July 1996-June 1997; July 1997-June 1998; July 1998-June 1999), Los Angeles River Estuary (Final Environmental Assessment for Los Angeles River Estuary Maintenance Dredging, Long Beach California, Prepared by Department of the Army, Corps of Engineers, Los Angeles District, July 1997; Results of Physical, Chemical and Bioassay Testing of Sediments Collected from the Los Angeles River Estuary, Report to U.S. Army Corps of Engineers, Los Angeles District by MEC Analytical Systems, September, 1998), Ballona Creek Estuary (Report of Testing of Sediments Collected from Marina del Rey Harbor, California, Submitted to U.S. Army Corps of Engineers, Los Angeles District by MEC Analytical Sysems, February 1998; February 1999) and Port Hueneme (The Port of Hueneme, California, Deep Draft Navigation Feasibility Study, Final Feasibility Report, US Army Corps of Engineers, Los Angeles District, August 1999).

BPTCP, SMW and TSM data not previously reviewed for the 1996 Water Quality Assessment were included in the current assessment. Therefore, in general, monitoring data from 1994 through 1998 comprised the main source of information reviewed for the assessment. Preliminary data from the SMW and TSM programs for 1999 and 2000 were not included in this review, since quality control/quality assessment review of these data has not been completed. Monitoring data from the Bight98 coastal ocean monitoring program were not included in this review, since the final reports from the study have not been completed and the data have not been released to the public.

Nearly all of the sediment toxicity data reviewed was generated by the BPTCP. Only sediment toxicity test results based on amphipod survival (using either Rhepoxynius abronius or Eohaustorius estuarius) were used for the assessment. Sediments were characterized as "toxic" if there was a significant difference in mean survival between a sample and the control and if the magnitude of this difference was biologically significant (e.g., 20 % difference in survival between sample and control) (Sediment Chemistry, Toxicity and Benthic Community Conditions in Selected Water Bodies of the Los Angeles Region, Final

Report to California State Water Resources Control Board, Bay Protection and Toxic Cleanup Program by California Department of Fish and Game, August 1998).

Nearly all of the benthic infaunal community data also was generated by the BPTCP. The health of the benthic community was evaluated through the use of a Relative Benthic Index (RBI) developed for the program (Sediment Chemistry, Toxicity and Benthic Community Conditions in Selected Water Bodies of the Los Angeles Region, Final Report to California State Water Resources Control Board, Bay Protection and Toxic Cleanup Program by California Department of Fish and Game, August 1998). Calculated RBI values range from 0.00 (most impacted) to 1.00 (least impacted). The benthic infaunal community was deemed to be significantly impacted at RBI values less than or equal to 0.30. Impacted stations generally have a low total number of species present, few crustacean species, the presence of negative (pollution tolerant) species and absence of positive (pollution sensitive) species.

Sediment chemistry pollutant concentrations were compared to existing sediment quality guideline values proposed for evaluation of sediment contamination. These guidelines were developed through empirical observation of large data sets, containing matching sediment chemistry and biological effects (toxicity) data to provide guidance for evaluating the probability that measured contaminant concentrations may contribute to observed biological effects. Although these values have not been adopted as water quality standards, sediment concentrations that exceed the "probable effects level" are usually associated with toxicity.

Two different "probable effects level" measures (see Table 3-2) have been used for this assessment: the Effects Range-Median (ERM) values developed by the National Oceanographic and Atmospheric Administration (Long, E.R., L.J. Field and D.D. MacDonald, 1998, Predicting Toxicity in Marine Sediments with Numerical Sediment Quality Guidelines, Environmental Toxicology and Chemistry 17(4):714-727) and the Probably Effects Level (PEL) developed by the State of Florida (MacDonald, D.D., 1994, Approach to the Assessment of Sediment Quality in Florida Coastal Waters, Prepared for the Florida Department of Environmental Regulation, MacDonald Environmental Services, Ltd., Ladysmith, British Columbia). If sediment concentrations for a given pollutant exceeded either or both of the probable effects level thresholds, sediments were deemed to be impaired due to this constituent.

Tissue contaminant concentrations were compared to maximum tissue residue levels (MTRLs) developed for use in evaluating data collected by the SMW and TSMP (Del Rasmussen, State Water Resources Control Board, Division of Water Quality, personal communication). These MTRLs are based on water quality objectives adopted by the State of California (e.g., California Ocean Plan, California Toxics Rule) and are calculated using human health consumption criteria and bioconcentration factors recommended by the US EPA. If tissue concentrations of a given pollutant exceeded MTRL values, the organism was deemed to be impaired due to this constituent.

Assessment of Impairment. Beneficial uses have been listed as impaired based upon exceedances of the thresholds or guidelines described above, heavily influenced by best professional judgement. We often have only a limited number of sample results for a given

waterbody, due to the expense of collecting and analyzing sediment chemistry, sediment toxicity, benthic infaunal community and bioaccumulation data. Therefore, we have required a minimum number of two samples to assess each waterbody. We prefer to use a weight of evidence approach to determine impairment of beneficial uses. Ideally, we look for both contamination of the environment (i.e., sediment chemistry exceedances) and adverse biological impacts (i.e., sediment toxicity, bioaccumulation or benthic community degradation). Unfortunately, for many waterbodies, we lack sediment chemistry data and have relied only upon biological impact measures to determine impairment. However, we have not listed beneficial uses as impaired solely on the basis of sediment chemistry exceedances.

We have removed listings of impairment in cases where recent data suggests that the beneficial use is no longer impacted, due to improvements in water quality reflected by elimination of previously observed exceedances of thresholds or guidelines. We also have removed listings of impairment in cases where the previous listings were based on thresholds or guidelines that are now deemed to be technically inappropriate or have become outdated (e.g., Elevated Data Levels calculated from the BPTCP, SMW or TSM databases; National Academy of Science maximum concentration levels for some toxic substances in human foods; Food and Agriculture Organization of the United Nations survey of health protection criteria used by member nations) (refer to Toxic Substances Monitoring Program 1994-95 Data Report by State Water Resources Control Board, October 1997, for a discussion of EDLs, NAS and MIS guidelines) or where standards have changed (e.g., MTRLs for arsenic and chromium no longer exist, since the California Toxics Rule does not include human health consumption criteria for these compounds).

Table 3-3. Assessment guidelines for sediment and bioaccumulation

Constituent	***Sediment ERM***	***Sediment PEL***	***Tissue MTRL (inland)***	***Tissue MTRL (bay/estuary)***	***Tissue MTRL (ocean)***
Arsenic	70 ppm	41.6 ppm			
Cadmium	9.6 ppm	4.21 ppm			
Chromium	370 ppm	160.4 ppm			
Copper	270 ppm	108.2 ppm			
Lead	218 ppm	112.2 ppm			
Mercury	0.7 ppm	0.7 ppm	0.37 ppm	0.37 ppm	
Nickel	51.6 ppm	42.8 ppm	28.7 ppm	220 ppm	
Silver	3.7 ppm	1.77 ppm			
Zinc	410 ppm	271 ppm			
Aldrin			0.05 ppb	0.33 ppb	0.1 ppb
Total chlordane	6 ppb	4.79 ppb	8.0 ppb	8.3 ppb	0.32 ppb

Constituent	*Sediment ERM*	*Sediment PEL*	*Tissue MTRL (inland)*	*Tissue MTRL (bay/estuary)*	*Tissue MTRL (ocean)*
P,p'-DDD			44.5 ppb	44.5 ppb	
P,p'-DDE	27 ppb	374.17 ppb	32.0 ppb	32.0 ppb	
P,p'-DDT		4.77 ppb	32.0 ppb	32.0 ppb	9.1 ppb
Total DDT	45.1 ppb	51.7 ppb			
Dieldrin			0.65 ppb	0.7 ppb	0.2 ppb
Endosulfan I			29700 ppb	64800 ppb	
Endosulfan II			29700 ppb	64800 ppb	
Endosulfan sulfate			29700 ppb	64800 ppb	
Endrin	45 ppb		3020 ppb	3020 ppb	
Alpha HCH			0.5 ppb	1.7 ppb	
Beta HCH			1.8 ppb	6.0 ppb	
Gamma HCH		0.99 ppb	2.5 ppb	8.2 ppb	
Heptachlor			2.4 ppb	2.3 ppb	8.1 ppb
Heptachlor epoxide			1.1 ppb	1.2 ppb	
HCB			6.5 ppb	6.7 ppb	2.0 ppb
Total PCB	180 ppb	188.8 ppb	5.3 ppb	5.3 ppb	0.6 ppb
Toxaphene			9.6 ppb	9.8 ppb	2.75 ppb
Total PAH	44792 ppb	16771 ppb			

3.2 Recreational Use Assessment Guidelines

One of the goals of the federal Clean Water Act is that all waterbodies of the nation be "swimmable." Many of the waterbodies of the Los Angeles region are designated as "swimmable" or usable for water contact recreation. Some of these designated waterbodies, however, are inaccessible due to gates and fences installed for flood control or drinking water reservoir protection purposes. In spite of this, residents, homeless individuals and occasionally children often gain access and use these areas. Therefore, all waterbodies with a water contact recreation use have been included in this report.

Assessment of primary contact recreational uses is based on closure and posting data for bathing areas and coliform bacteria data (Table 3-4). Bathing closure and posting data was acquired from the State Board, which compiles this data on an annual basis from local health departments. Inland surface water coliform data is not collected on a frequent basis; only

fecal coliform standards are used. Dry weather beach data are collected frequently, weekly or daily, in the surfzone by major ocean dischargers and by the Los Angeles County Department of Health Services. Wet weather coliform data is collected less frequently in general. Beach data are compared to Ocean Plan standards, which include both total and fecal coliform objectives.

Additional factors such as persistent scum, oily films, excessive algae growth, significant trash, and persistent observations of non-natural foam and/or odor were also considered where data were available.

3.2.1 Secondary Contact Recreation Use

Most of the waterbodies of the region are also designated for non-contact recreational use. This use includes activities where water is not normally ingested. The assessment for this use includes many of the same factors as for primary contact recreation, but the standards are less stringent for coliform bacteria.

Table 3-4. Assessment Guidelines for Recreational Use Support

Water contact and non contact recreation: Total and fecal coliform	
Fully supporting	Geometric mean fecal coliform objective met and/or 10% threshold fecal coliform objective met.
Partially supporting	Geometric mean met, but greater than 10% of samples exceed fecal coliform density of 400 per 100 ml or total coliform density of 10,000 per 100 ml, or greater than 20% of samples exceed total coliform density of 1,000 per 100 ml.
Not supporting	Geometric mean exceeded.
Water contact recreation: Beach postings	
Fully supporting	Less than 10% of days per year of beach postings due to high bacterial indicator densities.
Partially supporting	No guideline
Not supporting	Greater than 10% of days per year of beach postings due to high bacterial indicator densities.
Water contact recreation: Beach and inland bathing area closure	
Fully supporting	No bathing area closures or restrictions in effect during past 3 years.
Partially supporting	On average, one bathing area closure per year of less than 1 week's duration.
Not supporting	On average, one bathing area closure per year of greater than 1 week's duration, or more than one bathing area closure per year.

3.3 Fish and Shellfish Consumption Use

Fish and shellfish consumption use is assessed based on status of fishing advisories and bioaccumulation data. Guidelines for use of advisory data are listed in Table 3-5. Bioaccumulation standards are described above under aquatic life use.

Table 3-5. Assessment Guidelines for Fish/Shellfish Consumption Use

Fish and shellfish consumption use: Advisories	
Fully supporting	No fish or shellfish restrictions or bans are in effect.
Partially supporting	"Restricted consumption" of fish or shellfish in effect; or a fish or shellfish ban in effect for a subpopulation that could be at potentially greater risk, for one or more fish or shellfish species.
Not supporting	"No consumption" of fish or shellfish ban in effect for general population, for one or more fish or shellfish species; or commercial fishing or shellfishing ban in effect.

3.4 Drinking Water Use Assessment Guidelines

Assessment of the use of waterbodies in the region for drinking water is based on concentrations of constituents that are regulated for drinking water. In this 305(b) report, ambient or raw (untreated) surface and ground waters are assessed. (Note that such water would be treated and disinfected, in accordance with requirements from the State Department of Health Services, prior to distribution for potable use). Contaminants that are generally not source-water related (e.g., corrosion byproducts, lead or copper from distribution system, or TTHMs) are not considered. Assessment of waterbodies for drinking water use differs from other uses in that median rather than mean of data is considered. Table 3-6 lists the guidelines for assessment.

Currently, all waterbodies in the region are designated as at a minimum potential MUN per the 1988 State Board Sources of Drinking Water Policy (SODW). A large number of waterbodies, however, were footnoted in the 1994 Basin Plan as being eligible for review and possible exemption status. The Regional Board staff is currently working toward a long-term policy for regulating water bodies designated potential MUN under the SODW policy. Waterbodies that were designated potential MUN under the SODW are assessed using Title 22 standards only.

Table 3-6. Assessment Guidelines for Drinking Water Use (MUN)

Municipal and Domestic Supply: Chemical constituents (Title 22, nitrogen species)	
Fully supporting	No contaminants where the median concentration exceeds the state water quality standard.
Fully supporting but threatened	No contaminants where the median concentration exceeds the state water quality standards, but greater than 10% of samples exceed the objective.
Partially supporting	The median concentration of a contaminant(s) exceeds water quality standards.
Not supporting	No guideline

3.5 Agriculture Use and Waterbody-specific Objectives Assessment Guidelines

Water quality standards can vary by area and by crop. Due to a lack of state or federal standards, assessment of water quality for agricultural use is based upon local guidelines specified in Table 3-8 of the Basin Plan. The Basin Plan also includes waterbody specific objectives for TDS, Sulfate, Chloride, Boron, Nitrogen and SAR. These are assessed using the guidelines in Table 3-7.

Table 3-7. Assessment Guidelines for Agriculture Use and Waterbody Specific Objectives

Agriculture use and Waterbody-specific objectives: Chemical constituents	
Fully supporting	For any one pollutant or stressor, criteria exceeded in <= 10 percent of measurements or observations.
Partially supporting	For any one pollutant or stressor, criteria exceeded in 11 to 25 percent of measurements or observations.
Not supporting	For any one pollutant or stressor, criteria exceeded in > 25 percent of measurements or observations.

4 Summary of Assessment Results

A total of 204 changes to the 1998 303(d) list are proposed; 119 new listings are proposed and 85 de-listings are proposed. The net change to the 1998 303(d) list is the addition of 34 waterbody segment/pollutant combinations. See Table 4-1 for a summary of the proposed changes by watershed and type of impairment.

Of the new listings, 75 are related to water chemistry, water column toxicity and bacterial indicators (see Table 4-2), while 44 are related to tissue, sediment or benthic community impairments (see Table 4-3). The new listings based on water chemistry, water column toxicity and bacterial indicators are broken down as follows: bacteria (20); metals (18); nitrogen and its effects (14); chloride, TDS, sulfate, boron (14); pH (3); sedimentation (1); DDT in the water column (1); trash (1); toxicity (1); and unnatural foam/scum (1). The new listings based on tissue, sediment or benthic community impairments are broken down as follows: tissue (19); sediment chemistry (19); benthic community degradation (3); and sediment toxicity (3). Note that a single waterbody segment may have multiple impairments (e.g., impairments for tissue and sediment chemistry).

Of the de-listings, 6 are related to water chemistry, water column toxicity and bacterial indicators (see Table 4-4), while 79 are related to removal of tissue, sediment or benthic community impairment listings (see Table 4-5). The water chemistry and water column toxicity de-listings are broken down as follows: dissolved oxygen (3); toxicity (2); and trash (1). The tissue, sediment and benthic community de-listings are broken down as follows: tissue (73); sediment (5); and benthic community (1). The majority of the tissue de-listing are proposed because the original listing was based on tissue concentrations exceeding Elevated Data Levels (EDLs), a guideline that was later determined by the State Board to be insufficient for determining impairment.

The proposed de-listings would eliminate 12 TMDL analytical units as specified in the Consent Decree between the U.S. EPA and Heal the Bay, Inc. et al. filed on March 22, 1999. (One, the East Fork of the San Gabriel River, is administratively removed due to an approved TMDL for Trash.) See Table 4-6. The proposed new listings would add eight new TMDL analytical units as follows: Calleguas Creek bacteria; Ballona Creek pH; Avalon Beach beach postings; San Gabriel River Estuary trash; McCoy Canyon Creek (LA River) nitrate; Santa Clara River salts; Los Cerritos Channel sediment toxicity; and Ventura River bacteria.

Fact sheets are provided for proposed new listings and delistings. In Table 1 of each fact sheet is information that will be included in the 2002 303(d) list, such as the waterbody segment and size affected by the impairment, the pollutant causing the impairment, and the TMDL priority and TMDL start and end dates. Most of the proposed new listings can be folded into existing TMDL Analytical Units specified in the Consent Decree. Deadlines for completion of these TMDL Analytical Units have been scheduled through the Consent Decree. Therefore, instead of assigning a TMDL priority to these proposed new listings, staff identified the existing TMDL Analytical Unit under which the proposed new listing would be placed and indicated the prescribed start and end dates for the TMDL.

In cases where the proposed new listing could not be folded into an existing TMDL Analytical Unit, staff identified the new listing as a low priority, to be started after the Consent Decree commitments are met. The assignment of a low priority to these new TMDL analytical units is not a reflection on their importance, but is given because the Regional Board must first meet existing Consent Decree commitments before beginning new TMDLs. These new TMDL analytical units would be started no sooner than 2011 and end no later than 2014, twelve years after the original listing of the waterbody and pollutant combination.

Table 4-1. Summary of Proposed Changes to 303(d) List

Watershed	New Listings		Delistings		Total changes to 303(d) List	Net change to 303(d) List
	Water column	Tissue/Sed	Water column	Tissue/Sed		
Ballona Creek	6	0	0	8	14	-2
Los Angeles River	9	4	0	4	17	9
San Gabriel River	7	0	1	2	10	4
Santa Clara River	13	0	0	1	14	12
Malibu Creek	2	0	0	6	8	-4
Ventura River	5	2	0	8	15	-1
Calleguas Creek	24	16	5	34	79	1
LA County Coastal	2	14	0	12	28	4
Ventura County Coastal	7	8	0	4	19	11
Total	75	44	6	79	204	34

Table 4-2: Preliminary Draft New Listings for 2002 303(d) List - Water Chemistry, Water Column Toxicity and Bacterial Indicators

Watershed	Waterbody	Waterbody Type	Cause	Priority	Analytical Unit	Start Date	End Date
Ballona Creek	Ballona Creek	R	Aluminum		57	2002	2004
Ballona Creek	Ballona Creek	R	Copper, dissolved		57	2002	2004
Ballona Creek	Ballona Creek	R	Lead, dissolved		57	2002	2004
Ballona Creek	Ballona Creek	R	pH	L	none	2011	2013
Ballona Creek	Ballona Creek	R	Selenium		57	2002	2004
Ballona Creek	Ballona Creek	R	Zinc, dissolved		57	2002	2004
Calleguas Creek	All (except Conejo Ck.)	R	Sedimentation		5	2003	2005
Calleguas Creek	Arroyo Las Posas R1/R2 (Reach 6)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Arroyo Las Posas R1/R2 (Reach 6)	R	Nitrate as NO3		1	1997	Apr-02
Calleguas Creek	Arroyo Simi (Reach 7)	R	Water column toxicity		2	2003	2005
Calleguas Creek	Arroyo Simi R1 (Reach 7)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Calleguas Creek R1 (Reach 2)	R	Copper		6	2004	2006
Calleguas Creek	Calleguas Creek R1 (Reach 2)	R	DDT (in water column)		5	2003	2005
Calleguas Creek	Calleguas Creek R1 (Reach 2)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek (Reach 9B)	R	Unnatural foam/scum	L	none	2011	2013
Calleguas Creek	Conejo Creek R 1 (Reach 9A)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek R 2 (Reach 10)	R	Chloride		3	1998	Jan-02
Calleguas Creek	Conejo Creek R 2 (Reach 10)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek R 2 (Reach 10)	R	Nitrite as N		1	Jun-05	Apr-02
Calleguas Creek	Conejo Creek R 3 (Reach 11)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek R 3 (Reach 13)	R	Chloride		3	1998	Jan-02
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	NITRATE (AS NITROGEN)		1	1997	Apr-02
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	NITRATE (AS NO3)		1	1997	Apr-02
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	NITRITE (AS NITROGEN)		1	1997	Apr-02
Calleguas Creek	Revolon Slough (Reach 4)	R	Boron		4	1998	2004
Calleguas Creek	Revolon Slough (Reach 4)	R	Chloride		3	1998	Jan-02
Calleguas Creek	Revolon Slough (Reach 4)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Revolon Slough (Reach 4)	R	Nitrate as NO3		1	1997	Apr-02
Calleguas Creek	Revolon Slough (Reach 4)	R	Sulfate		4	1998	2004
Calleguas Creek	Revolon Slough (Reach 4)	R	Total Dissolved Solids		4	1998	2004
LA County Coastal	Avalon Beach	C	Beach postings	L	none	2011	2013
LA County Coastal	Castlerock Beach	C	Total Coliform		48	2000	2002
Los Angeles River	Dry Canyon Creek (LAR R 2)	R	Fecal Coliform		15	2000	Jun-02
Los Angeles River	Dry Canyon Creek (LAR R 2)	R	Selenium		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Aluminum, total		13	2002	2004

Table 4-2: Preliminary Draft New Listings for 2002 303(d) List - Water Chemistry, Water Column Toxicity and Bacterial Indicators

Watershed	Waterbody	Waterbody Type	Cause	Priority	Analytical Unit	Start Date	End Date
Los Angeles River	Los Angeles River - Reach 1	R	Cadmium, dissolved		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Copper, dissolved		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Zinc, dissolved		13	2002	2004
Los Angeles River	McCoy Canyon Creek (LAR R 2)	R	Fecal Coliform		15	2000	Jun-02
Los Angeles River	McCoy Canyon Creek (LAR R 2)	R	Nitrate	L	none	2012	2014
Los Angeles River	McCoy Canyon Creek (LAR R 2)	R	Selenium		13	2002	2004
Malibu Creek	Cold Creek	R	Algae		50	1999	2002
Malibu Creek	Malibu Creek	R	Selenium, total		68	2006	2008
San Gabriel R	Coyote Creek	R	Copper, dissolved		39	2004	2006
San Gabriel R	Coyote Creek	R	Selenium, total		39	2004	2006
San Gabriel R	Coyote Creek	R	Zinc, dissolved		39	2004	2006
San Gabriel R	Reach 1	R	Nitrite as N		37	2001	2003
San Gabriel R	Reach 2	R	Copper, dissolved		39	2004	2006
San Gabriel R	Reach 2	R	Zinc, dissolved		39	2004	2006
San Gabriel R	San Gabriel River Estuary	R	Trash	L	none	2011	2012
Santa Clara R	Hopper Creek	R	Sulfate	L	none	2012	2014
Santa Clara R	Hopper Creek	R	TDS	L	none	2012	2014
Santa Clara R	Piru Creek	R	pH		32	2001	2003
Santa Clara R	Pole Creek	R	Sulfate	L	none	2012	2014
Santa Clara R	Pole Creek	R	TDS	L	none	2012	2014
Santa Clara R	Reach 3	R	Nitrate as N		32	2001	2003
Santa Clara R	Reach 3	R	Nitrite as N		32	2001	2003
Santa Clara R	Reach 3	R	Nitrite+Nitrate as N		32	2001	2003
Santa Clara R	Reach 3	R	TDS	L	none	2012	2014
Santa Clara R	Sespe Creek	R	Chloride		31	1998	Feb-02
Santa Clara R	Sespe Creek	R	pH		32	2001	2003
Santa Clara R	Todd Barranca	R	Sulfate	L	none	2012	2014
Santa Clara R	Todd Barranca	R	TDS	L	none	2012	2014
Ventura County Coastal	McGrath Lake (Estuary)	R	Fecal Coliform		23	2001	2003
Ventura County Coastal	Ormond Beach (Industrial Drain - #4	C	Beach postings		23	2001	2003
Ventura County Coastal	Peninsula Beach (#23000)	C	Beach postings		23	2001	2003
Ventura County Coastal	Rincon Beach (Creek mouth - #1000	C	Beach postings		23	2001	2003
Ventura County Coastal	Rincon Beach (Flagpole - #1050)	C	Beach postings		23	2001	2003
Ventura County Coastal	Rincon Creek	R	Fecal Coliform		23	2001	2003
Ventura County Coastal	Surfer's Point ("Stables" - #13000)	C	Beach postings		23	2001	2003

Table 4-2: Preliminary Draft New Listings for 2002 303(d) List - Water Chemistry, Water Column Toxicity and Bacterial Indicators

Watershed	Waterbody	Waterbody Type	Cause	Priority	Analytical Unit	Start Date	End Date
Ventura R	Canada Larga	R	Dissolved Oxygen		88	2003	2005
Ventura R	Canada Larga	R	Fecal Coliform (E. coli)	L	none	2012	2114
Ventura R	Estuary	E	Fecal Coliform	L	none	2012	2014
Ventura R	Estuary	E	Total Coliform	L	none	2012	2014
Ventura R	San Antonio Creek (Tributary to Rea	R	Total Nitrogen		88	2003	2005

Table 4-3: Preliminary Draft New Listings for 2002 303(d) List - Sediment Chemistry, Sediment Toxicity, Tissue Chemistry and Benthic Community

Watershed	Waterbody	Waterbody Type	Cause	Priority	TMDL Analytical Unit	Start Date	End Date
Calleguas Creek	Arroyo Simi R1 (Moorpark Fwy to Brea Canyon)	R	Tissue (DDT)		5	2002	2005
Calleguas Creek	Arroyo Simi R1 (Moorpark Fwy to Brea Canyon)	R	Tissue (PCBs)		5	2002	2005
Calleguas Creek	Calleguas Creek R 1	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Calleguas Creek R 1	R	Tissue (HCH)		5	2002	2005
Calleguas Creek	Calleguas Creek R 2	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Calleguas Creek R 2	R	Tissue (HCH)		5	2002	2005
Calleguas Creek	Conejo Creek (confluence to Santa Rosa Rd)	R	Tissue (chlordane)		5	2002	2005
Calleguas Creek	Conejo Creek (confluence to Santa Rosa Rd)	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Conejo Creek (confluence to Santa Rosa Rd)	R	Tissue (HCH)		5	2002	2005
Calleguas Creek	Conejo Creek (confluence to Santa Rosa Rd)	R	Tissue (PCBs)		5	2002	2005
Calleguas Creek	Duck Pond Ag Drain/Mugu Drain/Oxnard Drain #2	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Duck Pond Ag Drain/Mugu Drain/Oxnard Drain #2	R	Tissue (HCB)		5	2002	2005
Calleguas Creek	Mugu Lagoon	W	Benthic community degradation		5	2002	2005
Calleguas Creek	Mugu Lagoon	W	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Mugu Lagoon	W	Tissue (toxaphene)		5	2002	2005
Calleguas Creek	Rio de Santa Clara/Oxnard Drain #3	R	Tissue (dieldrin)		8	2006	2009
Dominguez Channel	Estuary	E	Sediment (chlordane)		73	2005	2008
Dominguez Channel	Estuary	E	Sediment (copper)		75	2004	2007
Dominguez Channel	Estuary	E	Sediment (PCBs)		73	2005	2008
Dominguez Channel	Estuary	E	Sediment toxicity		73	2005	2008
LA County Coastal	LA Harbor Consolidated Slip	B	Sediment (arsenic)		75	2004	2007
LA County Coastal	LA Harbor Consolidated Slip	B	Sediment (cadmium)		75	2004	2007
LA County Coastal	LA Harbor Consolidated Slip	B	Sediment (copper)		75	2004	2007
LA County Coastal	LA Harbor Consolidated Slip	B	Sediment (mercury)		75	2004	2007
LA County Coastal	LA Harbor Consolidated Slip	B	Sediment (nickel)		75	2004	2007
LA County Coastal	LA Harbor Consolidated Slip	B	Tissue (dieldrin)		73	2005	2008
LA County Coastal	LA Harbor Consolidated Slip	B	Tissue (toxaphene)		73	2005	2008
LA County Coastal	Los Cerritos Channel	R	Sediment (chlordane)	L	none	2012	2014
LA County Coastal	Los Cerritos Channel	R	Sediment toxicity	L	none	2012	2014
LA County Coastal	Marina del Rey Back Basins	B	Sediment (PCBs)		54	2002	2005
LA River	Estuary (Queensway Bay)	E	Sediment (chlordane)		73	2005	2008
LA River	Estuary (Queensway Bay)	E	Sediment (DDT)		73	2005	2008
LA River	Estuary (Queensway Bay)	E	Sediment (lead)		75	2004	2007
LA River	Estuary (Queensway Bay)	E	Sediment (PCBs)		73	2005	2008
Ventura County Coastal	McGrath Lake (Estuary)	E	Benthic community degradation		25	2004	2007
Ventura County Coastal	McGrath Lake (Estuary)	E	Sediment (dieldrin)		25	2004	2007
Ventura County Coastal	McGrath Lake (Estuary)	E	Sediment (PCBs)		25	2004	2007
Ventura County Coastal	McGrath Lake Ag Drain	R	Benthic community degradation		25	2004	2007

Table 4-3: Preliminary Draft New Listings for 2002 303(d) List - Sediment Chemistry, Sediment Toxicity, Tissue Chemistry and Benthic Community

Watershed	Waterbody	Waterbody Type	Cause	Priority	TMDL Analytical Unit	Start Date	End Date
Ventura County Coastal	McGrath Lake Ag Drain	R	Sediment (chlordane)		25	2004	2007
Ventura County Coastal	McGrath Lake Ag Drain	R	Sediment (DDT)		25	2004	2007
Ventura County Coastal	McGrath Lake Ag Drain	R	Sediment (dieldrin)		25	2004	2007
Ventura County Coastal	McGrath Lake Ag Drain	R	Sediment toxicity		25	2004	2007
Ventura R	Reach 2	R	Tissue (chlordane)		87	2003	2006
Ventura R	Reach 2	R	Tissue (gamma-HCH)		87	2003	2006

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Table 4-4: Preliminary Draft De-listings for 2002 303(d) List - Water Chemistry and Water Column Toxicity

Watershed	Waterbody	Waterbody Type	Cause	TMDL Analytical Unit
Calleguas Creek	Calleguas Creek R1 (Reach 2)	R	Water column toxicity	2
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	Org. enrich/low DO	1
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	Water column toxicity	2
Calleguas Creek	Conejo Creek Reach 2 (Reach 10)	R	Org. enrich/low DO	1
Calleguas Creek	Conejo Creek Reach 3 (Reach 11)	R	Org. enrich/low DO	1
San Gabriel R	East Fork	R	Trash	38

Table 4-5: Preliminary Draft De-listings for 2002 303(d) List - Sediment Chemistry, Sediment Toxicity, Tissue Chemistry and Benthic Community

Watershed	Waterbody	Waterbody Type	Cause	TMDL Analytical Unit	Rationale for De-listing
Ballona Creek	Ballona Creek	R	Tissue (arsenic)	57	no MTRL
Ballona Creek	Ballona Creek	R	Tissue (ChemA)	55	based on outdated NAS guideline
Ballona Creek	Ballona Creek	R	Tissue (Copper)	57	based on EDL
Ballona Creek	Ballona Creek	R	Tissue (Lead)	57	based on EDL
Ballona Creek	Ballona Creek	R	Tissue (Silver)	57	based on EDL
Ballona Creek	Ballona Creek	R	Tissue (TBT)	70	no guideline
Ballona Creek	Ballona Creek Estuary	E	Sediment (arochlor)	55	Waterbody already listed for PCBs generally
Ballona Creek	Ballona Creek Wetlands	W	Tissue (arsenic)	57	no MTRL
Calleguas Creek	Arroyo Simi R1 (Moorpark Fwy to Brea Cyn)	R	Tissue (Chromium)	6	based on EDL
Calleguas Creek	Arroyo Simi R1 (Moorpark Fwy to Brea Cyn)	R	Tissue (Nickel)	6	based on EDL
Calleguas Creek	Arroyo Simi R1 (Moorpark Fwy to Brea Cyn)	R	Tissue (Selenium)	6	based on EDL
Calleguas Creek	Arroyo Simi R1 (Moorpark Fwy to Brea Cyn)	R	Tissue (Silver)	6	based on EDL
Calleguas Creek	Arroyo Simi R1 (Moorpark Fwy to Brea Cyn)	R	Tissue (Zinc)	6	based on EDL
Calleguas Creek	Calleguas Creek R 2	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Calleguas Creek R 2	R	Tissue (dacthal)	5	based on EDL
Calleguas Creek	Calleguas Creek R1	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Conejo Creek R1	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Conejo Creek R2	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Conejo Creek R3	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Conejo Creek R4	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Conejo Creek Reach 1 (Confl w/ Calleguas to Santa Rosa Rd)	R	Tissue (Cadmium)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 1 (Confl w/ Calleguas to Santa Rosa Rd)	R	Tissue (Chromium)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 1 (Confl w/ Calleguas to Santa Rosa Rd)	R	Tissue (Dacthal)	5	based on EDL
Calleguas Creek	Conejo Creek Reach 1 (Confl w/ Calleguas to Santa Rosa Rd)	R	Tissue (Nickel)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 1 (Confl w/ Calleguas to Santa Rosa Rd)	R	Tissue (Silver)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 2 (Santa Rosa Rd to TO City limit)	R	Tissue (Cadmium)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 2 (Santa Rosa Rd to TO City limit)	R	Tissue (Chromium)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 2 (Santa Rosa Rd to TO City limit)	R	Tissue (Dacthal)	5	based on EDL
Calleguas Creek	Conejo Creek Reach 2 (Santa Rosa Rd to TO City limit)	R	Tissue (Nickel)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 2 (Santa Rosa Rd to TO City limit)	R	Tissue (Silver)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 3 (TO to Lynn Rd)	R	Tissue (Cadmium)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 3 (TO to Lynn Rd)	R	Tissue (Chromium)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 3 (TO to Lynn Rd)	R	Tissue (Dacthal)	5	based on EDL
Calleguas Creek	Conejo Creek Reach 3 (TO to Lynn Rd)	R	Tissue (Nickel)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 3 (TO to Lynn Rd)	R	Tissue (Silver)	6	based on EDL
Calleguas Creek	Conejo Creek Reach 4 (Above Lynn Rd)	R	Tissue (Dacthal)	5	based on EDL
Calleguas Creek	Duck Pond Ag Drain/Mugu Drain/Oxnard Drain #2	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Mugu Lagoon	E	Tissue (Dacthal)	5	no defensible guideline
Calleguas Creek	Revolon Slough Main Branch	R	Sediment (dacthal)	5	no defensible guideline
Calleguas Creek	Revolon Slough Main Branch	R	Tissue (ChemA)	5	based on outdated NAS guideline
Calleguas Creek	Revolon Slough Main Branch	R	Tissue (dacthal)	5	based on EDL
Calleguas Creek	Rio de Santa Clara/Oxnard Drain #3	R	Tissue (ChemA)	8	based on outdated NAS guideline
LA County Coastal	Colorado Lagoon	T	Tissue (Lead)	83	based on EDL
LA County Coastal	Harbor Park Lake (Machado Lake)	L	Tissue (ChemA)	73	based on outdated NAS guideline
LA County Coastal	LA Fish Harbor	B	Tissue (TBT)	79	no guideline
LA County Coastal	LA Harbor Consolidated Slip	B	Tissue (Tributyltin)	79	no guideline
LA County Coastal	LA Harbor Consolidated Slip	B	Tissue (Zinc)	75	no guideline
LA County Coastal	LA Harbor Inner Breakwater	B	Tissue (TBT)	79	no guideline

Table 4-5: Preliminary Draft De-listings for 2002 303(d) List - Sediment Chemistry, Sediment Toxicity, Tissue Chemistry and Benthic Community

Watershed	Waterbody	Waterbody Type	Cause	TMDL Analytical Unit	Rationale for De-listing
LA County Coastal	LA Harbor Main Channel	B	Tissue (TBT)	79	no guideline
LA County Coastal	Marina del Rey (Back Basins)	B	Benthic Community Effects	54	no stations below threshold for significant degradation
LA County Coastal	Marina del Rey (Back Basins)	B	Sediment (DDT)	54	sediment concentrations below the level of concern
LA County Coastal	Marina del Rey (Back Basins)	B	Tissue (Copper)	56	based on EDL
LA County Coastal	Marina del Rey (Back Basins)	B	Tissue (TBT)	70	no guideline
LA County Coastal	Marina del Rey (Back Basins)	B	Tissue (Zinc)	56	no guideline
Los Angeles R	Lake Calabasas	L	Tissue (Copper)	68	based on EDL
Los Angeles R	Lake Calabasas	L	Tissue (Zinc)	68	based on EDL
Los Angeles R	Los Angeles River Reach 5 (at Sepulveda Basin)	R	Tissue (ChemA)	18	based on outdated NAS guideline
Los Angeles R	Los Angeles River Reach 5 (at Sepulveda Basin)	R	Tissue (chlorpyrifos)	14	based on EDL
Malibu Creek	Lake Lindero	L	Tissue (Selenium)	68	based on indefensible MIS guideline
Malibu Creek	Malibou Lake	L	Tissue (chlordane)	61	concentrations lower than MTRL
Malibu Creek	Malibou Lake	L	Tissue (Copper)	68	based on EDL
Malibu Creek	Malibou Lake	L	Tissue (PCBs)	61	non-detects for several years
Malibu Creek	Westlake Lake	L	Tissue (chlordane)	61	original listing based on 6.6 ppb which is <MTRL
Malibu Creek	Westlake Lake	L	Tissue (Copper)	68	based on EDL
San Gabriel R	Coyote Creek	R	Tissue (Silver)	39	based on EDL
San Gabriel R	Estuary	E	Tissue (arsenic)	39	no MTRL
Santa Clara R	Santa Clara River Estuary	E	Tissue (ChemA)	33	based on outdated NAS guideline
Ventura County Coastal	McGrath Lake (Estuary)	L	Sediment (total pesticides)	25	no defensible guideline available
Ventura County Coastal	Port Hueneme Harbor (Back Basins)	B	Sediment (PAHs)	27	low levels based on ACOE data
Ventura County Coastal	Port Hueneme Harbor (Back Basins)	B	Tissue (TBT)	30	no guideline
Ventura County Coastal	Port Hueneme Harbor (Back Basins)	B	Tissue (Zinc)	28	no guideline
Ventura R	Estuary	E	Tissue (DDT)	87	concentration below MTRL
Ventura R	Reach 1	R	Tissue (Copper)	90	based on EDL
Ventura R	Reach 1	R	Tissue (Silver)	90	based on EDL
Ventura R	Reach 1	R	Tissue (Zinc)	90	based on EDL
Ventura R	Reach 2	R	Tissue (Copper)	90	based on EDL
Ventura R	Reach 2	R	Tissue (Selenium)	92	based on EDL
Ventura R	Reach 2	R	Tissue (Silver)	90	based on EDL
Ventura R	Reach 2	R	Tissue (Zinc)	90	based on EDL

Table 4-6. TMDL Analytical Units to be Removed based on Proposed De-listings

Analytical Unit	Waterbodies	Pollutants
14	LA River Reach 5	Chlorpyrifos
18	LA River Reach 5	ChemA
27	Port Hueneme Harbor	PAHs
28	Port Hueneme Harbor	Zinc
30	Port Hueneme Harbor	TBT
38	East Fork San Gabriel River	Trash
61	Westlake Lake and Malibou Lake	Chlordane, PCBs
70	Ballona Creek/Marina del Rey	TBT
79	LA Harbor	TBT
87	Ventura River Estuary	DDT
90	Ventura River Reaches 1 & 2	Copper, Zinc, Silver
92	Ventura River Reach 2	Selenium

303 (d) Fact Sheet

Ballona Creek Watershed

11/19/01

California Regional Water Quality Control Board, Los Angeles Region

Ballona Creek Watershed
Dissolved Copper

Summary of Proposed Action

Ballona Creek is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the dissolved copper acute and chronic water quality criteria for protection of freshwater aquatic life. This creek is already listed for elevated levels of copper in sediment and tissue. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Ballona Creek**	**Pollutants/Stressors**	Copper
Hydrologic Unit	405.13	**Source(s)**	Non-point sources
Total Waterbody Size	10 miles	**TMDL Priority**	Analytical Unit 57
Size Affected	4.3 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Ballona Creek to Estuary	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

Ballona Creek flows slightly over 10 miles from Los Angeles through Culver City, reaching the ocean at Playa del Rey. Except for the estuary of Ballona Creek which is composed of grouted rip-rap side slopes and an earth bottom, Ballona Creek is completely channelized and extends into a complex underground network of stormdrains which reaches to Beverly Hills and West Hollywood, draining 130 square miles of highly developed land, with both residential and commercial land uses. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Adjacent to the downstream channel of Ballona Creek are the Marina del Rey Harbor, Ballona Lagoon and Venice Canals, Del Rey Lagoon and Ballona Wetlands. They are grouped as waterbodies in this subwatershed because of their proximity and various forms of hydrological connection to Ballona Creek. "Ballona Creek to Estuary" is defined from Rodeo Road at Jefferson Boulevard to the estuary.

Water Quality Objectives Not Attained

Through the California Toxics Rule, the U.S. EPA promulgated water quality criteria for priority pollutants for the protection of freshwater aquatic life. The criteria for acute and chronic toxicity for copper are dependent on the hardness of the water. Based on the available hardness data, it was determined that the criteria for acute and chronic copper toxicity were exceeded in 44.7% and 55.3% of the sampling events, respectively.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

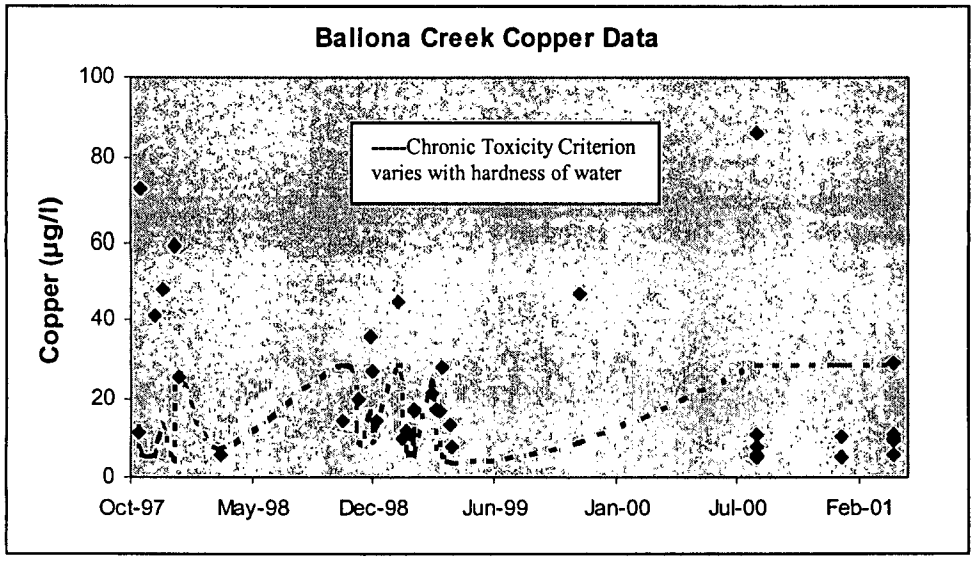


Table 2. Summary of Copper Data for Ballona Creek to Estuary

Dates of Sampling	11/97- 4/01
Number of Samples (n)	38
Minimum Data Value	5 µg/L
Maximum Data Value	86 µg/L
Median Data Value	14.3 µg/L
Arithmetic Mean Value	22 µg/L
Standard Deviation	20 µg/L
Percent above Chronic Criteria	44.7% (acute), 55.3% (chronic)

Potential Sources

Most of the exceedances occurred in stormwater samples collected by the Los Angeles County Department of Public Works Stormwater Monitoring Program. Therefore the most likely source of dissolved copper loading is stormwater runoff. Another potential source is dry-weather urban runoff.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

California Regional Water Quality Control Board, Los Angeles Region

Ballona Creek Watershed
Dissolved Lead

Summary of Proposed Action

Ballona Creek is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the dissolved lead chronic water quality criterion for protection of freshwater aquatic life. This creek is already listed for elevated levels of lead in sediment and tissue. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Ballona Creek**	**Pollutants/Stressors**	Lead
Hydrologic Unit	405.13	**Source(s)**	Non-point sources
Total Waterbody Size	10 miles	**TMDL Priority**	Analytical Unit 57
Size Affected	4.3 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Ballona Creek to Estuary	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

Ballona Creek flows slightly over 10 miles from Los Angeles through Culver City, reaching the ocean at Playa del Rey. Except for the estuary of Ballona Creek which is composed of grouted rip-rap side slopes and an earth bottom, Ballona Creek is completely channelized and extends into a complex underground network of stormdrains which reaches to Beverly Hills and West Hollywood, draining 130 square miles of highly developed land, with both residential and commercial land uses. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Adjacent to the downstream channel of Ballona Creek are the Marina del Rey Harbor, Ballona Lagoon and Venice Canals, Del Rey Lagoon and Ballona Wetlands. They are grouped as waterbodies in this subwatershed because of their proximity and various forms of hydrological connection to Ballona Creek. "Ballona Creek to Estuary" is defined from Rodeo Road at Jefferson Boulevard to the estuary.

Water Quality Objectives Not Attained

Through the California Toxics Rule, the U.S. EPA promulgated water quality criteria for priority pollutants for the protection of freshwater aquatic life. The criteria for acute and chronic toxicity for lead are dependent on the hardness of the water. Based on the available hardness data, it was determined that the criterion for chronic lead toxicity was exceeded in 13.2% of the sampling events.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

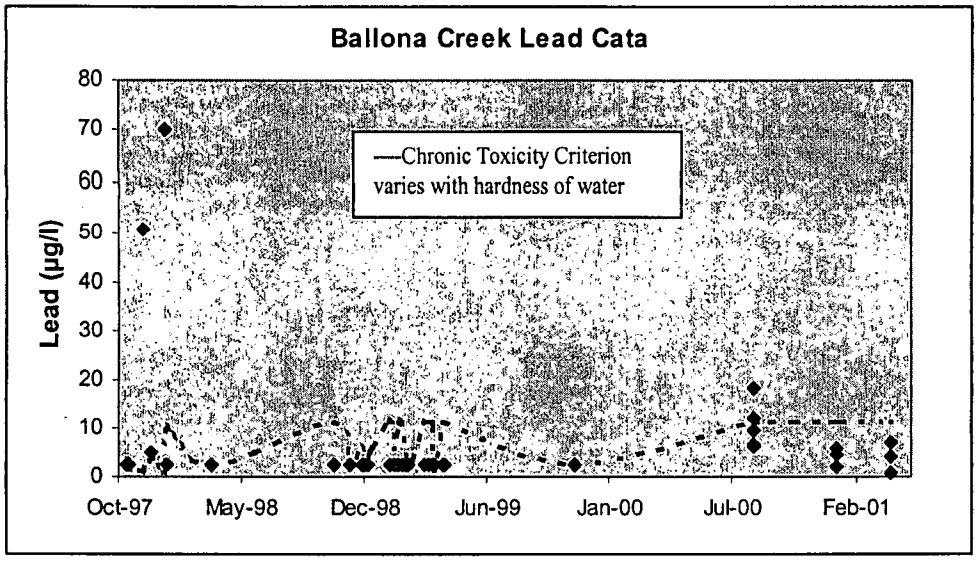


Table 2. Summary of Lead Data for Ballona Creek to Estuary

Dates of Sampling	11/97 – 04/01
Number of Samples (n)	38
Minimum Data Value	1 µg/l
Maximum Data Value	70 µg/l
Median Data Value	2.5 µg/l
Arithmetic Mean Value	6.9 µg/l
Standard Deviation	13.4 µg/l
Percent above Chronic Criterion	13.2%

Potential Sources

Most of the exceedances occurred in stormwater samples collected by the Los Angeles County Department of Public Works Stormwater Monitoring Program. Therefore the most likely source of dissolved lead loading is stormwater runoff. Another potential source is dry-weather urban runoff.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

California Regional Water Quality Control Board, Los Angeles Region

Ballona Creek Watershed
Dissolved Zinc

Summary of Proposed Action

Ballona Creek is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the dissolved zinc acute and chronic water quality criteria for protection of freshwater aquatic life. The beneficial uses affected by this impairment relate to aquatic life use support and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Ballona Creek**	**Pollutants/Stressors**	Zinc
Hydrologic Unit	405.13	**Source(s)**	Non-point sources
Total Waterbody Size	10 miles	**TMDL Priority**	Analytical Unit 57
Size Affected	4.3 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Ballona Creek to Estuary	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

Ballona Creek flows slightly over 10 miles from Los Angeles through Culver City, reaching the ocean at Playa del Rey. Except for the estuary of Ballona Creek which is composed of grouted rip-rap side slopes and an earth bottom, Ballona Creek is completely channelized and extends into a complex underground network of stormdrains which reaches to Beverly Hills and West Hollywood, draining 130 square miles of highly developed land, with both residential and commercial land uses. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Adjacent to the downstream channel of Ballona Creek are the Marina del Rey Harbor, Ballona Lagoon and Venice Canals, Del Rey Lagoon and Ballona Wetlands. They are grouped as waterbodies in this subwatershed because of their proximity and various forms of hydrological connection to Ballona Creek. "Ballona Creek to Estuary" is defined from Rodeo Road at Jefferson Boulevard to the estuary.

Water Quality Objectives Not Attained

Through the California Toxics Rule, the U.S. EPA promulgated water quality criteria for priority pollutants for the protection of freshwater aquatic life. The criteria for acute and chronic toxicity for zinc are dependent on the hardness of the water. Based on the available hardness data, it was determined that the acute and chronic criteria for zinc were exceeded in 12.8% of the sampling events. The more recent data indicates compliance with criteria. If this continues zinc can be removed from the list in the next cycle.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

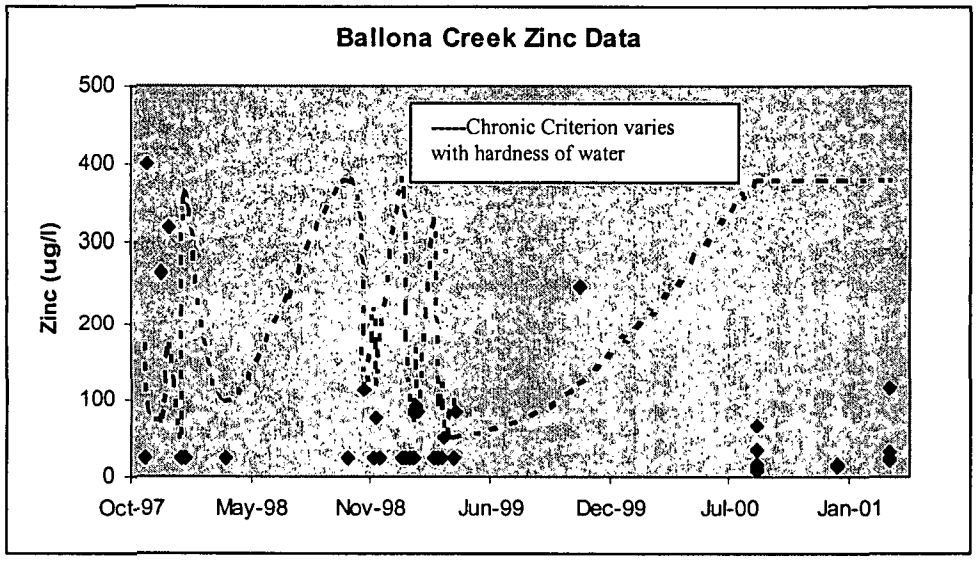


Table 2. Summary of Zinc Data for Ballona Creek to Estuary

Dates of Sampling	11/97 – 4/01
Number of Samples (n)	39
Minimum Data Value	57.6µg/l
Maximum Data Value	400 µg/l
Median Data Value	25 µg/l
Arithmetic Mean Value	64.7 µg/l
Standard Deviation	90 µg/l
Percent above Chronic Criterion	12.8% (for both acute and chronic)

Potential Sources

All of the exceedances occurred in stormwater samples collected by the Los Angeles County Department of Public Works Stormwater Monitoring Program. Therefore the most likely source of dissolved zinc loading is stormwater runoff.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

California Regional Water Quality Control Board, Los Angeles Region

Ballona Creek Watershed
pH

Summary of Proposed Action

Ballona Creek is proposed to be listed in the 2002 305(b) water quality assessment as partially supporting (impaired) due to greater than ten percent (10%) exceedance of the pH water quality standard outlined in the Basin Plan. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Ballona Creek**	**Pollutants/Stressors**	pH
Hydrologic Unit	405.13	**Source(s)**	Non-point sources
Total Waterbody Size	10 miles	**TMDL Priority**	Low
Size Affected	4.3 miles	**TMDL Start Date (Mo/Yr)**	2011.
Extent of Impairment	Ballona Creek to Estuary	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

Ballona Creek flows slightly over 10 miles from Los Angeles through Culver City, reaching the ocean at Playa del Rey. Except for the estuary of Ballona Creek which is composed of grouted rip-rap side slopes and an earth bottom, Ballona Creek is completely channelized and extends into a complex underground network of stormdrains which reaches to Beverly Hills and West Hollywood, draining 130 square miles of highly developed land, with both residential and commercial land uses. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Adjacent to the downstream channel of Ballona Creek are the Marina del Rey Harbor, Ballona Lagoon and Venice Canals, Del Rey Lagoon and Ballona Wetlands. They are grouped as waterbodies in this subwatershed because of their proximity and various forms of hydrological connection to Ballona Creek. "Ballona Creek to Estuary" is defined from Rodeo Road at Jefferson Boulevard to the estuary.

Water Quality Objectives Not Attained

The Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties contains water quality standards for the protection of beneficial uses of waterbodies in the region. The allowable range for pH is between 6.5 to 8.5. Analysis of available data determined that the upper limit for pH was exceeded in 17.5% of the sampling events.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

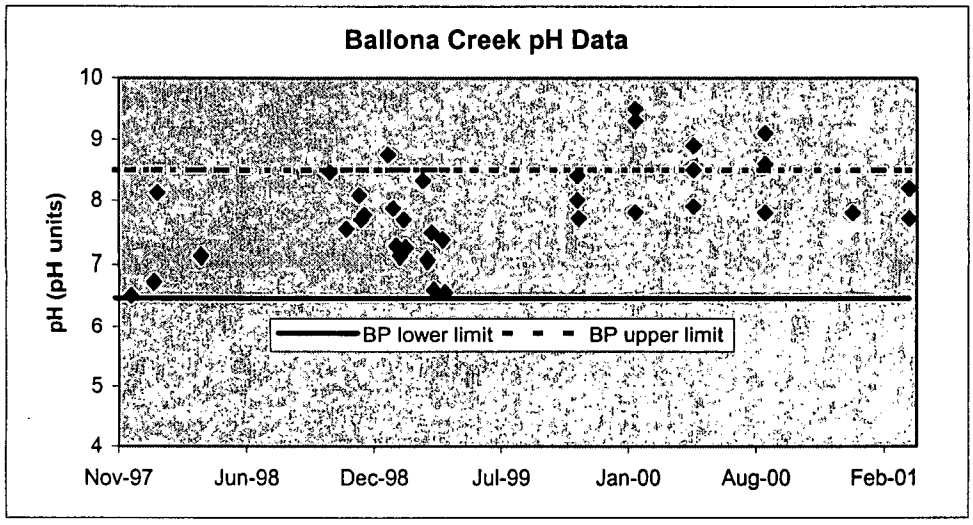


Table 2. Summary of pH Data for Ballona Creek to Estuary

Dates of Sampling	11/97 – 4/01
Number of Samples (n)	40
Minimum Data Value	6.54
Maximum Data Value	9.5
Median Data Value	7.8
Arithmetic Mean Value	7.84
Standard Deviation	0.76
Percent above Upper Limit	17.5%

Potential Sources

Possible sources include urban and stormwater runoff.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000

California Regional Water Quality Control Board, Los Angeles Region

Ballona Creek Watershed
Total Aluminum

Summary of Proposed Action

Ballona Creek is proposed to be listed in the 2002 305(b) water quality assessment as fully supporting but threatened (impaired) due to greater than ten percent (10%) exceedance of the total aluminum water quality criteria for protection of potential drinking water sources. The beneficial use affected by this impairment is the potential for municipal and domestic supply (MUN).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Ballona Creek**	**Pollutants/Stressors**	Aluminum
Hydrologic Unit	405.13	**Source(s)**	Non-point sources
Total Waterbody Size	10 miles	**TMDL Priority**	Analytical Unit 57
Size Affected	4.3 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Ballona Creek to Estuary	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

Ballona Creek flows slightly over 10 miles from Los Angeles through Culver City, reaching the ocean at Playa del Rey. Except for the estuary of Ballona Creek which is composed of grouted rip-rap side slopes and an earth bottom, Ballona Creek is completely channelized and extends into a complex underground network of stormdrains which reaches to Beverly Hills and West Hollywood, draining 130 square miles of highly developed land, with both residential and commercial land uses. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Adjacent to the downstream channel of Ballona Creek are the Marina del Rey Harbor, Ballona Lagoon and Venice Canals, Del Rey Lagoon and Ballona Wetlands. They are grouped as waterbodies in this subwatershed because of their proximity and various forms of hydrological connection to Ballona Creek. "Ballona Creek to Estuary" is defined from Rodeo Road at Jefferson Boulevard to the estuary.

Water Quality Objectives Not Attained

Title 22 of the California Code of Regulations specifies maximum contaminant levels for drinking water supplies. These maximum contaminant levels (MCLs) are incorporated into the Basin Plan as water quality objectives to protect the MUN beneficial use. The objective for aluminum is 1 mg/l. Analysis of available data determined that this limit was exceeded in 15.8% of the sampling events. The more recent data indicates compliance with criteria. If this trend continues, aluminum can be removed from the list in the next cycle.

Beneficial Uses Affected

- Potential Municipal and Domestic Supply

Data Assessment

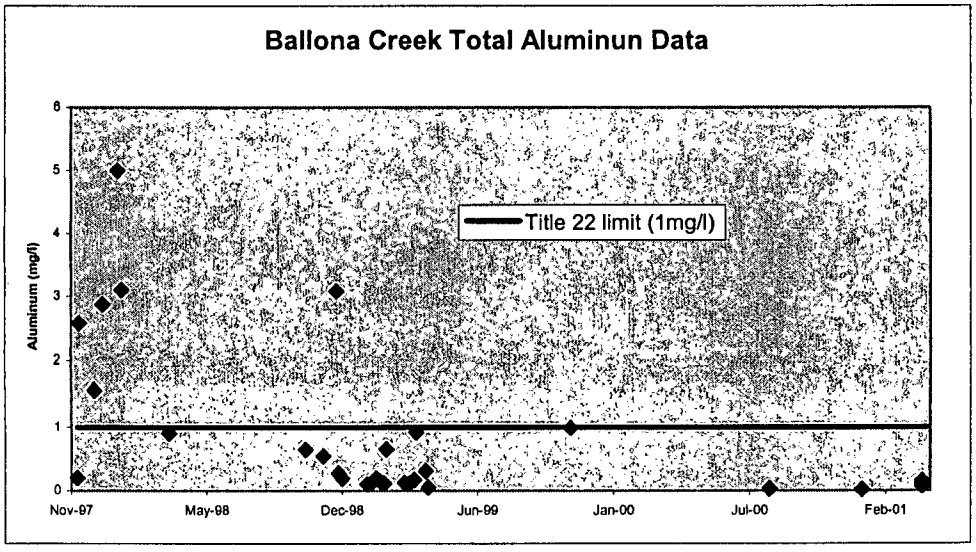


Table 2. Summary of Total Aluminum Data for Ballona Creek to Estuary

Dates of Sampling	11/97 – 4/01
Number of Samples (n)	38
Minimum Data Value	0.01 mg/l
Maximum Data Value	5 mg/l
Median Data Value	0.15 mg/l
Arithmetic Mean Value	0.68 mg/l
Standard Deviation	1.1 mg/l
Percent above Chronic Criterion	15.8%

Potential Sources

All of the exceedances occurred in stormwater samples collected by the Los Angeles County Department of Public Works Stormwater Monitoring Program. Therefore the most likely source of total aluminum loading is stormwater runoff.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000

California Regional Water Quality Control Board, Los Angeles Region

Ballona Creek Watershed
Total Selenium

Summary of Proposed Action

Ballona Creek is proposed to be listed in the 2001 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the total selenium chronic water quality criterion for protection of freshwater aquatic life. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Ballona Creek**	**Pollutants/Stressors**	Selenium
Hydrologic Unit	405.13	**Source(s)**	Non-point sources
Total Waterbody Size	10 miles	**TMDL Priority**	Analytical Unit 57
Size Affected	4.3 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Ballona Creek to Estuary	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

Ballona Creek flows slightly over 10 miles from Los Angeles through Culver City, reaching the ocean at Playa del Rey. Except for the estuary of Ballona Creek which is composed of grouted rip-rap side slopes and an earth bottom, Ballona Creek is completely channelized and extends into a complex underground network of stormdrains which reaches to Beverly Hills and West Hollywood, draining 130 square miles of highly developed land, with both residential and commercial land uses. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Adjacent to the downstream channel of Ballona Creek are the Marina del Rey Harbor, Ballona Lagoon and Venice Canals, Del Rey Lagoon and Ballona Wetlands. They are grouped as waterbodies in this subwatershed because of their proximity and various forms of hydrological connection to Ballona Creek. "Ballona Creek to Estuary" is defined from Rodeo Road at Jefferson Boulevard to the estuary.

Water Quality Objectives Not Attained

The California Toxic Rule established Recommended Water Quality criteria for the protection of freshwater aquatic life. The recommended limit for chronic toxicity for total selenium is 5ug/l. This was exceeded in 12 % of the sampling events.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

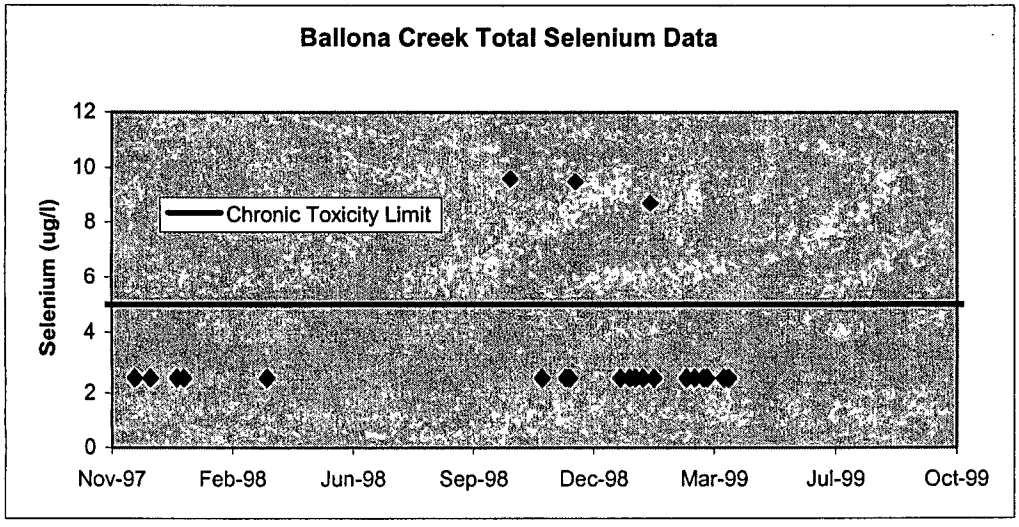


Table 2. Summary of Total Selenium Data for Ballona Creek to Estuary

Dates of Sampling	11/97 – 11/99
Number of Samples (n)	25
Minimum Data Value	2.5 µg/l
Maximum Data Value	9.6 µg/l
Median Data Value	2.5 µg/l
Arithmetic Mean Value	3.3 µg/l
Standard Deviation	2 µg/l
Percent above Objective	12%

Potential Sources

All of the exceedances occurred in stormwater samples collected by the Los Angeles County Department of Public Works Stormwater Monitoring Program. Therefore the most likely source of total selenium loading is stormwater run-off.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

303 (d) Fact Sheets

Calleguas Creek Watershed

11/19/01

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 2
Dissolved Copper

Summary of Proposed Action

Calleguas Creek Reach 2, at the mouth of Calleguas Creek, is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the California Toxics Rule acute and chronic criteria for dissolved copper. The beneficial use that is affected by this impairment is aquatic life.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 2	Pollutants/Stressors	Copper
Hydrologic Unit	403.11	**Source(s)**	Non-point.
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 2
Size Affected	4.4 Miles	**TMDL Start Date (Mo/Yr)**	2004 – New listing for a current TMDL.
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

Reach 2 of Calleguas Creek is the end of Calleguas Creek, at the mouth of the river where it meets Mugu Lagoon, downstream (south) of Potrero Road. In periods of high flow, it contains water from all areas of Calleguas Creek, including Conejo Creek. This reach has a tidal influence. Sources of water include tile drains, and other sources in Beardsley Wash and Revolon Slough. While its bottom has an impermeable layer, Reach 2 is over the Oxnard Plain groundwater basin, which contains both unconfined and perched aquifers.

Water Quality Objectives Not Attained

- California Toxics Rule Saltwater Aquatic Life Protection, Continuous Concentration (4-day average) and Maximum Concentration (1-hour average.)

Draft 12/03/01

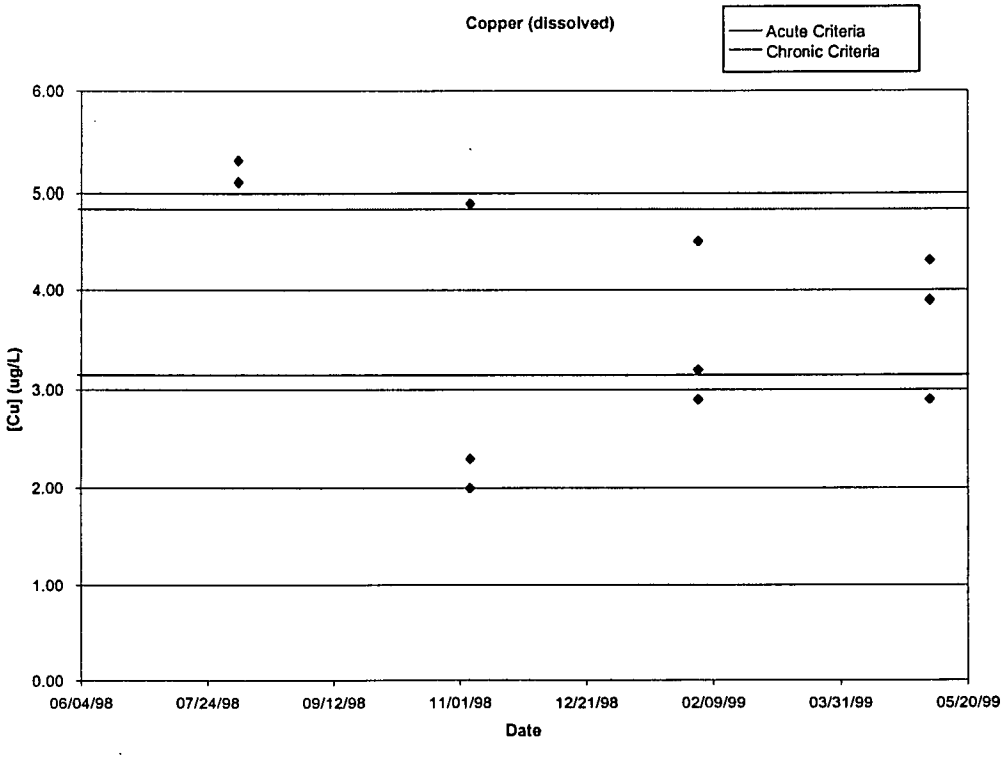
Beneficial Uses Affected

- Estuary
- Biological
- Rare
- Migration
- Spawning

Data Assessment

Table 2. Summary of Copper Data for Calleguas Creek Reach 2

Dates of Sampling	8/98-5/99
Number of Samples (n)	11
Minimum Data Value	2.0 ug/L
Maximum Data Value	5.3 ug/L
Median Data Value	3.9 ug/L
Arithmetic Mean Value	3.75 ug/L
Standard Deviation	1.16 ug/L
Number (Percent) above Objective	7 (64%) for 4 day; 3 (27%) for 1 hour salt water standard



Draft 12/03/01

Potential Sources

Non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
California Toxics Rule 2000
Calleguas Creek Characterization Study 2000
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 2
DDT in the Water Column

Summary of Proposed Action

Calleguas Creek Reach 2, at the mouth of Calleguas Creek, is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the California Toxics Rule chronic criterion for DDT in the water column. This reach is already listed for DDT in tissue and sediment. The beneficial use that is affected by this impairment is aquatic life.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 2	Pollutants/Stressors	DDT in Water
Hydrologic Unit	403.11	**Source(s)**	Non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 6
Size Affected	4.4 Miles	**TMDL Start Date (Mo/Yr)**	2004 – New listing for a current TMDL.
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

Reach 2 of Calleguas Creek is the end of Calleguas Creek, at the mouth of the river where it meets Mugu Lagoon, downstream (south) of Potrero Road. In periods of high flow, it contains water from all areas of Calleguas Creek, including Conejo Creek. This reach has a tidal influence. Sources of water include tile drains, and other sources in Beardsley Wash and Revolon Slough. While its bottom has an impermeable layer, Reach 2 is over the Oxnard Plain groundwater basin, which contains both unconfined and perched aquifers.

Water Quality Objectives Not Attained

- California Toxics Rule Aquatic Life Protection, Continuous Criterion Concentration (4-day average).

Beneficial Uses Affected

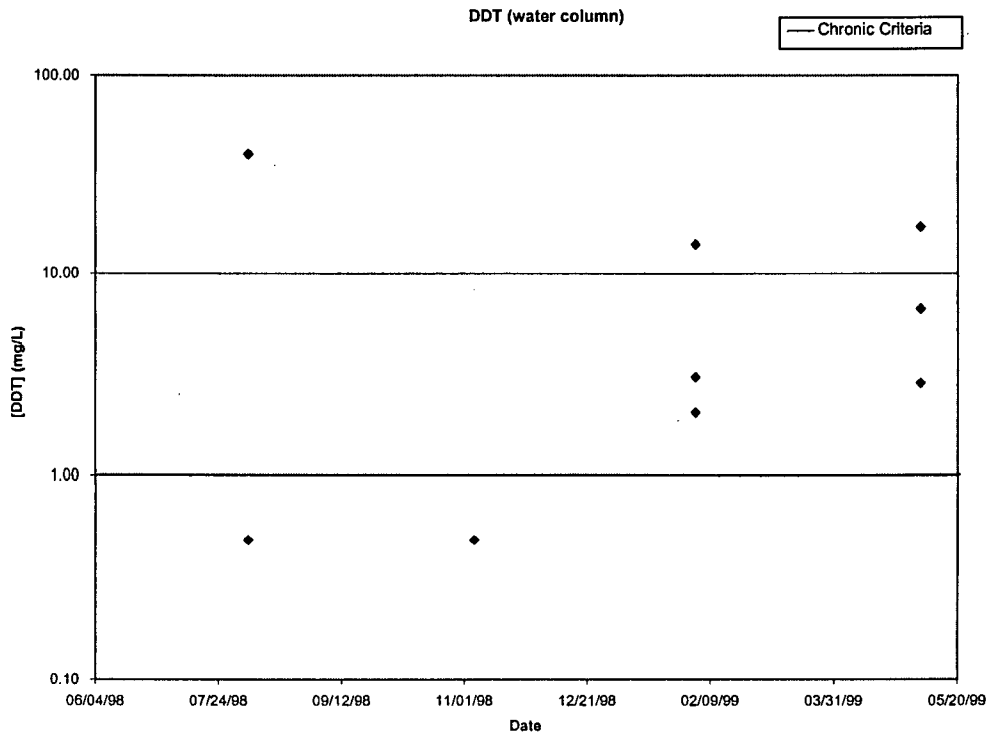
- Estuary
- Biological
- Rare
- Migration
- Spawning

Data Assessment

Table 2. Summary of DDT in the Water Column Data for Calleguas Creek Reach 2

Dates of Sampling	8/98-5/99
Number of Samples (n)	11
Minimum Data Value	<0.50 ng/L
Maximum Data Value	40.3 ng/L
Median Data Value	2.8 ng/L
Arithmetic Mean Value	8.0 ng/L
Standard Deviation	12.6 ng/L
Number (Percent) above Objective	7 (64%) exceed standard of 1 ng/L.

Draft 12/03/01



Potential Sources

Non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
California Toxics Rule 2000
Calleguas Creek Characterization Study 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 2
Fecal Coliform

Summary of Proposed Action

Calleguas Creek Reach 2, at the mouth of Calleguas Creek, is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the Basin Plan objective for fecal coliform. The beneficial use that is affected by this impairment is Water Contact Recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 2	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.11	**Source(s)**	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	Low
Size Affected	4.4 Miles	**TMDL Start Date (Mo/Yr)**	2011
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

Reach 2 of Calleguas Creek is the end of Calleguas Creek, at the mouth of the river where it meets Mugu Lagoon, downstream (south) of Potrero Road. In periods of high flow, it contains water from the rest of Calleguas Creek, including Conejo Creek. This reach has a tidal influence. Sources of water include tile drains, and other sources in Beardsley Wash and Revolon Slough. While its bottom has an impermeable layer, Reach 2 is over the Oxnard Plain groundwater basin, which contains both unconfined and perched aquifers.

Water Quality Objectives Not Attained

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as, "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses

include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan fecal coliform objective for REC-1 states that the log mean shall not exceed 200/100mL, and no more than 10% shall exceed 400/100 mL.

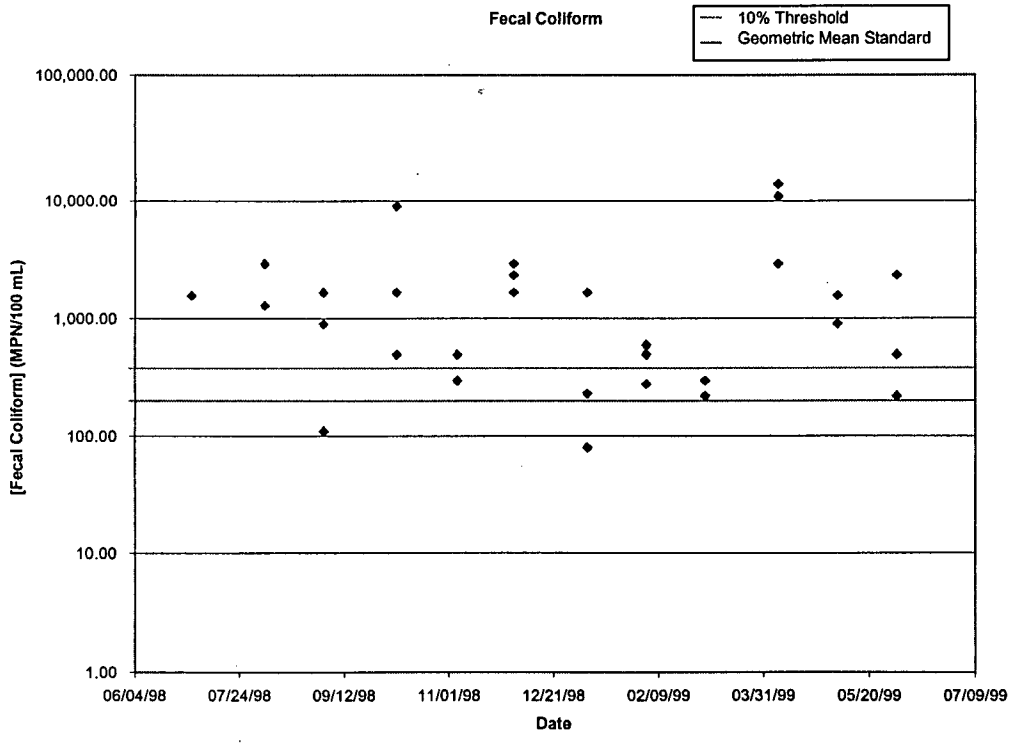
Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform Data for Calleguas Creek Reach 2

Dates of Sampling	7/98-6/99
Number of Samples (n)	34
Minimum Data Value	80 mpn/100mL
Maximum Data Value	14000 mpn/100mL
Median Data Value	900 mpn/100mL
Arithmetic Mean Value	2016 mpn/100mL
Standard Deviation	3133 mpn/100mL
Number (Percent) above Objective	Geomean of 934 exceeds 200 mpn standard; 24 (74%) >400 mpn.



Draft 12/03/01

Potential Sources

Point and non-point.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Calleguas Creek Characterization Study 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Revolon Slough, Calleguas Creek Reach 4
Boron

Summary of Proposed Action

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel, to the confluence with Calleguas Creek in Reach 2. Reach 4 is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than 25 percent exceedance of the waterbody-specific boron objective in Table 3-8 of the Basin Plan.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 4 - Revolon Slough	Pollutants/Stressors	Boron
Hydrologic Unit	403.11	Source(s)	Non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 4
Size Affected	6.7 Miles	TMDL Start Date (Mo/Yr)	1998 - New listing in a current TMDL.
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	2004

Watershed Characteristics

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel (Wash), to Calleguas Creek Reach 2 downstream (south) of Potrero Road. Its tributaries include agricultural drains at Wood Road and Las Posas Road, and the Hueneme Road/Nauman Road Irrigation Ditch. Reach 4 is concrete lined between Central Avenue and Wood Road, downstream from there the slough is soft-bottomed with sides of rip-rap. The lower 1.5 miles appear to have tidal influence. Sources of water include tile drains and other sources in Reach 5.

The end of Revolon Slough currently connects with Calleguas Creek south of Potrero Road. However, it previously connected north of Potrero Road, and was moved by the Ventura County Flood Control District in approximately 1986.

Draft 12/03/01

Water Quality Objectives Not Attained

Basin Plan Objective for Boron

The Basin Plan has a number of water quality objectives for selected constituents in inland surface waters, listed in Table 3-8. The boron objective listed for Calleguas Creek above Potrero Road is 1.0 mg/L.

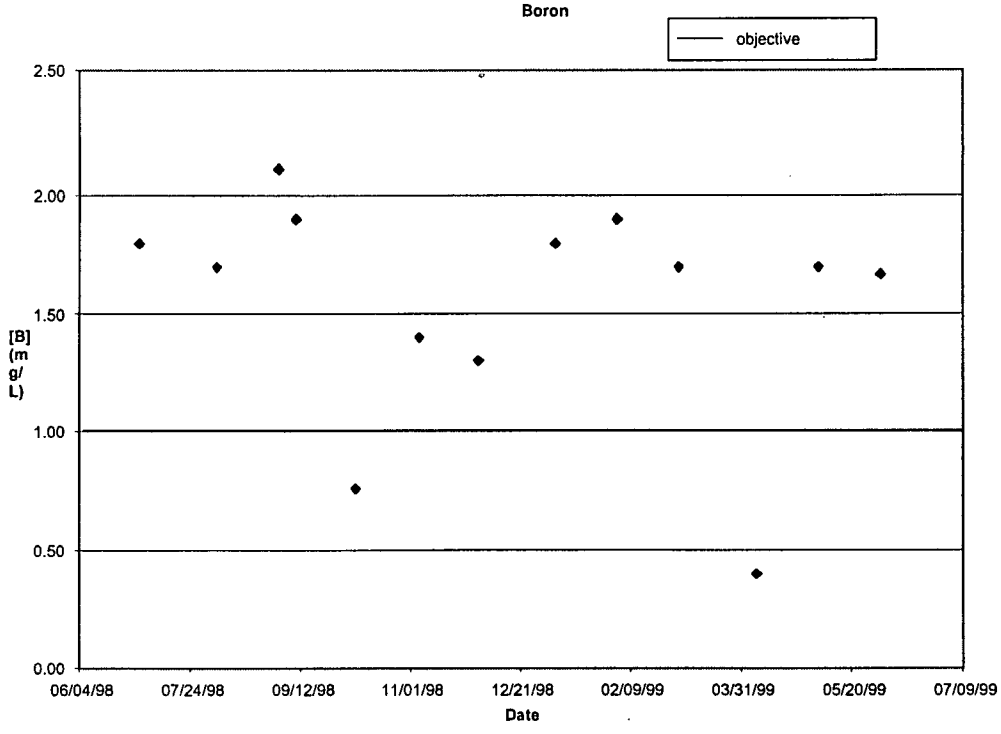
Beneficial Uses Affected

- Basin Plan waterbody specific objectives, Table 3-8.

Data Assessment

Table 2. Summary of Boron for Calleguas Creek Reach 4

Dates of Sampling	7/98-6/99
Number of Samples (n)	13
Minimum Data Value	0.40 mg/L
Maximum Data Value	2.10 mg/L
Median Data Value	1.70 mg/L
Arithmetic Mean Value	1.49 mg/L
Standard Deviation	0.48 mg/L
Number (Percent) above Objective	11 of 13 or 85%



Potential Sources

Non-point sources.

References

Personal communication with Dave Thomas and John Wikle of the Ventura County Flood Control District, September 7, 2001
Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Calleguas Creek Characterization Study 2000
United Water Conservation District, Water Quality Data

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Revolon Slough, Calleguas Creek Reach 4
Chloride

Summary of Proposed Action

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel, to the confluence with Calleguas Creek in Reach 2. Reach 4 is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than 25 percent exceedance of the waterbody-specific chloride objective in Table 3-8 of the Basin Plan.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 4 - Revolon Slough	Pollutants/Stressors	Chloride
Hydrologic Unit	403.11	Source(s)	Non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 5
Size Affected	6.7 Miles	TMDL Start Date (Mo/Yr)	2005 - New listing in a current TMDL.
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	

Watershed Characteristics

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel (Wash), to Calleguas Creek Reach 2 downstream (south) of Potrero Road. Its tributaries include agricultural drains at Wood Road and Las Posas Road, and the Hueneme Road/Nauman Road Irrigation Ditch. Reach 4 is concrete lined between Central Avenue and Wood Road, downstream from there the slough is soft-bottomed with sides of rip-rap. The lower 1.5 miles appear to have tidal influence. Sources of water include tile drains and other sources in Reach 5.

The end of Revolon Slough currently connects with Calleguas Creek south of Potrero Road. However, it previously connected north of Potrero Road, and was moved by the Ventura County Flood Control District in approximately 1986.

Water Quality Objectives Not Attained

Current Basin Plan Table 3-8 chloride objective of 150 mg/L.

Upcoming TMDL reach specific objective and numeric target of 150 mg/L.

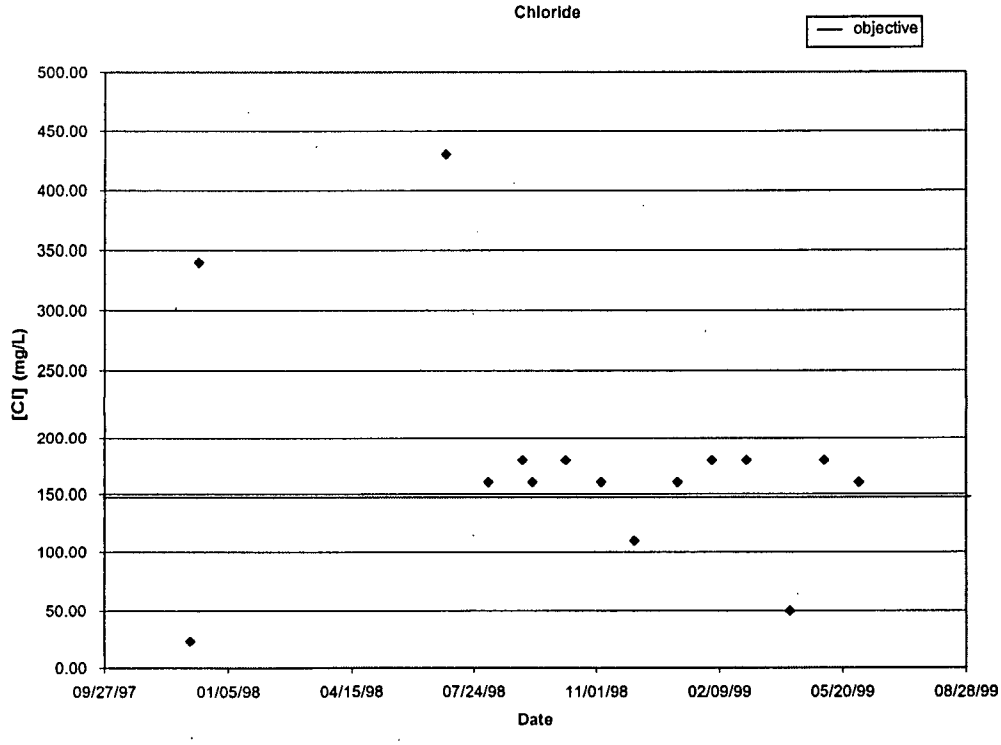
Beneficial Uses Affected

- Agriculture
- Groundwater recharge

Data Assessment

Table 2. Summary of Chloride for Calleguas Creek Reach 4

Dates of Sampling	12/97-6/99
Number of Samples (n)	15
Minimum Data Value	23 mg/L
Maximum Data Value	430 mg/L
Median Data Value	160 mg/L
Arithmetic Mean Value	177 mg/L
Standard Deviation	99 mg/L
Number (Percent) above Objective	12 or 80%



Potential Sources

Non-point sources.

References

Personal communication with Dave Thomas and John Wikle of the Ventura County Flood Control District, September 7, 2001
Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Calleguas Creek Characterization Study 2000
United Water Conservation District, Water Quality Data

Draft 12/03/01

Calleguas Creek Reach 4, Revolon Slough
Fecal Coliform

Summary of Proposed Action

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel, to the confluence with Calleguas Creek in Reach 2. Reach 2 is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the fecal coliform objective. The beneficial use affected by this impairment is water contact recreation.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 4 - Revolon Slough	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.11	**Source(s)**	Point and non-point.
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	Low
Size Affected	6.7 Miles	**TMDL Start Date (Mo/Yr)**	2011
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel (Wash), to Calleguas Creek Reach 2 downstream (south) of Potrero Road. Its tributaries include agricultural drains at Wood Road and Las Posas Road, and the Hueneme Road/Nauman Road Irrigation Ditch. Reach 4 is concrete lined between Central Avenue and Wood Road, downstream from there the slough is soft-bottomed with sides of rip-rap. The lower 1.5 miles appear to have tidal influence. Sources of water include tile drains and other sources in Reach 5.

The end of Reach 4 currently connects with Calleguas Creek south of Potrero Road. However, it previously connected north of Potrero Road, and was moved by the Ventura County Flood Control District in approximately 1986.

Water Quality Objectives Not Attained

Water Contact Recreation

The Basin Plan describes REC-1 as, "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan Fecal Coliform limit of 400 MPN/100 mL was exceeded with a frequency greater than 10%, and the geometric mean standard was exceeded.
"In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not exceed a log mean of 200/100 mL (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 mL."

Beneficial Uses Affected

- Water Contact Recreation

Data Assessment

Table 2. Summary of Fecal Coliform Data for Calleguas Creek Reach 4

Dates of Sampling	7/98-6/99
Number of Samples (n)	12
Minimum Data Value	130 mpn/100 mL
Maximum Data Value	5000 mpn/100 mL
Median Data Value	550 mpn/100 mL
Arithmetic Mean Value	1424 mpn/100 mL
Standard Deviation	1809 mpn/100 mL
Number (Percent) above Objective	Geomean of 653 MPN exceeds 200 mpn; 50% exceed 400 mpn.

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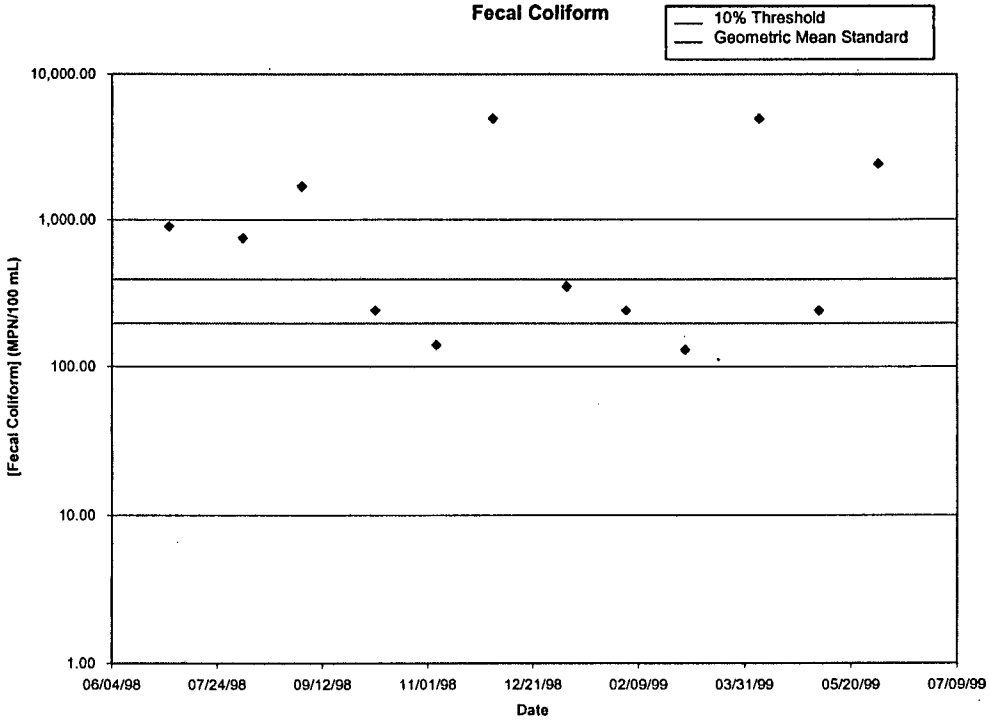


Potential Sources

Non-point sources.

References

Creek Chloride TMDL 2001
Basin Plan 1994
Calleguas Creek Characterization Study 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Revolon Slough, Calleguas Creek Reach 4
Total Dissolved Solids (TDS)

Summary of Proposed Action

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel, to the confluence with Calleguas Creek in Reach 2. Reach 2 is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than 25 percent exceedance of the total dissolved solids or TDS objective in Table 3-8 of the Basin Plan.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Calleguas Creek Reach 4 - Revolon Slough**	**Pollutants/Stressors**	**TDS**
Hydrologic Unit	403.11	**Source(s)**	Non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 4
Size Affected	6.7 Miles	**TMDL Start Date (Mo/Yr)**	1998 – New listing in a current TMDL.
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel (Wash), to Calleguas Creek Reach 2 downstream (south) of Potrero Road. Its tributaries include agricultural drains at Wood Road and Las Posas Road, and the Hueneme Road/Nauman Road Irrigation Ditch. Reach 4 is concrete lined between Central Avenue and Wood Road, downstream from there the slough is soft-bottomed with sides of rip-rap. The lower 1.5 miles appear to have tidal influence. Sources of water include tile drains and other sources in Reach 5.

The end of Reach 4 currently connects with Calleguas Creek south of Potrero Road. However, it previously connected north of Potrero Road, and was moved by the Ventura County Flood Control District in approximately 1986.

Water Quality Objectives Not Attained

Basin Plan Objective for TDS

The Basin Plan has a number of water quality objectives for selected constituents in inland surface waters, listed in Table 3-8. The TDS objective listed for Calleguas Creek above Potrero Road is 850 mg/L.

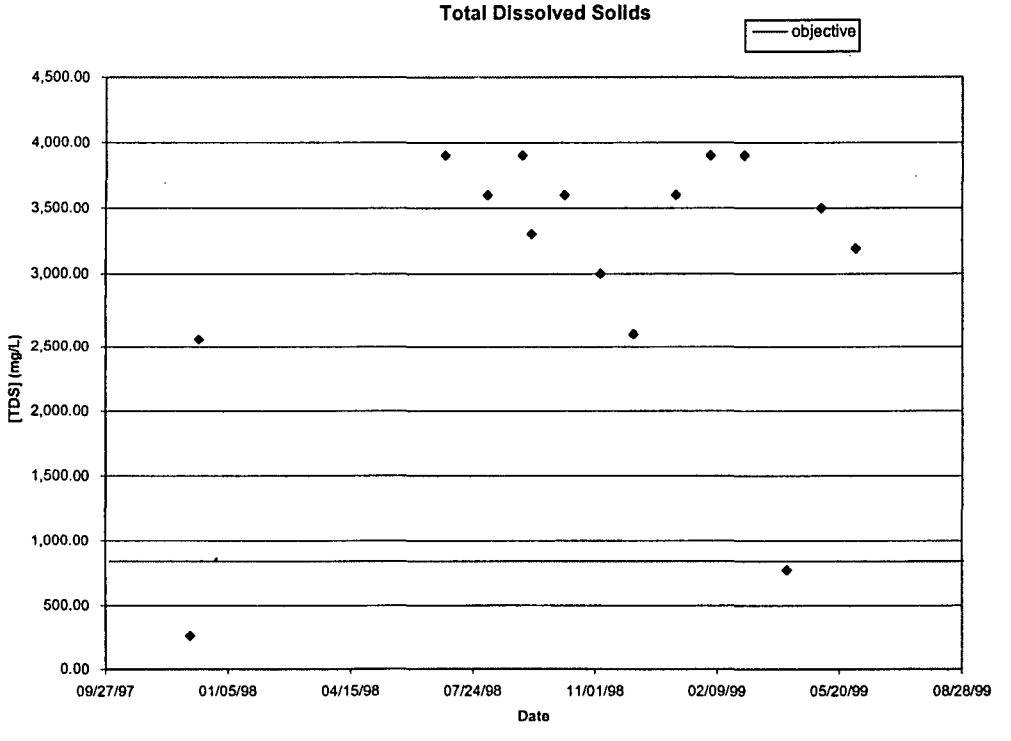
Beneficial Uses Affected

- Basin Plan waterbody specific objectives, Table 3-8.

Data Assessment

Table 2. Summary of TDS for Calleguas Creek Reach 4

Dates of Sampling	12/97-6/99
Number of Samples (n)	15
Minimum Data Value	260 mg/L
Maximum Data Value	3900 mg/L
Median Data Value	3500 mg/L
Arithmetic Mean Value	3039 mg/L
Standard Deviation	1118 mg/L
Number (Percent) above Objective	13 or 87%



Potential Sources

Non-point sources.

References

Personal communication with Dave Thomas and John Wikle of the Ventura County Flood Control District, September 7, 2001
Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Calleguas Creek Characterization Study 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Revolon Slough, Calleguas Creek Reach 4
Sulfate

Summary of Proposed Action

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel, to the confluence with Calleguas Creek in Reach 2. Reach 2 is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than 25 percent exceedance of the waterbody-specific sulfate objective in Table 3-8 of the Basin Plan.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 4 - Revolon Slough	Pollutants/Stressors	Sulfate
Hydrologic Unit	403.11	**Source(s)**	Non-point sources
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 4
Size Affected	6.7 Miles	**TMDL Start Date (Mo/Yr)**	1998 - New listing in a current TMDL.
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel (Wash), to Calleguas Creek Reach 2 downstream (south) of Potrero Road. Its tributaries include agricultural drains at Wood Road and Las Posas Road, and the Hueneme Road/Nauman Road Irrigation Ditch. Reach 4 is concrete lined between Central Avenue and Wood Road, downstream from there the slough is soft-bottomed with sides of rip-rap. The lower 1.5 miles appear to have tidal influence. Sources of water include tile drains and other sources in Reach 5.

The end of Revolon Slough currently connects with Calleguas Creek south of Potrero Road. However, it previously connected north of Potrero Road, and was moved by the Ventura County Flood Control District in approximately 1986.

Draft 12/03/01

Water Quality Objectives Not Attained

Basin Plan Objective for Sulfate

The Basin Plan has a number of water quality objectives for selected constituents in inland surface waters, listed in Table 3-8. The sulfate objective listed for Calleguas Creek above Potrero Road is 250 mg/L.

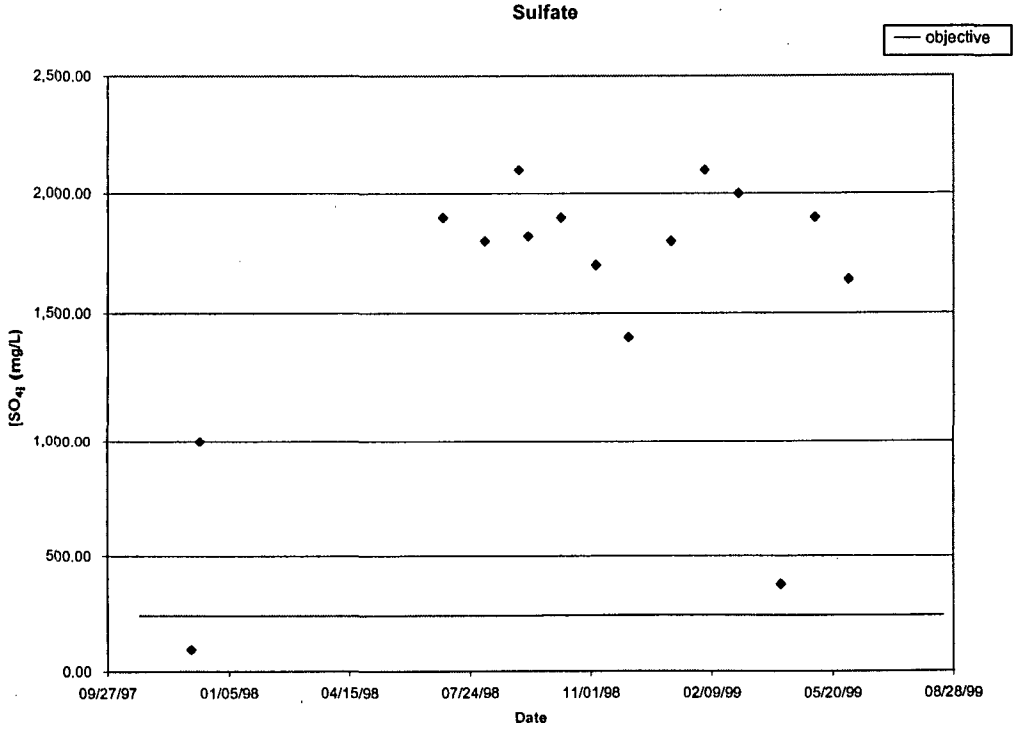
Beneficial Uses Affected

- Basin Plan waterbody specific objectives, Table 3-8.

Data Assessment

Table 2. Summary of Sulfate for Calleguas Creek Reach 4

Dates of Sampling	12/97-6/99
Number of Samples (n)	15
Minimum Data Value	93 mg/L
Maximum Data Value	2100 mg/L
Median Data Value	1220 mg/L
Arithmetic Mean Value	1204 mg/L
Standard Deviation	608 mg/L
Number (Percent) above Objective	33 or 97%



Potential Sources

Non-point sources.

References

Personal communication with Dave Thomas and John Wikle of the Ventura County Flood Control District, September 7, 2001
Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Calleguas Creek Characterization Study 2000
United Water Conservation District, Water Quality Data

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 4, Revolon Slough
Nitrate as NO_3

Summary of Proposed Action

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel, to the confluence with Calleguas Creek in Reach 2. Reach 2 is proposed to be listed in the 2002 305(b) water quality assessment as partially-supporting (impaired) due to the median value exceeding the nitrate as NO3 objective. The beneficial use affected by this impairment is municipal and domestic supply.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 4 - Revolon Slough	Pollutants/Stressors	Nitrate as NO3
Hydrologic Unit	403.11	**Source(s)**	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 1
Size Affected	6.7 Miles	**TMDL Start Date (Mo/Yr)**	1997 – New listing for a current TMDL.
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	April 2002

Watershed Characteristics

Calleguas Creek Reach 4, or Revolon Slough, extends from the end of Calleguas Creek Reach 5, or Beardsley Channel (Wash), to Calleguas Creek Reach 2 downstream (south) of Potrero Road. Its tributaries include agricultural drains at Wood Road and Las Posas Road, and the Hueneme Road/Nauman Road Irrigation Ditch. Reach 4 is concrete lined between Central Avenue and Wood Road, downstream from there the slough is soft-bottomed with sides of rip-rap. The lower 1.5 miles appear to have tidal influence. Sources of water include tile drains and other sources in Reach 5.

The end of Reach 4 currently connects with Calleguas Creek south of Potrero Road. However, it previously connected north of Potrero Road, and was moved by the Ventura County Flood Control District in approximately 1986.

Water Quality Objectives Not Attained

Basin Plan Objective for Nitrate as NO_3 for MUN of 45 mg/L.

The Basin Plan defines Municipal and Domestic Supply (MUN) as "Uses of water for community, military, or individual water supply systems including , but not limited to, drinking water supply." All municipal uses in Calleguas Creek and tributaries are designated under SB 88-63 and RB 89-03.

Beneficial Uses Affected

- Municipal and Domestic Supply

Data Assessment

Table 2. Summary of Nitrate as NO_3 for Calleguas Creek Reach 4

Dates of Sampling	12/97-6/99
Number of Samples (n)	43
Minimum Data Value	8 mg/L
Maximum Data Value	420 mg/L
Median Data Value	150 mg/L
Arithmetic Mean Value	144 mg/L
Standard Deviation	77 mg/L
Number (Percent) above Objective	38 (88%)

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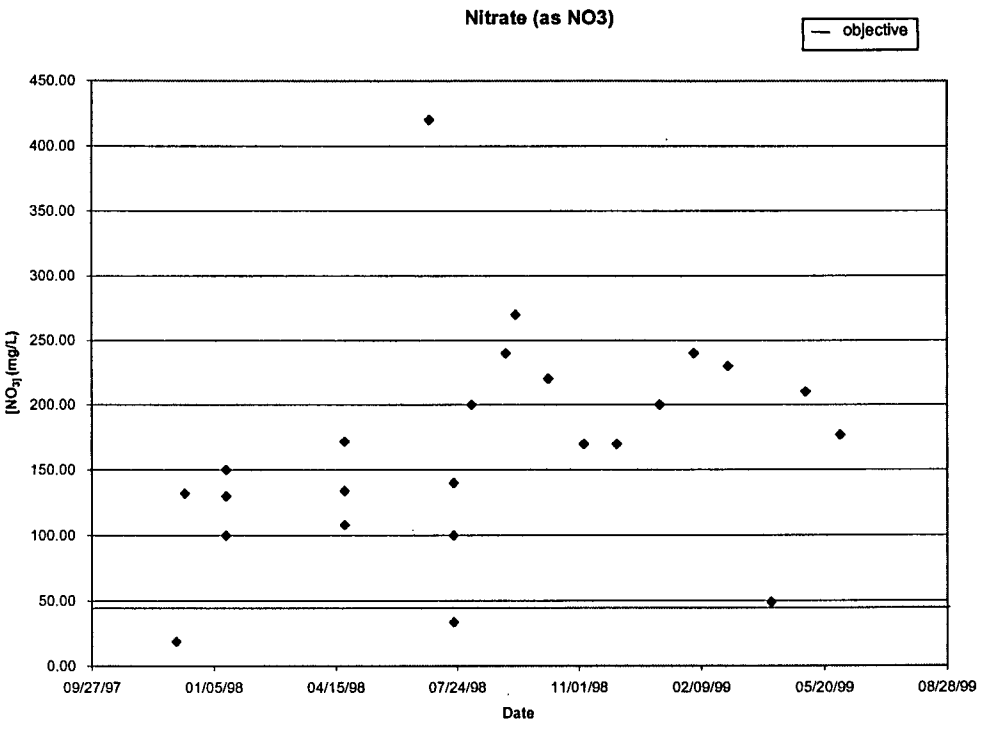

Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Calleguas Creek Characterization Study 2000
United Water Conservation District, Water Quality Data

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 6, Arroyo Las Posas
Fecal Coliform

Summary of Proposed Action

Calleguas Creek Reach 6, or Arroyo Las Posas, extends from the confluence with Calleguas Creek Reach 7, Arroyo Simi, to the confluence with Conejo Creek. Fox Barranca is a major tributary. Calleguas Creek Reach 6 is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the fecal coliform objective. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 6 - Arroyo Las Posas	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.12 403.62 403.63	**Source(s)**	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	Low
Size Affected	7.6 Miles	**TMDL Start Date (Mo/Yr)**	2011
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 6, or Arroyo Las Posas, extends from the confluence with Calleguas Creek Reach 7, Arroyo Simi, to the confluence with Conejo Creek. Fox Barranca is a major tributary. The confluence w/ Arroyo Simi is often dry, and Arroyo

Las Posas would be dry for most of the year except for the effluent discharged from the Ventura County Wastewater Treatment Plant (VCWWTP) at Moorpark.

Water Quality Objectives Not Attained.

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as, "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan fecal coliform limit of 400 /100 mL was exceeded with a frequency greater than 10%.
"In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not exceed a log mean of 200/100 mL (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 mL."

Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform for Calleguas Creek Reach 6, Arroyo Las Posas.

Dates of Sampling	7/98-6/99
Number of Samples (n)	24
Minimum Data Value	70 MPN/100mL
Maximum Data Value	16000 MPN/100mL
Median Data Value	240 MPN/100mL
Arithmetic Mean Value	7315 MPN/100mL
Standard Deviation	32571 MPN/100mL
Number (Percent) above Objective	Geomean of 367 exceeds 200; 7 or 29% exceed 400 standard.

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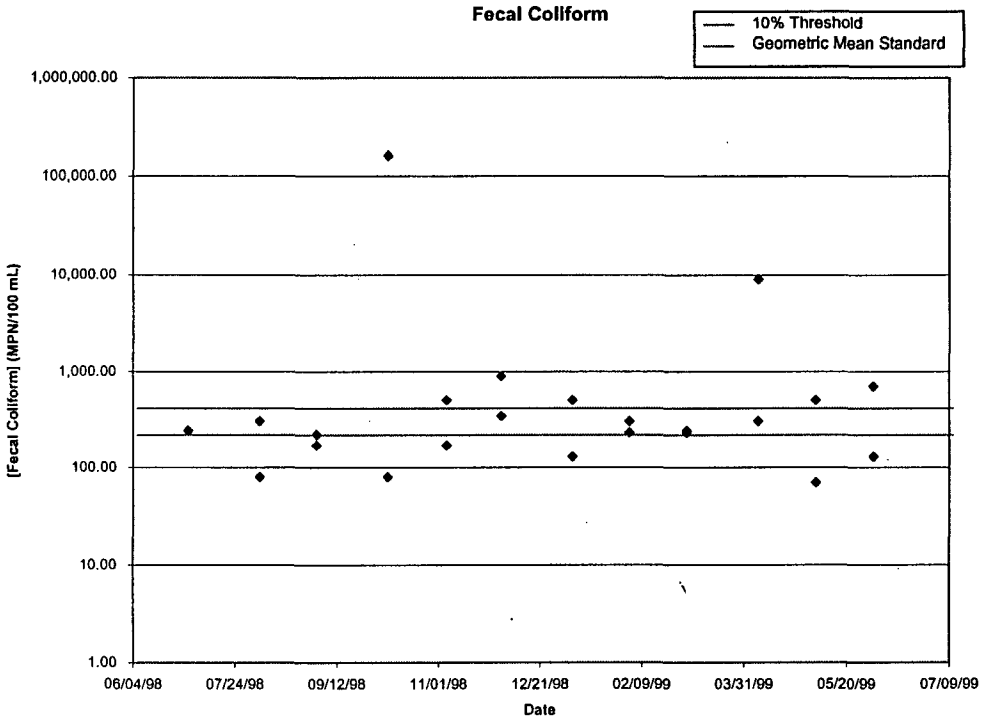


Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Calleguas Creek Characterization Study 2000
Basin Plan 1994
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Arroyo Las Posas, Calleguas Creek Reach 6
Nitrate as NO_3

Summary of Proposed Action

Calleguas Creek Reach 6, or Arroyo Las Posas, extends from the confluence with Calleguas Creek Reach 7, Arroyo Simi, to the confluence with Conejo Creek. Fox Barranca is a major tributary. Calleguas Creek Reach 6 is proposed to be listed in the 2002 305(b) water quality assessment as fully supporting but threatened (impaired) due to greater than 10 percent exceedance of the nitrate as NO_3 objective. The beneficial use that is affected by this impairment is municipal and domestic supply.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 6 - Arroyo Las Posas	Pollutants/Stressors	Nitrate as NO3
Hydrologic Unit	403.12	Source(s)	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 1
Size Affected	7.6 Miles	TMDL Start Date (Mo/Yr)	1997 - New listing in a current TMDL
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	April 2002

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 6, or Arroyo Las Posas, extends from the confluence with Calleguas Creek Reach 7, Arroyo Simi, to the confluence with Conejo Creek. Fox Barranca is a major tributary. The confluence w/ Arroyo Simi is often dry, and Arroyo

Las Posas would be dry for most of the year except for the effluent discharged from the Ventura County Wastewater Treatment Plant (VCWWTP) at Moorpark.

Water Quality Objectives Not Attained.

Basin Plan Objective for Nitrate as NO_3 for MUN

The Basin Plan defines Municipal and Domestic Supply (MUN) as

"Uses of water for community, military, or individual water supply systems including , but not limited to, drinking water supply."

The Basin Plan limit for NO_3 is 45 mg/L.

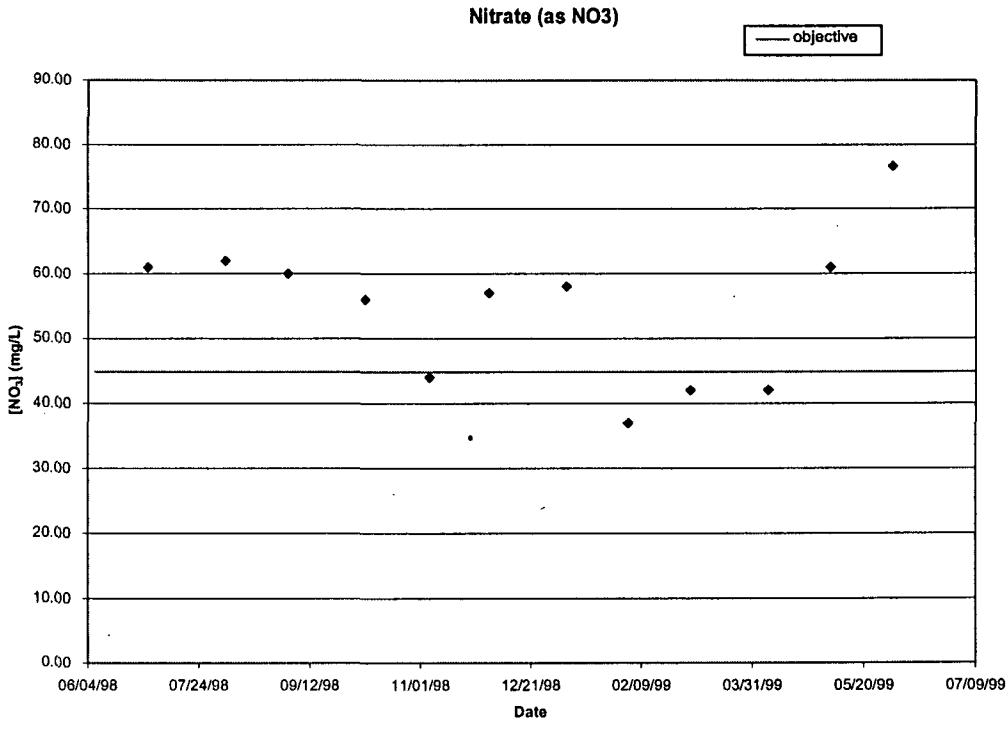
Beneficial Uses Affected

- Municipal and Domestic Supply

Data Assessment

Table 2. Summary of Nitrate as NO_3 for Calleguas Creek Reach 9A - Camrosa Diversion

Dates of Sampling	7/98-6/99
Number of Samples (n)	12
Minimum Data Value	37.0 mg/L
Maximum Data Value	76.6 mg/L
Median Data Value	55.4 mg/L
Arithmetic Mean Value	54.7 mg/L
Standard Deviation	11.3 mg/L
Number (Percent) above Objective	8 or 67%



Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
CWWRF NPDES Reports
Basin Plan 1994
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Arroyo Simi, Calleguas Creek Reach 7
Fecal Coliform

Summary of Proposed Action

Calleguas Creek Reach 7, or Arroyo Simi, extends from headwaters to the confluence with Arroyo Las Posas. Arroyo Simi is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the fecal coliform objective. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Arroyo Simi - Calleguas Creek Reach 7	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.62 403.65 403.67	**Source(s)**	Non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	Low
Size Affected	14	**TMDL Start Date (Mo/Yr)**	2011
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 7, or Arroyo Simi, extends from headwaters to the confluence with Arroyo Las Posas. Tapo Canyon, Calleguas Creek Reach 8, is a major tributary. The confluence with Arroyo Las Posas is often dry, as Arroyo Simi is absorbed into the soil and replenishes the Simi Valley Groundwater Basin (SVGB) here. SVGB includes both confined and unconfined aquifers. In addition to headwaters, urban runoff, and some agricultural runoff, pumped groundwater and groundwater discharges from shallow aquifers also contribute water to Arroyo Simi. Simi Valley Water Quality Control Facility discharges into this reach. Arroyo Simi ends before the outfall from the Ventura County Wastewater Treatment Plant (VCWWTP) at Moorpark.

Water Quality Objectives Not Attained.

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as, "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan fecal coliform limit of 400 /100 mL was exceeded with a frequency greater than 10%.
"In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not exceed a log mean of 200/100 mL (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 mL."

Beneficial Uses Affected

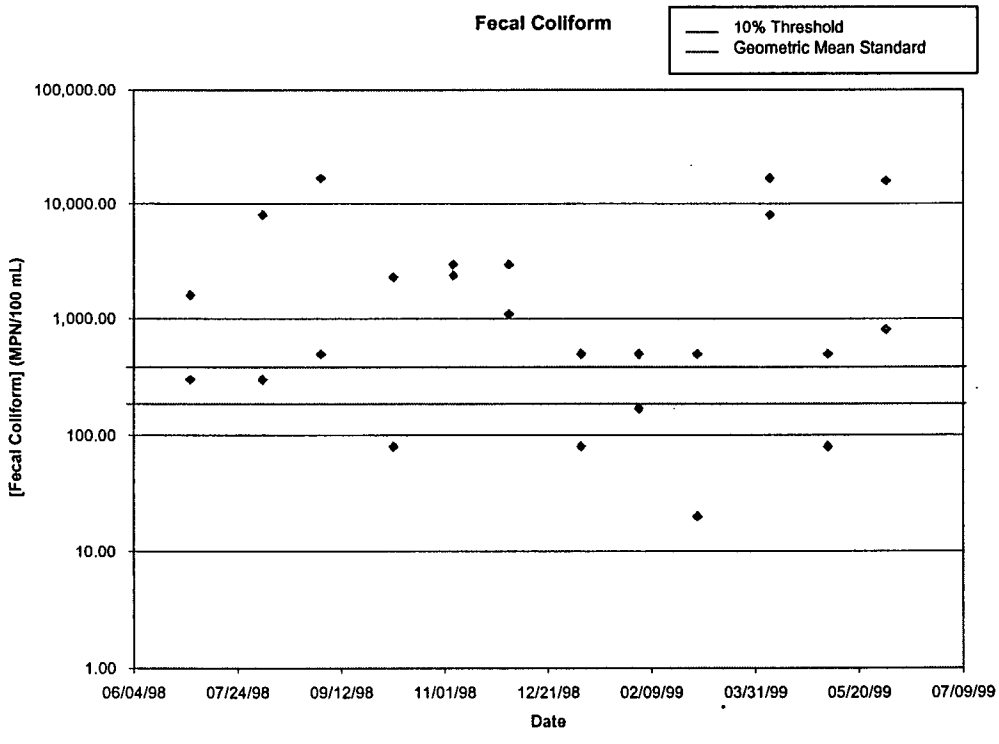
- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform for Arroyo Simi, Calleguas Creek Reach 7

Dates of Sampling	7/98-6/99
Number of Samples (n)	24
Minimum Data Value	20 mpn/100mL
Maximum Data Value	17000 mpn/100mL
Median Data Value	300 mpn/100mL
Arithmetic Mean Value	3489 mpn/100mL
Standard Deviation	5536 mpn/100mL
Number (Percent) above Objective	Geomean of 909 exceeds 200 and 17 or 71% of samples exceed 400 standard.

Draft 12/03/01



Potential Sources

Non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Watershed Management Initiative Chapter 2000
Calleguas Creek Characterization Study 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 9A, Camrosa Diversion
Fecal Coliform

Summary of Proposed Action

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Calleguas Creek Reach 9A is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the of the Basin Plan objective for fecal coliform. The beneficial use affected by this impairment is Water Contact Recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 9A - Camrosa Diversion	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.12	Source(s)	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	Low
Size Affected	1.7 Miles	TMDL Start Date (Mo/Yr)	2011
Extent of Impairment	Entire reach	TMDL End Date (Mo/Yr)	2013

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Camrosa WWRF discharges to percolation ponds near downstream.

Water Quality Objectives Not Attained.

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as, "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan fecal coliform objective for REC-1 states that the log mean shall not exceed 200/100mL, and no more than 10% shall exceed 400/100 mL.

Calleguas Creek Reach 9A is listed as intermittent use for REC-1.

Beneficial Uses Affected

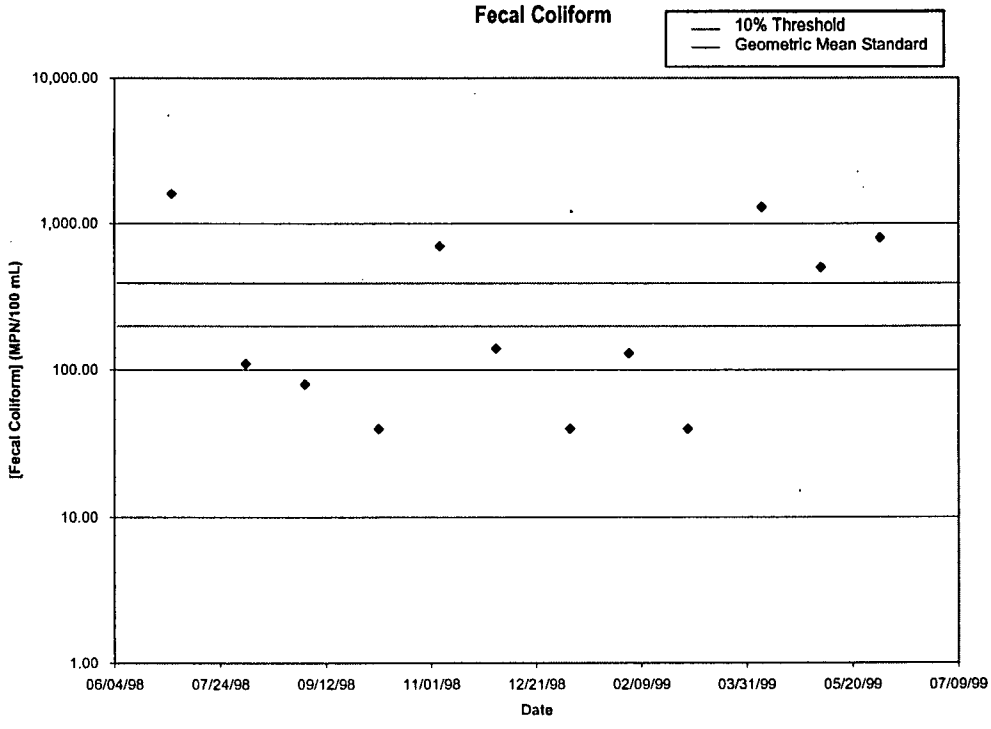
Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform for Calleguas Creek Reach 9A Conejo Creek Camrosa Diversion.

Dates of Sampling	7/98-6/99
Number of Samples (n)	12
Minimum Data Value	40 MPN/100mL
Maximum Data Value	1600 MPN/100mL
Median Data Value	135 MPN/100mL
Arithmetic Mean Value	457 MPN/100mL
Standard Deviation	538 MPN/100mL
Number (Percent) above Objective	Geomean of 206 exceeds 200, and 5 (42%) of samples exceed 400.

Draft 12/03/01



Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Calleguas Creek Characterization Study 2000
Basin Plan 1994
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 9A, Camrosa Diversion
Nitrate as Nitrogen

Summary of Proposed Action

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Calleguas Creek Reach 9A is proposed to be listed in the 2002 305(b) water quality assessment as fully supporting but threatened (impaired) due to greater than 10 percent exceedance of the nitrate as nitrogen objective. The beneficial use affected by this impairment is municipal and domestic supply.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 9A - Camrosa Diversion	Pollutants/Stressors	Nitrate as Nitrogen
Hydrologic Unit	403.12	Source(s)	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 1
Size Affected	1.7 Miles	TMDL Start Date (Mo/Yr)	1997 – New listing in a current TMDL
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	April 2002

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Camrosa WWTP discharges to percolation ponds near downstream.

Draft 12/03/01

Water Quality Objectives Not Attained.

Basin Plan Objective for Nitrate as Nitrogen for MUN

The Basin Plan defines Municipal and Domestic Supply (MUN) as

"Uses of water for community, military, or individual water supply systems including , but not limited to, drinking water supply

The Basin Plan limit for Nitrate as Nitrogen is 10 mg/L.

Beneficial Uses Affected

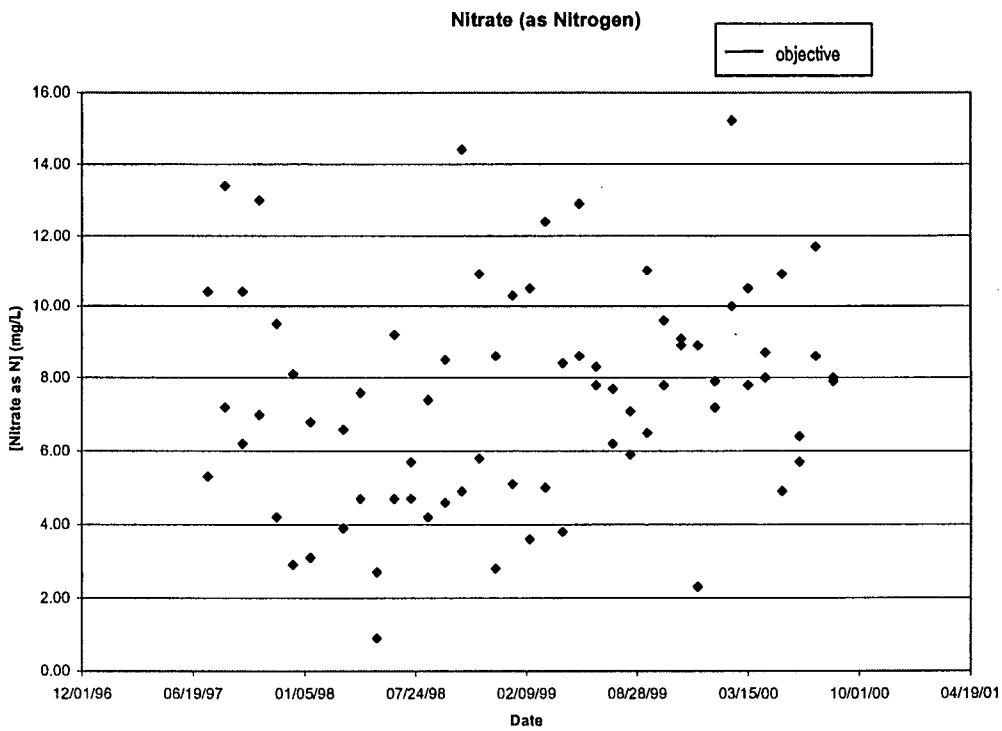
- Municipal and Domestic Supply

Data Assessment

Table 2. Summary of Nitrate as Nitrogen for Calleguas Creek Reach 9A.

Dates of Sampling	7/97-8/00
Number of Samples (n)	111
Minimum Data Value	0.90 mg/L
Maximum Data Value	15.2 mg/L
Median Data Value	7.0 mg/L
Arithmetic Mean Value	7.0 mg/L
Standard Deviation	2.8 mg/L
Number (Percent) above Objective	15 or 14%

Draft 12/03/01



Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Camarillo WWTP NPDES Reports
Basin Plan 1994
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 9A, Camrosa Diversion
Nitrate as NO_3

Summary of Proposed Action

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Calleguas Creek Reach 9A is proposed to be listed in the 2002 305(b) water quality assessment as fully supporting but threatened (impaired) due to greater than 10 percent exceedance of the nitrate as NO_3 objective. The beneficial use affected by this impairment is municipal and domestic supply.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 9A - Camrosa Diversion	Pollutants/Stressors	Nitrate as NO3
Hydrologic Unit	403.12	Source(s)	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 1
Size Affected	1.7 Miles	TMDL Start Date (Mo/Yr)	1997 – New listing in a current TMDL
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	April 2002

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the

Camrosa Diversion. Camarillo WWTP discharges to percolation ponds near downstream.

Water Quality Objectives Not Attained.

Basin Plan Objective for Nitrate as NO_3 for MUN

The Basin Plan defines Municipal and Domestic Supply (MUN) as
"Uses of water for community, military, or individual water supply systems including , but not limited to, drinking water supply."

The Basin Plan limit for NO_3 is 45 mg/L.

Beneficial Uses Affected

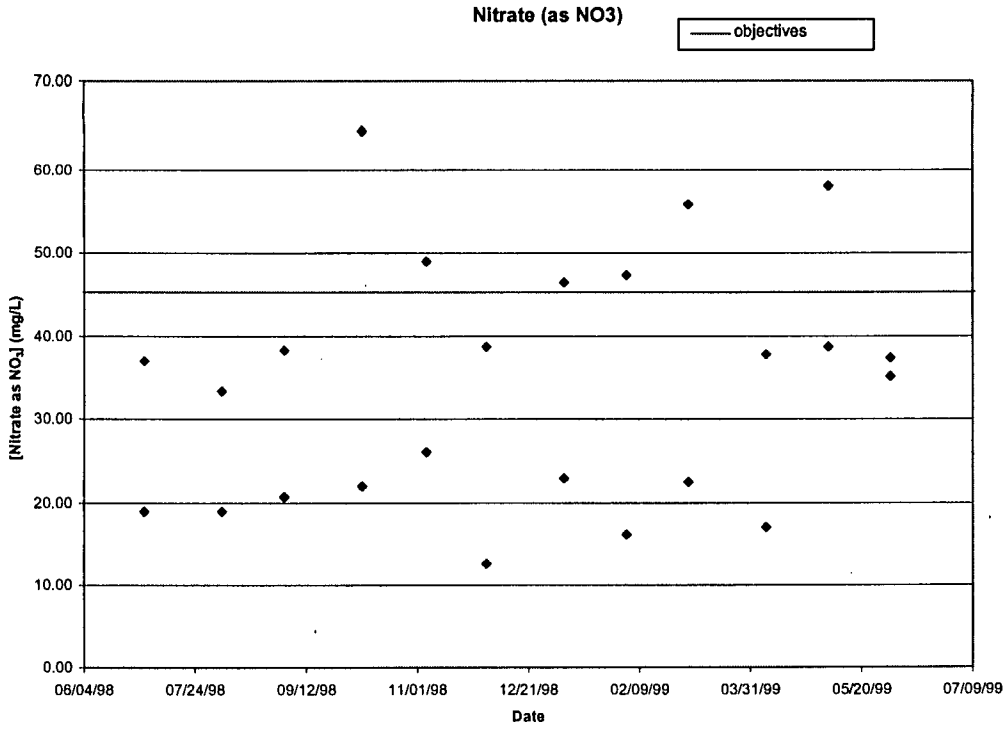
- Municipal and Domestic Supply

Data Assessment

Table 2. Summary of Nitrate as NO_3 for Calleguas Creek Reach 9A Conejo Creek Camrosa Diversion.

Dates of Sampling	7/98-6/99
Number of Samples (n)	24
Minimum Data Value	12.6 mg/L
Maximum Data Value	64.8 mg/L
Median Data Value	36.0 mg/L
Arithmetic Mean Value	34.0 mg/L
Standard Deviation	14.4 mg/L
Number (Percent) above Objective	6 (25%)

Draft 12/03/01



Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Calleguas Creek Characterization Study 2000
Basin Plan 1994
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 9A, Camrosa Diversion
Nitrite as Nitrogen

Summary of Proposed Action

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Calleguas Creek Reach 9A is proposed to be listed in the 2002 305(b) water quality assessment as fully supporting but threatened (impaired) due to greater than 10 percent exceedance of the nitrite as nitrogen objective. The beneficial use affected by this impairment is municipal and domestic supply.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 9A - Camrosa Diversion	Pollutants/Stressors	Nitrite as Nitrogen
Hydrologic Unit	403.12	Source(s)	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 1
Size Affected	1.7 Miles	TMDL Start Date (Mo/Yr)	1997 – New listing in a current TMDL.
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	April 2002

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the

Camrosa Diversion. Camarillo WWTP discharges to percolation ponds near downstream.

Water Quality Objectives Not Attained.

Basin Plan Objective for Nitrite as Nitrogen for MUN

The Basin Plan defines Municipal and Domestic Supply (MUN) as

"Uses of water for community, military, or individual water supply systems including , but not limited to, drinking water supply."

The Basin Plan limit for Nitrite as Nitrogen is 1.0 mg/L.

Beneficial Uses Affected

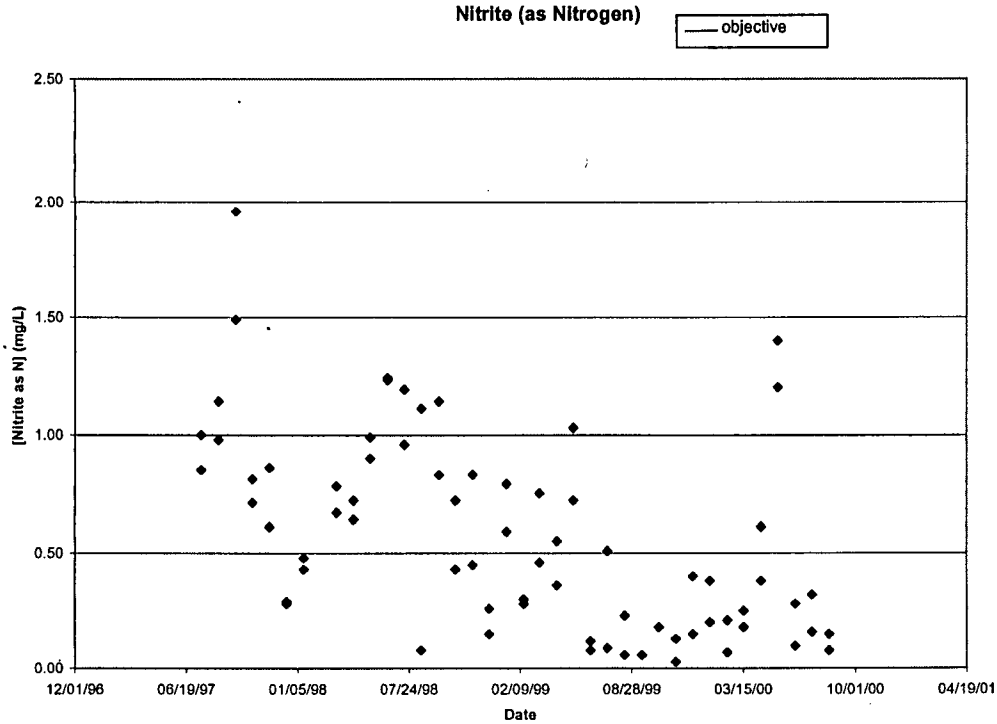
- Municipal and Domestic Supply

Data Assessment

Table 2. Summary of Nitrite as Nitrogen for Calleguas Creek Reach 9A Conejo Creek Camrosa Diversion.

Dates of Sampling	7/97-8/00
Number of Samples (n)	110
Minimum Data Value	0.03 mg/L
Maximum Data Value	1.96 mg/L
Median Data Value	0.51 mg/L
Arithmetic Mean Value	0.58 mg/L
Standard Deviation	0.41 mg/L
Number (Percent) above Objective	18 or 16%

Draft 12/03/01



Potential Sources

Point and non-point.

References

Calleguas Creek Chloride TMDL 2001
Camarillo WWRP NPDES Reports
Basin Plan 1994
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 10, Conejo Creek, Hill Canyon
Chloride

Summary of Proposed Action

The Hill Canyon reach of Conejo Creek, also called Calleguas Creek Reach 10, extends from the confluence with Arroyo Santa Rosa to the confluence with the North Fork of Conejo Creek, and includes the North Fork to just above the Hill Canyon Wastewater Treatment Facility (WWTF). This reach is proposed to be listed on the 2002 305(b) list as not supporting (impaired) due to exceedance of the chloride objective as set forth in Table 3-8 of the Basin Plan and the upcoming Calleguas Creek chloride TMDL. The beneficial use affected by this impairment is agriculture.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 10	Pollutants/Stressors	Chloride
Hydrologic Unit	403.64	**Source(s)**	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 3
Size Affected	3.4 Miles	**TMDL Start Date (Mo/Yr)**	1998 - New listing in a current TMDL
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	January 2002

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to

locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Water sources for Reach 10 include water from upstream Arroyo Conejo North and South Forks, Reaches 12 and 13, urban and agricultural runoff, and effluent from Hill Canyon WWTF. Hill Canyon WWTF is scheduled to be decommissioned, but is currently in use.

Water Quality Objectives Not Attained

Current Basin Plan Table 3-8 chloride objective of 150 mg/L.

Beneficial Uses Affected

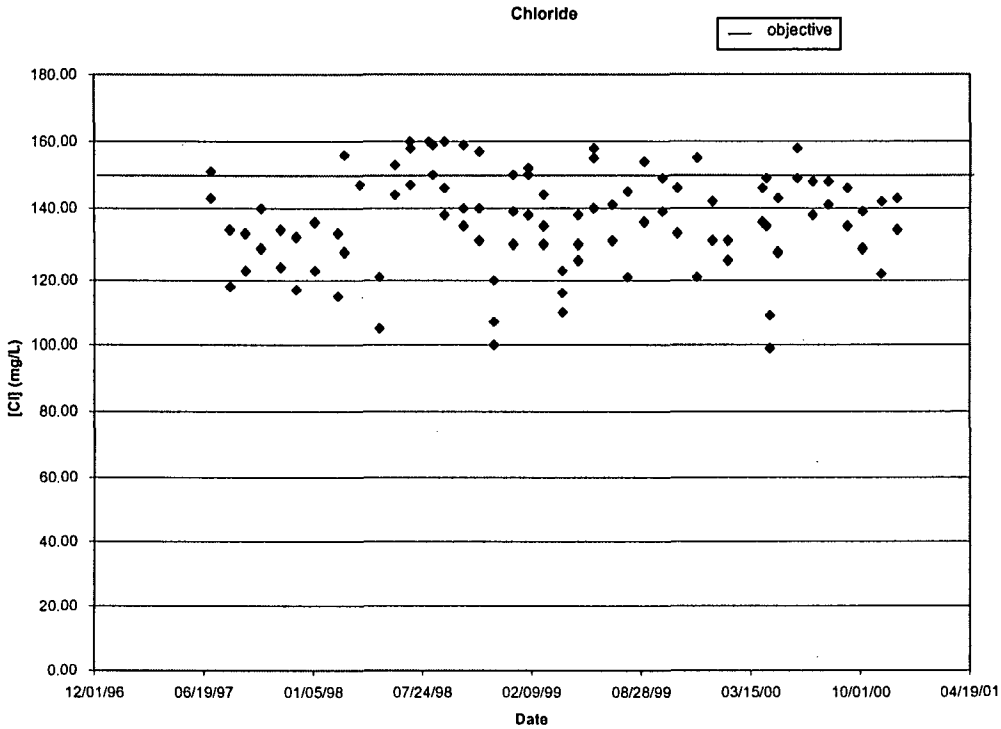
- Agriculture

Data Assessment

Table 2. Summary of Chloride Data for Calleguas Creek Reach 10.

Dates of Sampling	7/97-12/00
Number of Samples (n)	97
Minimum Data Value	99 mg/L
Maximum Data Value	160 mg/L
Median Data Value	138 mg/L
Arithmetic Mean Value	137 mg/L
Standard Deviation	14.2 mg/L
Number (Percent) above Objective	16 (16%) exceed 150 mg/L

Draft 12/03/01



Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Watershed Management Initiative Chapter 2000
Calleguas Creek Characterization Study 2000
Hill Canyon WWRP NPDES Report

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 10 (Conejo Creek, Hill Canyon)
Fecal Coliform

Summary of Proposed Action

The Hill Canyon reach of Conejo Creek, also called Calleguas Creek Reach 10, extends from the confluence with Arroyo Santa Rosa to the confluence with the North Fork of Conejo Creek, and includes the North Fork to just above the Hill Canyon Wastewater Treatment Facility (WWTF). This reach is proposed to be listed on the 2002 305(b) list as not supporting (impaired) due to exceedance of the of the Basin Plan objective for fecal coliform. The beneficial use affected by this impairment is Water Contact Recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 10	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.64	**Source(s)**	Non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	Low
Size Affected	3.4 Miles	**TMDL Start Date (Mo/Yr)**	2011
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to

locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Water sources for Reach 10 include water from upstream Arroyo Conejo North and South Forks, Reaches 12 and 13, urban and agricultural runoff, and effluent from Hill Canyon WWTF is scheduled to be decommissioned, but is currently in use.

Water Quality Objectives Not Attained

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as, "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan fecal coliform objective for REC-1 states that the log mean shall not exceed 200/100mL, and no more than 10% shall exceed 400/100 mL.

Beneficial Uses Affected

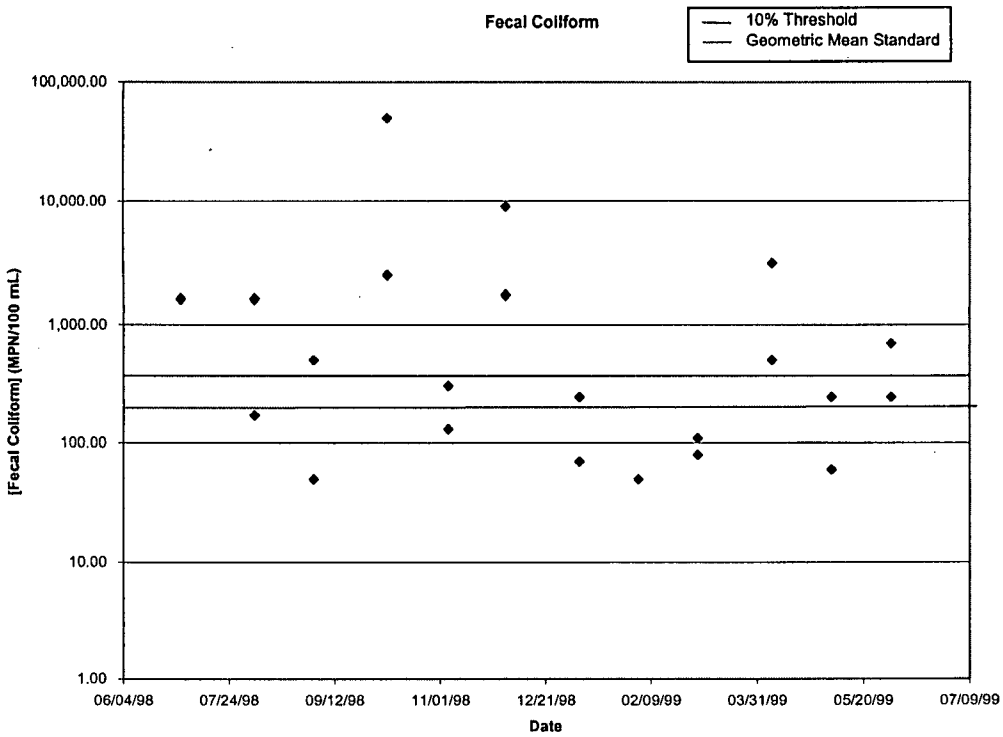
- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform Data for Calleguas Creek Reach 10.

Dates of Sampling	7/98-6/99
Number of Samples (n)	24
Minimum Data Value	50 MPN/100 mL
Maximum Data Value	50000 MPN/100 mL
Median Data Value	270 MPN/100 mL
Arithmetic Mean Value	3100 MPN/100 mL
Standard Deviation	10170 MPN/100 mL
Number (Percent) above Objective	Geomean of 431 exceeds 200, and 11 (46%) of the samples exceed 400.

Draft 12/03/01



Potential Sources

Non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Watershed Management Initiative Chapter 2000
Calleguas Creek Characterization Study 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 10, Conejo Creek, Hill Canyon
Nitrite as Nitrogen

Summary of Proposed Action

The Hill Canyon reach of Conejo Creek, also called Calleguas Creek Reach 10, extends from the confluence with Arroyo Santa Rosa to the confluence with the North Fork of Conejo Creek, and includes the North Fork to just above the Hill Canyon Wastewater Treatment Facility (WWTF). This reach is proposed to be listed on the 2002 305(b) list as fully supporting but threatened (impaired) due to greater than 10% exceedance of the nitrite as nitrogen objective as set forth in the Basin Plan. The beneficial use affected by this impairment is municipal and domestic supply (MUN).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 10	Pollutants/Stressors	Nitrite as Nitrogen
Hydrologic Unit	403.64	**Source(s)**	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 1
Size Affected	3.4 Miles	**TMDL Start Date (Mo/Yr)**	1997 – New listing for a current TMDL.
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	April 2002

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to

locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Water sources for Reach 10 include water from upstream Arroyo Conejo North and South Forks, Reaches 12 and 13, urban and agricultural runoff, and effluent from Hill Canyon WWTF. Hill Canyon WWTF is scheduled to be decommissioned, but is currently in use.

Water Quality Objectives Not Attained

Current Basin Plan nitrite as nitrogen objective of 1.0 mg/L.

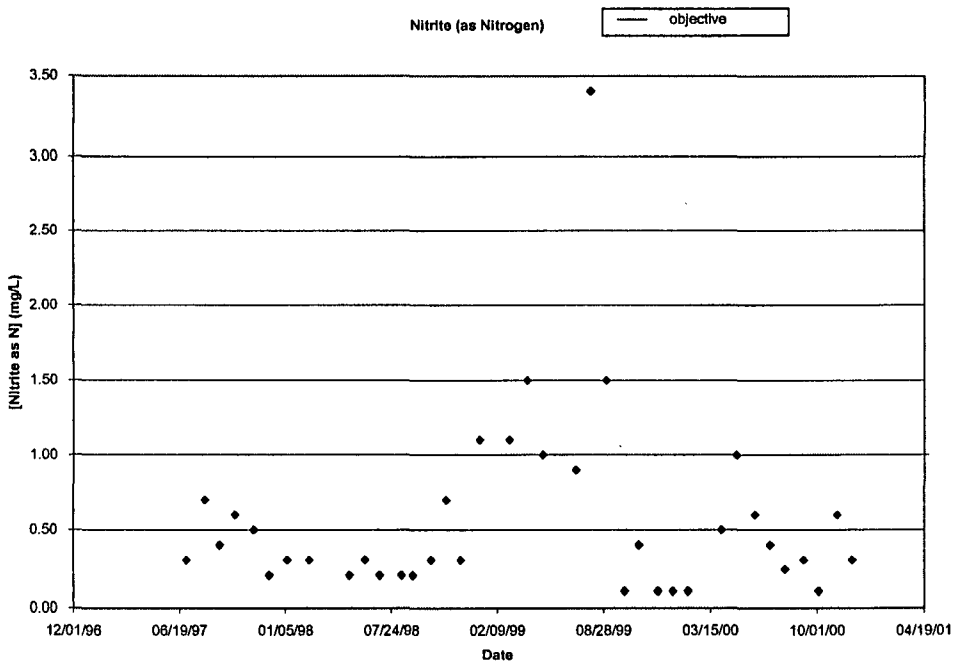
Beneficial Uses Affected

Municipal and Domestic Supply (MUN)

Data Assessment

Table 2. Summary of Nitrite as Nitrogen Data for Calleguas Creek Reach 10.

Dates of Sampling	7/97-12/00
Number of Samples (n)	42
Minimum Data Value	<0.10 mg/L
Maximum Data Value	3.4 mg/L
Median Data Value	0.30 mg/L
Arithmetic Mean Value	0.57 mg/L
Standard Deviation	0.61 mg/L
Number (Percent) above Objective	5 (12%) exceed 1.0 mg/L



Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Watershed Management Initiative Chapter 2000
Calleguas Creek Ambient Water Quality Monitoring
Hill Canyon WWRP NPDES Report

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 11, Arroyo Santa Rosa
Fecal Coliform

Summary of Proposed Action

Calleguas Creek Reach 11, or Arroyo Santa Rosa, extends from the headwaters to Reach 10, Conejo Creek Hill Canyon, where it connects only during periods of high flow. Calleguas Creek Reach 11 is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the fecal coliform objective. The beneficial use that is affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 11 - Arroyo Santa Rosa	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.63 403.64 403.65 403.67	Source(s)	Non-point
Total Waterbody Size	100.1 + Estuary	TMDL Priority	low
Size Affected	10.2	TMDL Start Date (Mo/Yr)	2011
Extent of Impairment	Entire reach.	TMDL End Date (Mo/Yr)	2013

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 11, or Arroyo Santa Rosa, extends from the headwaters to Reach 10, Conejo Creek Hill Canyon, where it connects only during periods of high flow. The

confluence with Reach 10 is usually dry. Olsen Road WRP currently discharges to this reach, but it is scheduled to be decommissioned, with its influent diverted to Hill Canyon WWTF.

Water Quality Objectives Not Attained.

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as, "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan Fecal Coliform limit of 400 /100 mL was exceeded with a frequency greater than 10%.
"In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not exceed a log mean of 200/100 mL (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 mL."

Beneficial Uses Affected

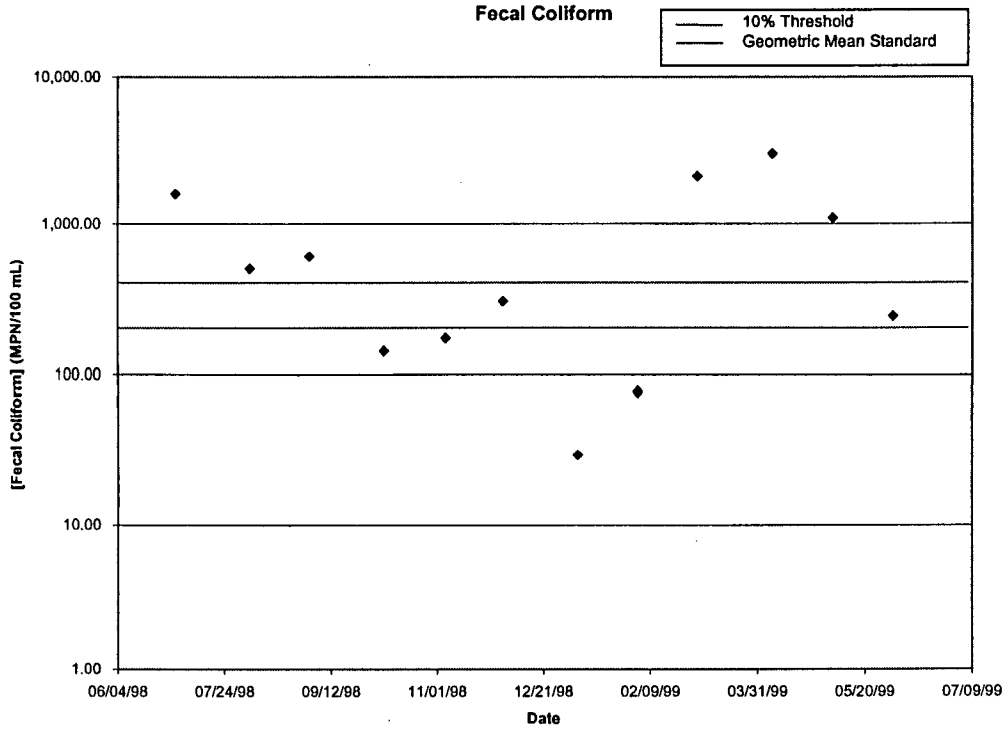
- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform Data for Calleguas Creek Reach 11, Arroyo Santa Rosa.

Dates of Sampling	7/98-6/99
Number of Samples (n)	12
Minimum Data Value	30 MPN/100mL
Maximum Data Value	3000 MPN/100mL
Median Data Value	400 MPN/100mL
Arithmetic Mean Value	822 MPN/100mL
Standard Deviation	948 MPN/100mL
Number (Percent) above Objective	Geomean of 393 exceeds 200, and 6 or 50% exceed 400 standard.

Draft 12/03/01



Potential Sources

Non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Calleguas Creek Characterization Study 2000
Watershed Management Initiative Chapter 2000
Basin Plan 1994

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 13, Conejo Creek, South Fork
Chloride

Summary of Proposed Action

Calleguas Creek Reach 13, also called Conejo Creek South Fork extends from the headwaters in Thousand Oaks to the confluence with Reach 10, Hill Canyon, just above the confluence with the North Fork, or Reach 12. This reach is proposed to be listed in the 2002 305(b) list as not supporting (impaired) due to greater than 25% exceedance of the chloride objective as set forth in Table 3-8 of the Basin Plan and the upcoming Calleguas Creek chloride TMDL. The beneficial use that is affected by this impairment is agriculture.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 13	Pollutants/Stressors	Chloride
Hydrologic Unit	403.64 403.68	Source(s)	Point and non-point
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 3
Size Affected	17.4	TMDL Start Date (Mo/Yr)	1998 - New listing in a current TMDL.
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	January 2002

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to

locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Water sources for Reach 13 include groundwater discharge, headwaters from groundwater and urban runoff, and agricultural runoff.

Water Quality Objectives Not Attained

Current Basin Plan Table 3-8 chloride objective of 150 mg/L.
Upcoming TMDL reach specific objective and numeric target of 150 mg/L.

Beneficial Uses Affected

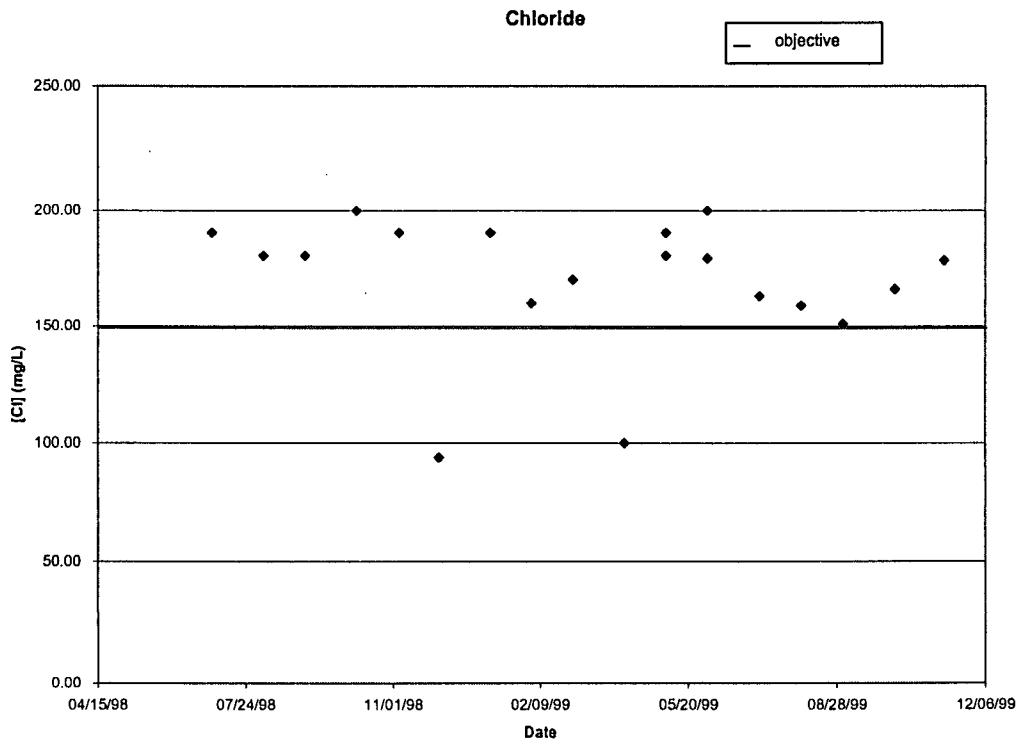
- Agriculture

Data Assessment

Table 2. Summary of Chloride Data for Calleguas Creek Reach 13.

Dates of Sampling	7/98-11/99
Number of Samples (n)	19
Minimum Data Value	94 mg/L
Maximum Data Value	200 mg/L
Median Data Value	179 mg/L
Arithmetic Mean Value	169 mg/L
Standard Deviation	29 mg/L
Number (Percent) above Objective	17 (89%) exceed 150 mg/L

Draft 12/03/01



Potential Sources

Point and non-point sources.

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Watershed Management Initiative Chapter 2000
Calleguas Creek Ambient Water Quality Monitoring
Hill Canyon WWRP NPDES Report

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Watershed – Conejo Creek/Reach 9B
Unnatural Foam & Scum

Summary of Proposed Action

Conejo Creek (Reach 9B of Calleguas Creek) is proposed to be listed in the 2002 303(b) water quality assessment as impaired due to non attainment of the narrative objective for floating and settleable materials objective as described in the Basin Plan. The beneficial uses that are affected by this impairment relate to recreational use (contact and non-contact) and aquatic life. The portion of Conejo Creek defined by Reach 9B is located just downstream of the confluence with Arroyo Santa Rosa and downstream of the Hill Canyon Wastewater Treatment Plant.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Conejo Creek/ Reach 9B	**Pollutants/Stressors**	Unnatural Foam/Scum
Hydrologic Unit	403.63	**Source(s)**	Unknown
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	Low
Size Affected	5.6 miles	**TMDL Start Date (Mo/Yr)**	2011
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The Santa Susana Mountains, South Mountain, and Oak Ridge form the northern boundary of the watershed; the Simi Hills and Santa Monica Mountains form the southern boundary.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Water sources for Reach 9B include water from upstream Arroyo Conejo North and South Forks, Reaches 12 and 13, urban and agricultural runoff, and effluent from Hill Canyon WWTF. Hill Canyon WWTF is scheduled to be decommissioned, but is currently in use.

Water Quality Objectives Not Attained

The Water Quality Control Plan for the Los Angeles Region (Basin Plan) states that, "Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses." This objective was not attained in Conejo Creek (Reach 9B) as indicated by photographic documentation of gross impairment due to unnatural foam and scum shown below.

Beneficial Uses Affected

non-contact water recreation
water contact recreation
wildlife habitat
warmwater habitat

Data Assessment

Photographic evidence of gross impairment of water quality due to unnatural foam and scum was provided for several dates in February and April of 2001 at locations downstream of the Hill Canyon Wastewater Treatment Plant.

Figure 1:
Sample of Photographic Documentation of Gross Impairment due to Unnatural Foam and Scum in Reach 9B
(Photo taken on 4/21/01)

Potential Sources

Unknown

References

Basin Plan, 1994
Watershed Management Initiative, 2000
Photographs provided by Howard Jones, May 2001

California Regional Water Quality Control Board, Los Angeles Region

Arroyo Simi – Reach 7 (tributary to Calleguas Creek) Water Column Toxicity

Summary of Proposed Action

Listing as "Not Suporting (Impaired)" is proposed for Reach 7, Arroyo Simi, tributary to Calleguas Creek, for water column toxicity, which affects aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Arroyo Simi	**Pollutants/Stressors**	Water Column Toxicity
Hydrologic Unit	403.62 and 403.67	**Source(s)**	Agriculture, POTWs, Nonpoint sources
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 2
Size Affected	14.0 miles	**TMDL Start Date (Mo/Yr)**	2003
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The Santa Susana Mountains, South Mountain, and Oak Ridge form the northern boundary of the watershed; the Simi Hills and Santa Monica Mountains form the southern boundary.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space; however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches that either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems that discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed.

Pollutants from nonpoint sources have impacted aquatic life in both Mugu Lagoon and the inland streams of this watershed. DDT, PCBs, other pesticides, and some metals have been detected in both sediment and biota collected from surface waterbodies of this watershed. Additionally, ambient toxicity has been revealed in several studies from periodic toxicity testing in the watershed (ammonia from POTWs and pesticides such as diazinon and chlorpyrifos are implicated). Fish collected from Calleguas Creek and Revolon Slough exhibit skin lesions and have been found to have other histopathologic abnormalities. High levels of minerals and nitrates are common in the water column as well as in the groundwater. Sediment toxicity is also elevated in some parts of the lagoon. Reproduction is impaired in the resident endangered species, the light-footed clapper rail due to elevated levels of DDT and PCBs. Overall, this is a very impaired watershed. It appears that the sources of many of these pollutants are agricultural activities (mostly through continued disturbance and erosion of historically contaminated soils), which cover approximately 25% of the watershed along the inland valleys and coastal plain, although the nearby naval facility has also been a contributor. Other nonpoint sources include residential and urban activities, which are present over approximately 25% of the watershed. The remaining 50% of the watershed is still open space although there is a severe lack of benthic and riparian habitat.

Mugu Lagoon as well as the Calleguas Creek Estuary are considered candidate toxic hot spots under the Bay Protection and Toxic Cleanup Program (BPTCP) for reproductive impairment (the endangered clapper rail), exceedance of the state Office of Environmental and Health Hazard Assessment (OEHHA) advisory level for mercury in fish, and exceedance of other tissue guidelines for DDT in fish and sediment concentrations of DDT, PCB, chlordane, chlorpyrifos, sediment toxicity and degraded benthic infaunal community.

Primary issues related to POTW discharges include ammonia toxicity and high mineral content (i.e., salinity), the latter, in part, due to imported water supplies.

Water Quality Objectives Not Attained

New listing resulting from testing three sites (one upstream and two downstream of Simi Valley Water Quality Control Plant) for chronic water column toxicity using the fathead minnow and Ceriodaphnia. TIEs implicated NH_3 and diazinon downstream of the Simi Valley Water Quality Control Plant and diazinon upstream.

Narrative objective listed in Basin Plan on page 3-16

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life. Use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration or other appropriate methods as specified by the State or Regional Board will determine compliance with this objective.

The survival of aquatic life in surface waters, subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same waterbody in areas unaffected by the waste discharge or, when necessary, other control water.

There shall be no acute toxicity in ambient waters, including mixing zones. The acute toxicity objective for discharges dictates that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single

test having less than 70% survival when using an established USEPA, State Board, or other protocol authorized by the Regional Board.

There shall be no chronic toxicity in ambient waters outside mixing zones. To determine compliance with this objective, critical life stage tests for at least three species with approved testing protocols shall be used to screen for the most sensitive species. The test species used for screening shall include a vertebrate, an invertebrate, and an aquatic plant. The most sensitive species shall then be used for routine monitoring. Typical endpoints for chronic toxicity tests include hatchability, gross morphological abnormalities, survival, growth, and reproduction.

Effluent limits for specific toxicants can be established by the Regional Board to control toxicity identified under Toxicity Identification Evaluations (TIEs).

Beneficial Uses Affected

Aquatic Life

Data Assessment

Table 2. Summary of Water Column Toxicity Data for Arroyo Simi (Reach 7 of Calleguas Creek watershed)

Dates of Sampling	November 1998-June 1999
Number of Samples (n)	22
Minimum Data Value	0% mortality, 10 % reproduction or growth inhibition
Maximum Data Value	100% reproduction or growth inhibition
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Percent above Objective	

Potential Sources

Point and nonpoint sources

References

State Board Toxicity study in 1998-1998 (to be published as "Causes of ambient toxicity in the Calleguas Creek Watershed of Southern California" by Anderson, B., *et al.* in scientific journal) and Calleguas Creek Characterization Study conducted by the dischargers of the area (report date September 2000).

State Board Toxicity Study covered upstream of POTW (site 1) (8 samples, 2 species) and downstream of POTW at Hwy 118 (site 3) (8 samples, 2 species).

Characterization Study covered site 2 (6 samples, 2 species), immediately downstream of the POTW.

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Watershed
Sedimentation

Summary of Proposed Action

Calleguas Creek Watershed, including Arroyo Santa Rosa, Arroyo Simi, Arroyo Las Posas, and Revolon Slough, is proposed to be listed in the 2002 305(b) water quality assessment as "Partially Supporting (Impaired)" due to excessive sedimentation.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek	**Pollutants/Stressors**	Sediment
Hydrologic Unit	403.11; 403.12; 403.62; 403.67	**Source(s)**	Agriculture, natural sources
Total Waterbody Size		**TMDL Priority**	5
Size Affected		**TMDL Start Date (Mo/Yr)**	2003
Extent of Impairment	Calleguas Creek, Arroyo Santa Rosa, Arroyo Simi, Arroyo Las Posas, and Revolon Slough	**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Water Quality Objectives Not Attained

Page 3-16 of the Basin Plan states, "Surface waters carry various amounts of suspended and settleable materials from both natural and human sources. Suspended sediments limit the passage of sunlight into waters, which in turn inhibits the growth of aquatic plants. Excessive deposition of sediments can destroy spawning habitat, blanket benthic (bottom dwelling) organisms, and abrades the gills of larval fish.

Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses."

Beneficial Uses Affected

Aquatic Life (macroinvertebrate data based on bioassessment data)

Data Assessment

The Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon published in May1995 by the Natural Resources Conservation Service lists the following subwatersheds as priority for sediment control treatment: Beardsley Wash, Sand Canyon, Mahan Barranca, Long Canyon, Hunt Wash, Grimes Canyon, Alamos Canyon, Runkle Canyon, Arroyo Conejo, and Arroyo Las Posas.

The bioassessment report from Fish and Game states, "The most common problems with physical habitat were associated with moderate to heavy channel alteration in the form of leveed and rip-rapped stream banks. Most sites suffered from extreme amounts of sediment (often completely covering larger substrates with heavy deposits of sand and silt). These high sediment levels were associated with high embeddedness, poor to nonexistent instream cover and low variation in velocity and depth regimes. Bank vegetation was often entirely absent, leaving no riparian zone (page 12)." The report goes on to say, "All of the sites in this watershed show typical signs of heavily sediment impacted streams. Low physical habitat scores primarily reflect the influence of heavy sediments in causing reduced habitat availability and reduced habitat quality for macroinvertebrates. The dominant taxa in these sites are all sediment tolerant, rapid colonizers which are adapted to collecting organic matter and algae in a constantly changing sandy substrate. The low diversity of substrates and simplicity of the physical environment are primarily responsible for the overall low bioassessment scores in this watershed. Aquatic organisms can respond as negatively to inorganic sediment as they do to other environmental contaminants (Newcombe and MacDonald 1991). Healthy communities of benthic macroinvertebrates that depend on diverse substrate particle size, available interstitial spaces and a complex habitat can be significantly affected or eliminated by sediment deposition (Walters 1995). Benthic macroinvertebrates can be killed directly by suffocation or affected indirectly through the loss of food sources and habitat (Johnson et al. 1993)." Further indications for this listing include "Site 6 [upstream of the Camrosa plant], which receives the waters of all the other sites except Site 13 ranked near the bottom in almost all the ranking criteria. This site was particularly strongly affected by sediment. Larger substrates at this site were buried by as much as 12 inches of sand and finer substrates. Site 13, in a tributary [Revolon Slough] which enters the Calleguas watershed near its mouth, receives the discharge of at least two agricultural drains and appears to be influenced by sedimentation as much as the other sites in the watershed." The report states in the conclusion, " The benthic macroinvertebrate communities sampled in this study are indicative of a heavily sediment-impacted watershed."

Potential Sources

Agriculture
Natural sources (natural geology of area)

References

- Calleguas Creek Characterization Study Benthic Macroinvertebrates November 1998 by California Department of Fish and Game

- Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon in May1995 by the Natural Resources Conservation Service
- Basin Plan (1994)

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 9A, Camrosa Diversion
Dissolved Oxygen (Delisting)

Summary of Proposed Action

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Calleguas Creek Reach 9A is proposed to be **removed** from the 2002 305(b) water quality assessment as it is fully supporting (not impaired) as it meets the Basin Plan objective for dissolved oxygen. The beneficial use affected by this action is aquatic life.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 9A - Camrosa Diversion	Pollutants/Stressors	Dissolved Oxygen
Hydrologic Unit	403.12	**Source(s)**	NA
Total Waterbody Size	100.1 Miles + Estuary	**TMDL Priority**	TMDL Analytical Unit 1
Size Affected	1.7 Miles	**TMDL Start Date (Mo/Yr)**	NA
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	NA

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 9A, or Camrosa Diversion, extends from the confluence with Calleguas Creek Reach 2 to the start of Calleguas Creek Reach 9B, Conejo Creek, at the Camrosa Diversion. Camrosa WWTP discharges to percolation ponds near downstream.

Draft 12/03/01

Water Quality Objectives Now Attained.

The Basin Plan limits for dissolved oxygen read as follows: "At a minimum (see specifics below), the mean annual dissolved oxygen concentration of all waters shall be greater than 7 mg/L, and no single determination shall be less than 5.0 mg/L, except when natural conditions cause lesser concentrations.

"The dissolved oxygen content of all surface waters designated as WARM shall not be depressed below 5 mg/L as a result of waste discharges."

Reach 9 is designated as having intermittent warm freshwater habitat.

Beneficial Uses Affected

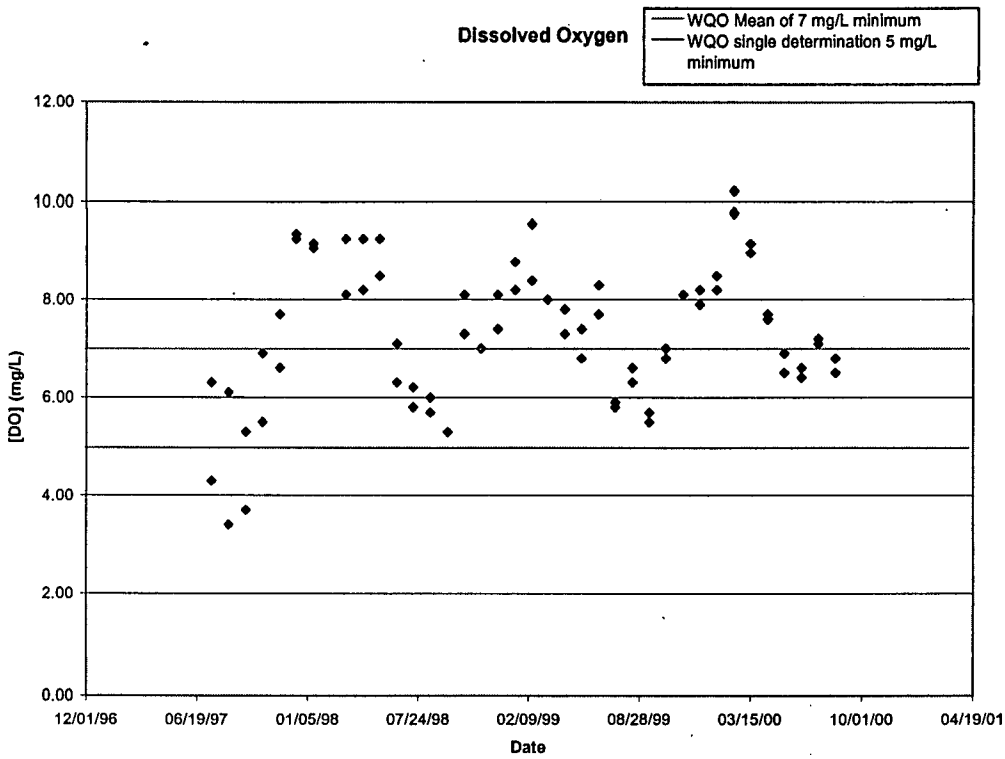
- Warm freshwater habitat

Data Assessment

Table 2. Summary of Dissolved Oxygen for Calleguas Creek Reach 9A - Conejo Creek Camrosa Diversion.

Dates of Sampling	7/97-8/00
Number of Samples (n)	111
Minimum Data Value	3.4 mg/L
Maximum Data Value	10.2 mg/L
Median Data Value	7.3 mg/L
Arithmetic Mean Value	7.3 mg/L
Standard Deviation	1.51 mg/L
Number (Percent) above Objective	6 samples or 5.5% have levels less than 5 mg/L.

Draft 12/03/01



Potential Sources

NA

References

Calleguas Creek Chloride TMDL 2001
Camarillo WWTP NPDES Reports
Basin Plan 1994
Watershed Management Initiative Chapter 2000

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 10, Conejo Creek, Hill Canyon
Dissolved Oxygen (Delisting)

Summary of Proposed Action

The Hill Canyon reach of Conejo Creek, also called Calleguas Creek Reach 10, extends from the confluence with Arroyo Santa Rosa to the confluence with the North Fork of Conejo Creek, and includes the North Fork to just above the Hill Canyon Wastewater Treatment Facility (WWTF). This reach is proposed to is proposed to be **removed** from the 2002 305(b) water quality assessment as it is fully supporting (not impaired) as it meets the Basin Plan objective for dissolved oxygen. The beneficial use affected by this impairment is warm water habitat (WARM).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 10	Pollutants/Stressors	Dissolved Oxygen
Hydrologic Unit	403.64	Source(s)	NA
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 1
Size Affected	3.4 Miles	TMDL Start Date (Mo/Yr)	NA
Extent of Impairment	Entire Reach	TMDL End Date (Mo/Yr)	NA

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to

locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Water sources for Reach 10 include water from upstream Arroyo Conejo North and South Forks, Reaches 12 and 13, urban and agricultural runoff, and effluent from Hill Canyon WWTF. Hill Canyon WWTF is scheduled to be decommissioned, but is currently in use.

Water Quality Objectives Now Attained

The Basin Plan limits for dissolved oxygen read as follows: "At a minimum (see specifics below), the mean annual dissolved oxygen concentration of all waters shall be greater than 7 mg/L, and no single determination shall be less than 5.0 mg/L, except when natural conditions cause lesser concentrations.

"The dissolved oxygen content of all surface waters designated as WARM shall not be depressed below 5 mg/L as a result of waste discharges."

Reach 10 is designated as having existing warm freshwater habitat.

Beneficial Uses Affected

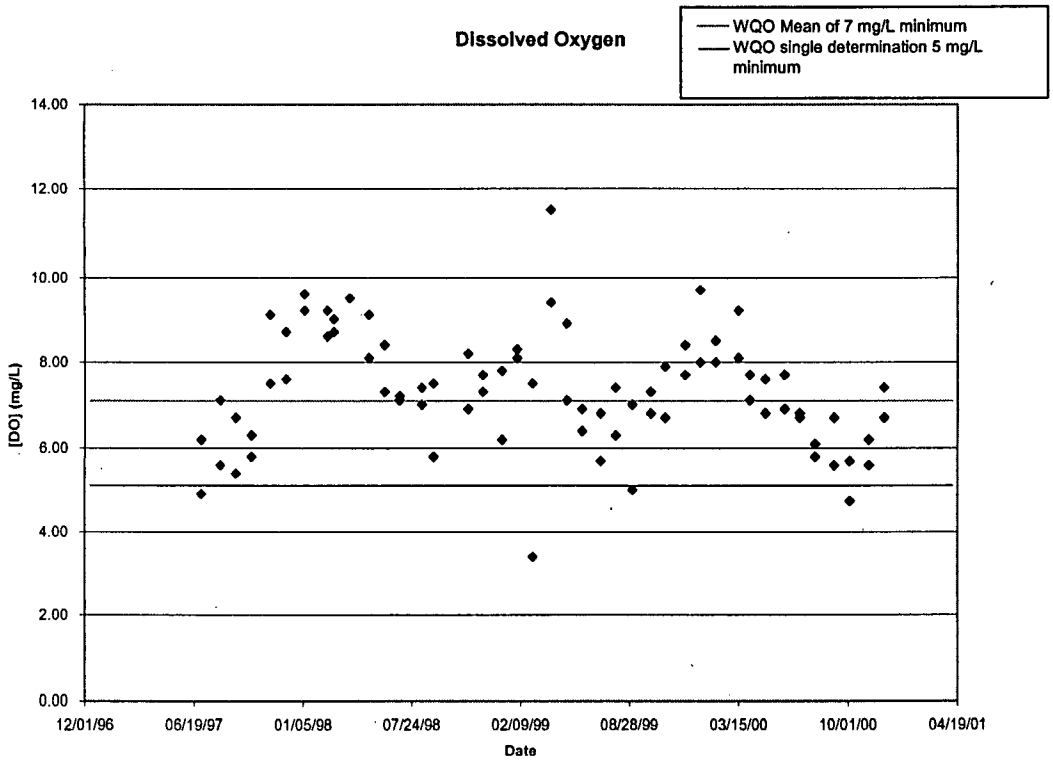
- Warm freshwater habitat.

Data Assessment

Table 2. Summary of Dissolved Oxygen Data for Calleguas Creek Reach 10.

Dates of Sampling	7/97-12/00
Number of Samples (n)	81
Minimum Data Value	3.4 mg/L
Maximum Data Value	11.5 mg/L
Median Data Value	7.3 mg/L
Arithmetic Mean Value	7.33 mg/L
Standard Deviation	1.35 mg/L
Number (Percent) above Objective	3 samples or 4% were below the criteria of 5 mg/L.

Draft 12/03/01



Potential Sources

NA

References

Calleguas Creek Chloride TMDL 2001
Basin Plan 1994
Watershed Management Initiative Chapter 2000
Calleguas Creek Ambient Water Quality Monitoring
Hill Canyon WWRP NPDES Report

Draft 12/03/01

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 11, Arroyo Santa Rosa
Dissolved Oxygen (Delisting)

Summary of Proposed Action

Calleguas Creek Reach 11, or Arroyo Santa Rosa, extends from the headwaters to Reach 10, Conejo Creek Hill Canyon, where it connects only during periods of high flow. Calleguas Creek Reach 11 is proposed to be **removed** from the 2002 305(b) water quality assessment as it is fully supporting (not impaired) as it meets the Basin Plan objective for dissolved oxygen. The beneficial use affected by this impairment is warm water habitat (WARM).

Table 1. 303 (d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 11 - Arroyo Santa Rosa	Pollutants/Stressors	Dissolved Oxygen
Hydrologic Unit	403.63 403.64 403.65 403.67	Source(s)	NA
Total Waterbody Size	100.1 Miles + Estuary	TMDL Priority	TMDL Analytical Unit 1
Size Affected	10.2 Miles	TMDL Start Date (Mo/Yr)	NA
Extent of Impairment	Entire reach	TMDL End Date (Mo/Yr)	NA

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Calleguas Creek Reach 11, or Arroyo Santa Rosa, extends from the headwaters to Reach 10, Conejo Creek Hill Canyon, where it connects only during periods of high flow. The

confluence with Reach 10 is usually dry. Olsen Road WRP currently discharges to this reach, but it is scheduled to be decommissioned, with its influent diverted to Hill Canyon WWTF.

Water Quality Objectives Now Attained.

The Basin Plan limits for dissolved oxygen read as follows: "At a minimum (see specifics below), the mean annual dissolved oxygen concentration of all waters shall be greater than 7 mg/L, and no single determination shall be less than 5.0 mg/L, except when natural conditions cause lesser concentrations.

"The dissolved oxygen content of all surface waters designated as WARM shall not be depressed below 5 mg/L as a result of waste discharges."

Reach 11 is designated as having intermittent warm freshwater habitat.

Beneficial Uses Affected

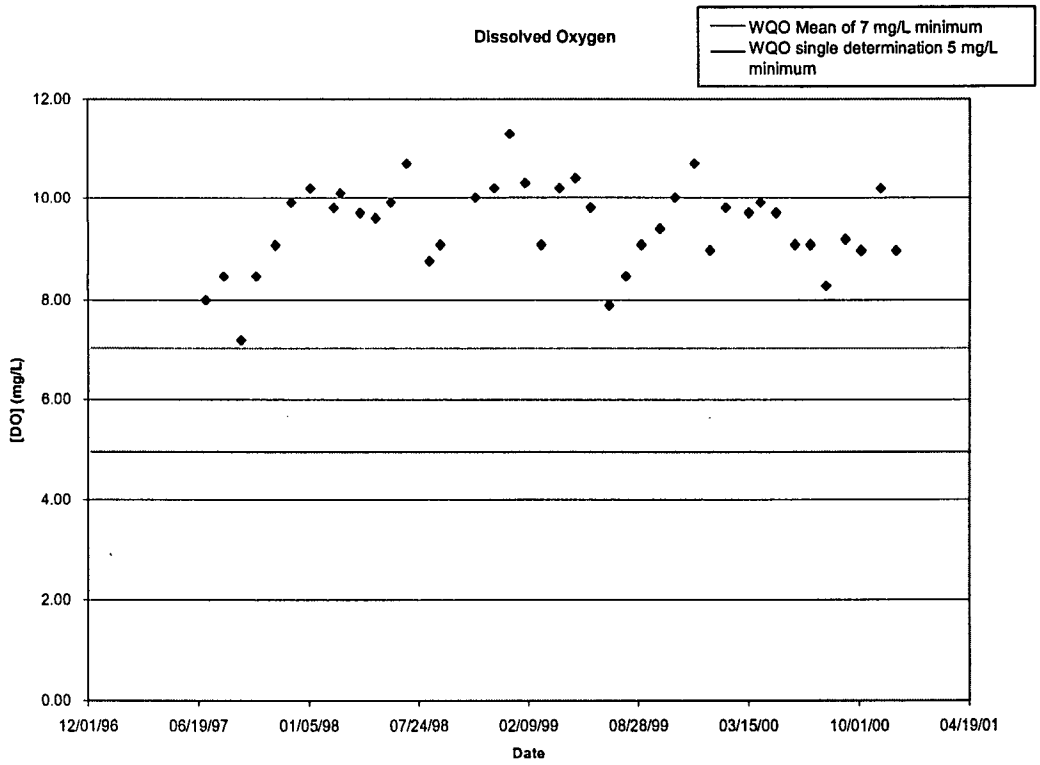
- Warm freshwater habitat

Data Assessment

Table 2. Summary of Dissolved Oxygen Data for Calleguas Creek Reach 11, Arroyo Santa Rosa.

Dates of Sampling	7/97-8/00
Number of Samples (n)	41
Minimum Data Value	7.2 mg/L
Maximum Data Value	11.3 mg/L
Median Data Value	9.7 mg/L
Arithmetic Mean Value	9.46 mg/L
Standard Deviation	0.84 mg/L
Number (Percent) above Objective	None, 0%.

Draft 12/03/01



Potential Sources

NA.

References

Calleguas Creek Chloride TMDL 2001
Calleguas Creek Characterization Study 2000
Watershed Management Initiative Chapter 2000
Basin Plan (1994)

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek South – Reach 2
Water Column Toxicity

Summary of Proposed Action

Delisting is proposed for Reach 2, Calleguas Creek South, for water column toxicity, which affects aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek R2	**Pollutants/Stressors**	Water Column Toxicity
Hydrologic Unit	403.12	**Source(s)**	N/A; delisting
Total Waterbody Size		**TMDL Priority**	N/A; delisting
Size Affected	4.4	**TMDL Start Date (Mo/Yr)**	N/A; delisting
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	N/A; delisting

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The Santa Susana Mountains, South Mountain, and Oak Ridge form the northern boundary of the watershed; the Simi Hills and Santa Monica Mountains form the southern boundary.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space; however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches that either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems that discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed.

Pollutants from nonpoint sources have impacted aquatic life in both Mugu Lagoon and the inland streams of this watershed. DDT, PCBs, other pesticides, and some metals have been detected in both sediment and biota collected from surface waterbodies of this watershed. Additionally, ambient toxicity has been revealed in several studies from periodic toxicity testing in the watershed (ammonia from POTWs and pesticides such as diazinon and chlorpyrifos are implicated). Fish collected from Calleguas Creek and Revolon Slough exhibit skin lesions and have been found to have other histopathologic abnormalities. High levels of minerals and nitrates are common in the water column as well as in the groundwater. Sediment toxicity is also elevated in some parts of the lagoon. Reproduction is impaired in the resident endangered species, the light-footed clapper rail due to elevated levels of DDT and PCBs. Overall, this is a very impaired watershed. It appears that the sources of many of these pollutants are agricultural activities (mostly through continued disturbance and erosion of historically contaminated soils), which cover approximately 25% of the watershed along the inland valleys and coastal plain, although the nearby naval facility has also been a contributor. Other nonpoint sources include residential and urban activities, which are present over approximately 25% of the watershed. The remaining 50% of the watershed is still open space although there is a severe lack of benthic and riparian habitat.

Mugu Lagoon as well as the Calleguas Creek Estuary are considered candidate toxic hot spots under the Bay Protection and Toxic Cleanup Program (BPTCP) for reproductive impairment (the endangered clapper rail), exceedance of the state Office of Environmental and Health Hazard Assessment (OEHHA) advisory level for mercury in fish, and exceedance of other tissue guidelines for DDT in fish and sediment concentrations of DDT, PCB, chlordane, chlorpyrifos, sediment toxicity and degraded benthic infaunal community.

Primary issues related to POTW discharges include ammonia toxicity and high mineral content (i.e., salinity), the latter, in part, due to imported water supplies.

Water Quality Objectives Attained

New delisting resulting from testing one site downstream of Camrosa Wastewater Treatment Plant for chronic water column toxicity using the fathead minnow and Ceriodaphnia (see data assessment table for test results).

Narrative objective listed in Basin Plan on page 3-16

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life. Use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration or other appropriate methods as specified by the State or Regional Board will determine compliance with this objective.

The survival of aquatic life in surface waters, subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same waterbody in areas unaffected by the waste discharge or, when necessary, other control water.

There shall be no acute toxicity in ambient waters, including mixing zones. The acute toxicity objective for discharges dictates that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival when using an established USEPA, State Board, or other protocol authorized by the Regional Board.

There shall be no chronic toxicity in ambient waters outside mixing zones. To determine compliance with this objective, critical life stage tests for at least three species with approved testing protocols shall be used to screen for the most sensitive species. The test species used for screening shall include a vertebrate, an invertebrate, and an aquatic plant. The most sensitive species shall then be used for routine monitoring. Typical endpoints for chronic toxicity tests include hatchability, gross morphological abnormalities, survival, growth, and reproduction.

Effluent limits for specific toxicants can be established by the Regional Board to control toxicity identified under Toxicity Identification Evaluations (TIEs).

Beneficial Uses Affected

Aquatic life beneficial uses

Data Assessment

Table 2. Summary of Water Column Toxicity Data for Calleguas Creek South (Reach 2)

Dates of Sampling	August 1998-May 1999
Number of Samples (n)	6
Minimum Data Value	0 % mortality, 0 % reproduction or growth inhibition
Maximum Data Value	>0 % mortality, > 0% reproduction or growth inhibition
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Percent above Objective	

Potential Sources

References

Calleguas Creek Characterization Study (September 2000) Site 6 data

California Regional Water Quality Control Board, Los Angeles Region

Conejo Creek – Reach 9A (tributary to Calleguas Creek)
(Lower part of former Conejo Creek Reach 1)
Water Column Toxicity

Summary of Proposed Action

Delisting is proposed for Reach 9A, Conejo Creek, tributary to Calleguas Creek, for water column toxicity, which affects aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Conejo Creek	**Pollutants/Stressors**	Water Column Toxicity
Hydrologic Unit	403.12	**Source(s)**	N/A
Total Waterbody Size		**TMDL Priority**	N/A; delisting
Size Affected	1.7	**TMDL Start Date (Mo/Yr)**	N/A
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	N/A

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The Santa Susana Mountains, South Mountain, and Oak Ridge form the northern boundary of the watershed; the Simi Hills and Santa Monica Mountains form the southern boundary.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space; however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches that either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems that discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed.

Pollutants from nonpoint sources have impacted aquatic life in both Mugu Lagoon and the inland streams of this watershed. DDT, PCBs, other pesticides, and some metals have been detected in both sediment and biota collected from surface waterbodies of this watershed. Additionally, ambient toxicity has been revealed in several studies from periodic toxicity testing in the watershed (ammonia from POTWs and pesticides such as diazinon and chlorpyrifos are implicated). Fish collected from Calleguas Creek and Revolon Slough exhibit skin lesions and have been found to have other histopathologic abnormalities. High levels of minerals and nitrates are common in the water column as well as in the groundwater. Sediment toxicity is also elevated in some parts of the lagoon. Reproduction is impaired in the resident endangered species, the light-footed clapper rail due to elevated levels of DDT and PCBs. Overall, this is a very impaired watershed. It appears that the sources of many of these pollutants are agricultural activities (mostly through continued disturbance and erosion of historically contaminated soils), which cover approximately 25% of the watershed along the inland valleys and coastal plain, although the nearby naval facility has also been a contributor. Other nonpoint sources include residential and urban activities, which are present over approximately 25% of the watershed. The remaining 50% of the watershed is still open space although there is a severe lack of benthic and riparian habitat.

Mugu Lagoon as well as the Calleguas Creek Estuary are considered candidate toxic hot spots under the Bay Protection and Toxic Cleanup Program (BPTCP) for reproductive impairment (the endangered clapper rail), exceedance of the state Office of Environmental and Health Hazard Assessment (OEHHA) advisory level for mercury in fish, and exceedance of other tissue guidelines for DDT in fish and sediment concentrations of DDT, PCB, chlordane, chlorpyrifos, sediment toxicity and degraded benthic infaunal community.

Primary issues related to POTW discharges include ammonia toxicity and high mineral content (i.e., salinity), the latter, in part, due to imported water supplies.

Water Quality Objectives Attained

Delisting resulting from testing two sites (one upstream and one downstream of Camarillo Water Reclamation Plant) for chronic water column toxicity using the fathead minnow and Ceriodaphnia.

Narrative objective listed in Basin Plan on page 3-16

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life. Use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration or other appropriate methods as specified by the State or Regional Board will determine compliance with this objective.

The survival of aquatic life in surface waters, subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same waterbody in areas unaffected by the waste discharge or, when necessary, other control water.

There shall be no acute toxicity in ambient waters, including mixing zones. The acute toxicity objective for discharges dictates that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival when using an established USEPA, State Board, or other protocol authorized by the Regional Board.

There shall be no chronic toxicity in ambient waters outside mixing zones. To determine compliance with this objective, critical life stage tests for at least three species with approved testing protocols shall be used to screen for the most sensitive species. The test species used for screening shall include a vertebrate, an invertebrate, and an aquatic plant. The most sensitive species shall then be used for routine monitoring.

Typical endpoints for chronic toxicity tests include hatchability, gross morphological abnormalities, survival, growth, and reproduction.

Effluent limits for specific toxicants can be established by the Regional Board to control toxicity identified under Toxicity Identification Evaluations (TIEs).

Beneficial Uses Affected

Aquatic life uses

Data Assessment

Table 2. Summary of Water Column Toxicity Data for Conejo Creek (Reach 9A of Calleguas Creek watershed)

Dates of Sampling	July 1997-August 2000
Number of Samples (n)	26 (13 each mortality & reproduction endpoints
Minimum Data Value	0 % mortality, 0 % reproduction inhibition
Maximum Data Value	58 % mortality, 32 % reproduction inhibition
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Percent above Objective	

Potential Sources

N/A

References

Camarillo POTW receiving water data (sites W15 and W16) and Calleguas Creek Characterization Study (September 2000) (site 12). There was some data overlap.

303 (d) Fact Sheet

Los Angeles River Watershed

11/19/01

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Watershed R2 - McCoy Canyon Creek
Total Selenium

Summary of Proposed Action

McCoy Canyon Creek, located in the Los Angeles River Watershed (Reach 2) is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the total selenium chronic water quality criterion for protection of freshwater aquatic life. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	McCoy Canyon Creek	**Pollutants/Stressors**	Selenium
Hydrologic Unit	405.21	**Source(s)**	Non-point sources
Total Waterbody Size	3.6 miles	**TMDL Priority**	Analytical Unit 13
Size Affected	3.6 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Entire Creek	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. The river has several tributaries including Arroyo Calabasas which, in turn, has McCoy Canyon Creek as a tributary. McCoy Canyon Creek is located mostly in the City of Calabasas, though it joins Arroyo Calabasas in the City of Los Angeles. Land use in this sub watershed is mostly open space with some residential, commercial, mixed urban, and transportation.

Water Quality Objectives Not Attained

Through the California Toxics Rule, the U.S. EPA promulgated water quality criteria for priority pollutants for the protection of freshwater aquatic life. The chronic criterion for selenium is 5 µg/l. This was exceeded in 97 % of the sampling events.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

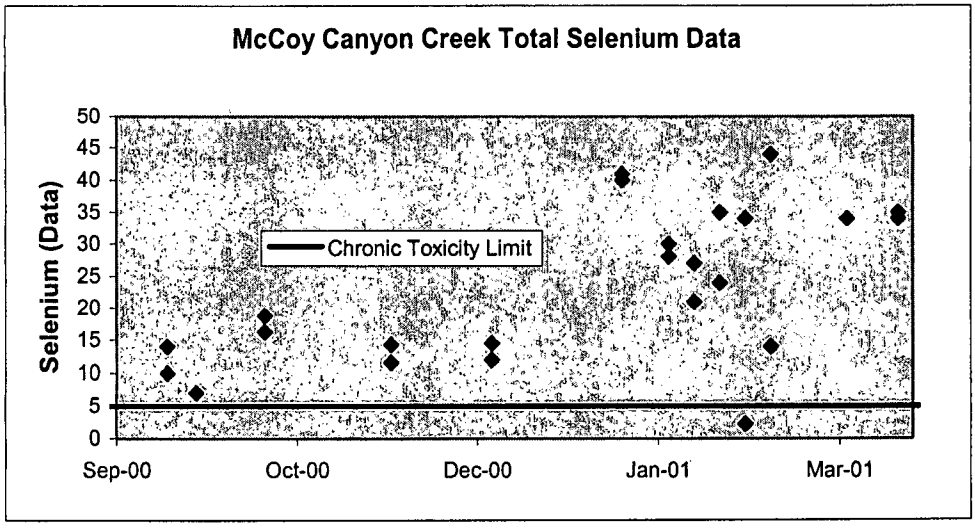


Table 2. Summary of Total Selenium Data for McCoy Canyon Creek

Dates of Sampling	7/00 - 4/01
Number of Samples (n)	33
Minimum Data Value	2.2 µg/l
Maximum Data Value	44 µg/l
Median Data Value	21 µg/L
Arithmetic Mean Value	22.3 µg/l
Standard Deviation	11.5 µg/L
Percent above Chronic Criterion	97 %

Potential Sources

Natural and urban runoff are likely sources of selenium loading to this waterbody.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Watershed R2 - McCoy Canyon Creek
Fecal Coliform

Summary of Proposed Action

McCoy Canyon Creek, located in the Los Angeles River Watershed (Reach 2), is proposed to be listed in the 2002 305(b) water quality assessment as partially supporting (impaired) due to greater than ten percent (10%) exceedance of the fecal coliform water quality objective for protection of water contact recreation. The beneficial use affected by this impairment is water contact recreation (REC 1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	McCoy Canyon Creek	**Pollutants/Stressors**	Fecal Coliform
Hydrologic Unit	405.21	**Source(s)**	Non-point sources
Total Waterbody Size	3.6 miles	**TMDL Priority**	Analytical Unit 15
Size Affected	3.6 miles	**TMDL Start Date (Mo/Yr)**	2000
Extent of Impairment	Entire Creek	**TMDL End Date (Mo/Yr)**	2002

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. The river has several tributaries including Arroyo Calabasas which, in turn, has McCoy Canyon Creek as a tributary. McCoy Canyon Creek is located mostly in the City of Calabasas, though it joins Arroyo Calabasas in the City of Los Angeles. Land use in this sub watershed is mostly open space some residential, commercial, mixed urban, and transportation.

Water Quality Objectives Not Attained

The Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties contains water quality standards for the protection of beneficial uses of waterbodies in the region. The basin plan stipulates that no more than 10% of total samples within a 30-day period should exceed 400/100ml for water contact recreation. Analysis of available data determined that the objective for REC 1 was exceeded in 67.9% of the sampling events.

Beneficial Uses Affected

- Water Contact Recreation

Data Assessment

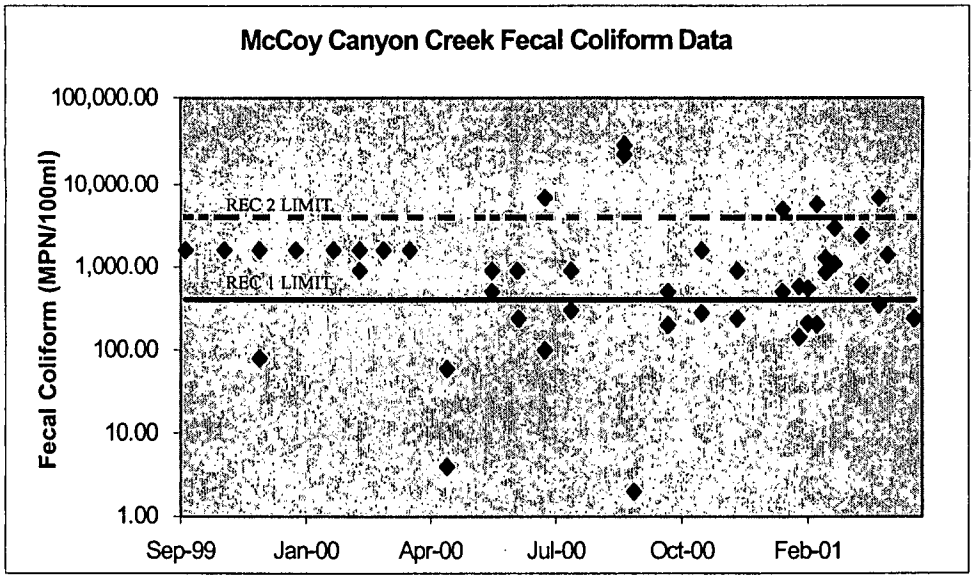


Table 2. Summary of Fecal Coliform Data for McCoy Canyon Creek

Dates of Sampling	10/99 – 4/01
Number of Samples (n)	56
Minimum Data Value	0
Maximum Data Value	30,000
Median Data Value	900
Arithmetic Mean Value	1,800
Standard Deviation	5,576
Percent above REC 1 Objective	67.9 %

Potential Sources

Natural and urban run-off are sources of coliform loading to this waterbody.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River R2 - McCoy Canyon Creek
Nitrate

Summary of Proposed Action

McCoy Canyon Creek, located in the Los Angeles River Watershed (Reach 2), is proposed to be listed in the 2002 305(b) water quality assessment as fully supporting but threatened (impaired) due to greater than ten percent (10%) exceedance of the total nitrate water quality objective for protection of potential drinking water supplies. The beneficial use affected by this impairment is potential municipal and domestic supply (MUN).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	McCoy Canyon Creek	**Pollutants/Stressors**	Nitrate
Hydrologic Unit	405.21	**Source(s)**	Non-point sources
Total Waterbody Size	3.6 miles	**TMDL Priority**	Low
Size Affected	3.6 miles	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire Creek	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. The river has several tributaries including Arroyo Calabasas which, in turn, has McCoy Canyon Creek as a tributary. McCoy Canyon Creek is located mostly in the City of Calabasas, though it joins Arroyo Calabasas in the City of Los Angeles. Land use in this sub watershed is mostly open space with some residential, commercial, mixed urban, and transportation

Water Quality Objectives Not Attained

Title 22 of the California Code of Regulations specifies maximum contaminant levels for drinking water supplies. These maximum contaminant levels (MCLs) are incorporated into the Basin Plan as water quality objectives to protect the MUN beneficial use. The objective for nitrate is 10 mg/l. Analysis of available data determined that this objective was exceeded in 37.3% of the sampling events.

Beneficial Uses Affected

- Potential Municipal and Domestic Supply

Data Assessment

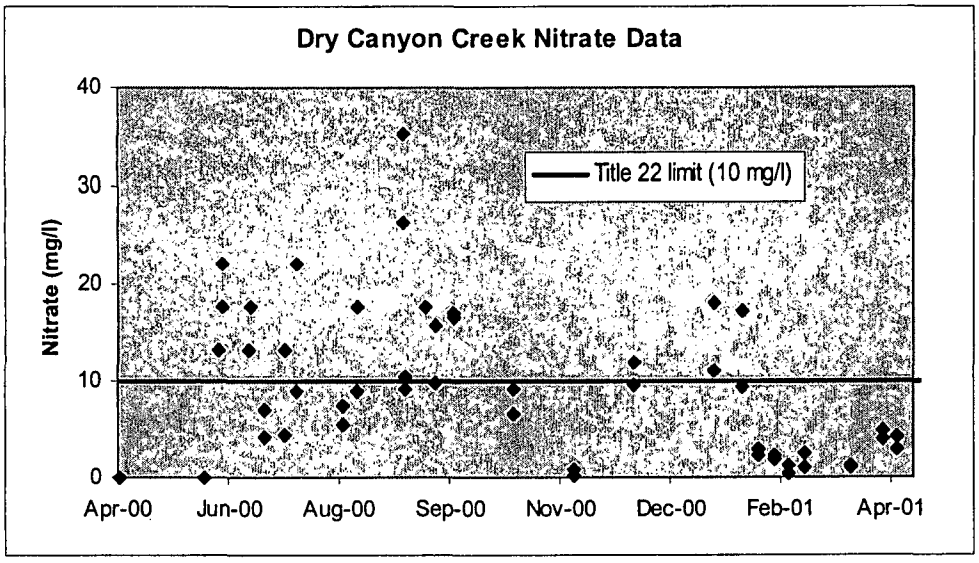


Table 2. Summary of Nitrate Data for McCoy Canyon Creek

Dates of Sampling	4/00 – 4/01
Number of Samples (n)	51
Minimum Data Value	0 mg/l
Maximum Data Value	35.2 mg/l
Median Data Value	8.8 mg/l
Arithmetic Mean Value	9.28 mg/l
Standard Deviation	7.77 mg/l
Percent above Objective	37.3 %

Potential Sources

Runoff from natural and urban sources

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Watershed R2 - Dry Canyon Creek
Total Selenium

Summary of Proposed Action

Dry Canyon Creek, located in the Los Angeles River Watershed (Reach 2), is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the total selenium chronic water quality criterion for protection of freshwater aquatic life. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Dry Canyon Creek	**Pollutants/Stressors**	Selenium
Hydrologic Unit	405.21	**Source(s)**	Non-point sources
Total Waterbody Size	3.9 miles	**TMDL Priority**	Analytical Unit 13
Size Affected	3.9 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Entire Creek	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. The river has several tributaries including Arroyo Calabasas which, in turn, has Dry Canyon Creek as a tributary. Most of Dry Canyon Creek is located in the City of Calabasas, though it joins Arroyo Calabasas in the City of Los Angeles. Land use in this sub watershed is mostly open space with some residential, commercial, mixed urban, and transportation.

Water Quality Objectives Not Attained

Through the California Toxics Rule, the U.S. EPA promulgated water quality criteria for priority pollutants for the protection of freshwater aquatic life. The chronic criterion for selenium is 5 µg/l. This was exceeded in 28.1 % of the sampling events.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

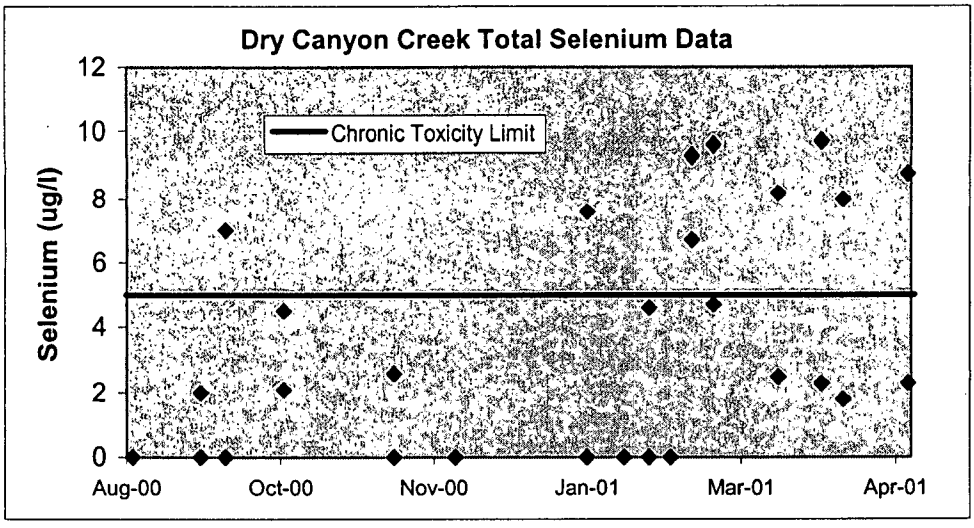


Table 2. Summary of Total Selenium Data for Dry Canyon Creek

Dates of Sampling	8/00 – 5/01
Number of Samples (n)	32
Minimum Data Value	0 µg/l
Maximum Data Value	9.7 µg/l
Median Data Value	2.2 µg/l
Arithmetic Mean Value	3.3 µg/l
Standard Deviation	3.6 µg/l
Percent above Objective	28.1 %

Potential Sources

Natural and urban runoff are likely sources of selenium loading to this waterbody.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Watershed R2 - Dry Canyon Creek
Fecal Coliform

Summary of Proposed Action

Dry Canyon Creek, located in the Los Angeles River Watershed (Reach 2), is proposed to be listed in the 2002 305(b) water quality assessment as partially supporting (impaired) due to greater than ten percent (10%) exceedance of the fecal coliform water quality objective for protection of water contact recreation (REC 1). The beneficial use affected by this impairment is REC 1.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Dry Canyon Creek	**Pollutants/Stressors**	Fecal Coliform
Hydrologic Unit	405.21	**Source(s)**	Non-point sources
Total Waterbody Size	3.9 miles	**TMDL Priority**	Analytical Unit 15
Size Affected	3.9 miles	**TMDL Start Date (Mo/Yr)**	2000
Extent of Impairment	Entire Creek	**TMDL End Date (Mo/Yr)**	2002

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. The river has several tributaries including Arroyo Calabasas which, in turn, has Dry Canyon Creek as a tributary. Most of Dry Canyon Creek is located in the City of Calabasas, though it joins Arroyo Calabasas in the City of Los Angeles. Land use in this sub watershed is mostly open space with some residential, commercial, mixed urban, and transportation.

Water Quality Objectives Not Attained

The Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties contains water quality standards for the protection of beneficial uses of waterbodies in the region. The basin plan stipulates no more than 10% of total samples within a 30-day period should exceed 400/100ml for water contact recreation. Analysis of available data determined that the limit for REC 1 was exceeded in 19.6% of the sampling events.

Beneficial Uses Affected

- Water Contact Recreation

Data Assessment

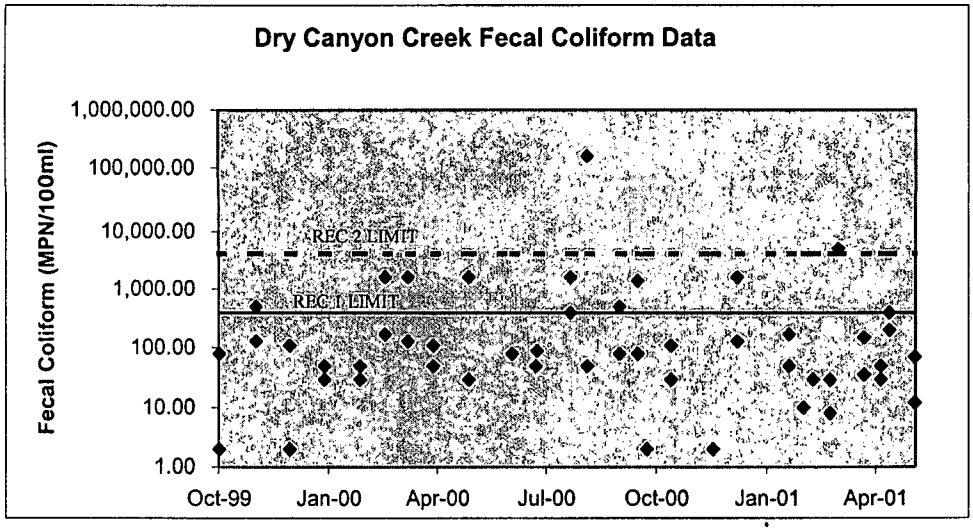


Table 2. Summary of Fecal Coliform Data for Dry Canyon Creek

Dates of Sampling	11/99 – 5/01
Number of Samples (n)	56
Minimum Data Value	0
Maximum Data Value	160,000
Median Data Value	80
Arithmetic Mean Value	3,283
Standard Deviation	21,347
Percent above REC 1 Objective	19.6%

Potential Sources

Natural and urban runoff are likely sources of coliform loading to this waterbody.

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Reach 1
Total Aluminum

Summary of Proposed Action

Reach 1 of the Los Angeles River is proposed to be listed in the 2002 305(b) water quality assessment as fully supporting but threatened (impaired) due to greater than ten percent (10%) exceedance of the total aluminum water quality criteria for protection of potential drinking water sources. The beneficial use affected by this impairment is the potential for municipal and domestic supply (MUN).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Los Angeles River	**Pollutants/Stressors**	Aluminum
Hydrologic Unit	405.12	**Source(s)**	Point and Non-point sources
Total Waterbody Size	51 miles	**TMDL Priority**	Analytical Unit 13
Size Affected	23 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Reach 1	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. Reach 1 of the Los Angeles River extends from the Estuary to just above the confluence with Arroyo Seco, and includes Rio Hondo below the Santa Ana Freeway.

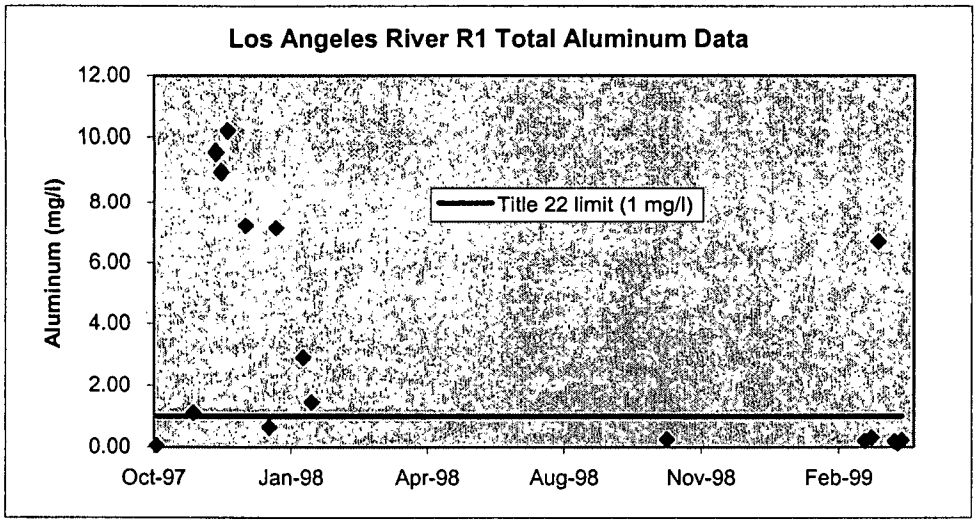
Water Quality Objectives Not Attained

Title 22 of the California Code of Regulations specifies maximum contaminant levels for drinking water supplies. These maximum contaminant levels (MCLs) are incorporated into the Basin Plan as water quality objectives to protect the MUN beneficial use. The objective for aluminum is 1 mg/l. Analysis of available data determined that this limit was exceeded in 55.6% of the sampling events. The more recent data indicates compliance with criteria. If this trend continues, aluminum can be removed from the list in the next cycle.

Beneficial Uses Affected

- Potential Municipal and Domestic Supply

Data Assessment



note: maximum data value not shown on graph

Table 2. Summary of Total Aluminum data for Reach 1 of the Los Angeles River

Dates of Sampling	10/97 - 4/99
Number of Samples (n)	18
Minimum Data Value	.05 mg/l
Maximum Data Value	60 mg/l
Median Data Value	1.28 mg/l
Arithmetic Mean Value	6.6 mg/l
Standard Deviation	14.1 mg/l
Percent above Objective	55.6%

Potential Sources

Point and nonpoint sources

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Reach 1
Dissolved Cadmium

Summary of Proposed Action

Reach 1 of the Los Angeles River is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) for freshwater aquatic life and fully supporting but threatened for potential municipal and domestic supply due to greater than ten percent (10%) exceedance of the dissolved and total cadmium water quality criteria for protection of freshwater aquatic life and potential drinking water sources. The beneficial uses affected by this impairment include warm freshwater habitat and wildlife habitat and potential municipal and domestic supply (MUN).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Los Angeles River	**Pollutants/Stressors**	Cadmium
Hydrologic Unit	405.12	**Source(s)**	Point and Non-point sources
Total Waterbody Size	51 miles	**TMDL Priority**	Analytical Unit 13
Size Affected	23 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Reach 1	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. Reach 1 of the Los Angeles River extends from the Estuary to just above the confluence with Arroyo Seco, and includes Rio Hondo below the Santa Ana Freeway.

Water Quality Objectives Not Attained

Through the California Toxics Rule, the U.S. EPA promulgated water quality criteria for priority pollutants for the protection of freshwater aquatic life. The criteria for acute and chronic toxicity for cadmium are dependent on the hardness of the water. Based on the available hardness data, it was determined that the acute and chronic criteria for cadmium were exceeded in 22.2% and 33.3% of the sampling events, respectively. In addition to this, the maximum contaminant level for total cadmium, specified by Title 22 of

the California Code of Regulations, was exceeded in 11.1% of the sampling events. The more recent data indicates compliance with criteria. If this trend continues, cadmium can be removed from the list in the next cycle.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat
- Potential Municipal and Domestic Supply

Data Assessment

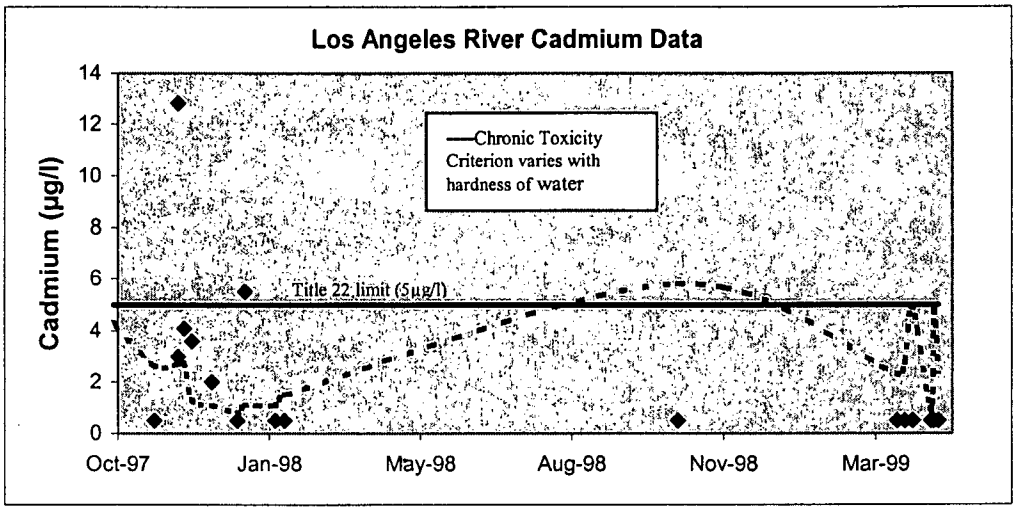


Table 2. Summary of Cadmium data for Reach 1 of the Los Angeles River

Dates of Sampling	10/97 - 4/99
Number of Samples (n)	18
Minimum Data Value	0.5 µg/l
Maximum Data Value	12.8 µg/l
Median Data Value	0.5 µg/l
Arithmetic Mean Value	2.1 µg/l
Standard Deviation	3.1 µg/l
Percent above Objective	22.2% (acute) 33.3% (chronic) CTR, 11.1% (Title 22)

Potential Sources

Point and nonpoint sources

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Reach 1
Dissolved Copper

Summary of Proposed Action

Reach 1 of the Los Angeles River is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the dissolved copper water quality criteria for protection of freshwater aquatic life. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Los Angeles River	**Pollutants/Stressors**	Copper
Hydrologic Unit	405.12	**Source(s)**	Point and Non-point sources
Total Waterbody Size	51 miles	**TMDL Priority**	Analytical Unit 13
Size Affected	23 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Reach 1	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. Reach 1 of the Los Angeles River extends from the Estuary to just above the confluence with Arroyo Seco, and includes Rio Hondo below the Santa Ana Freeway.

Water Quality Objectives Not Attained

Through the California Toxics Rule, the U.S. EPA promulgated water quality criteria for priority pollutants for the protection of freshwater aquatic life. The limits for acute and chronic toxicity for copper are dependent on the water hardness value. Based on the available hardness data, it was determined that the limits for acute and chronic copper toxicity was exceeded in 61.1% and 72.2% of the sampling events, respectively.

Beneficial Uses Affected

- Warm Freshwater Habitat
- Wildlife Habitat

Data Assessment

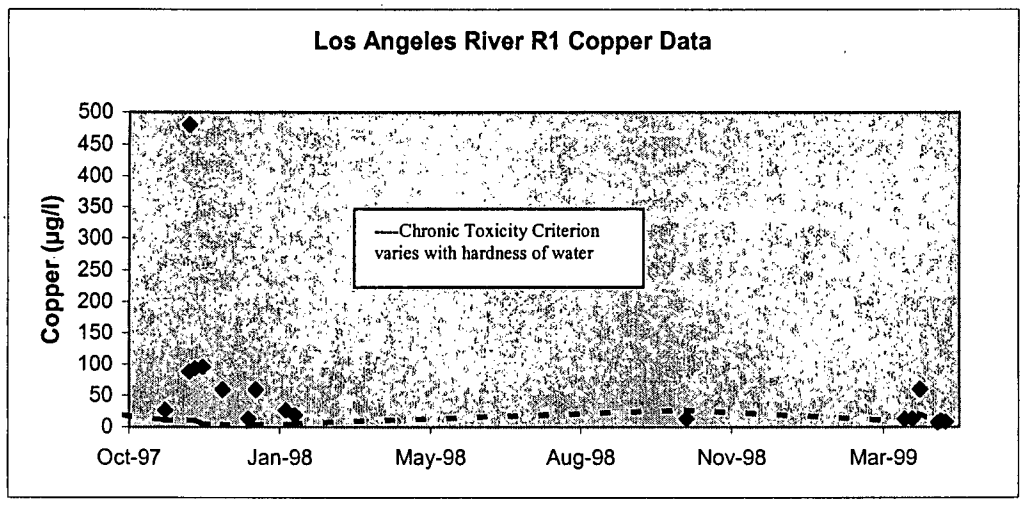


Table 2. Summary of Copper data for Reach 1 of the Los Angeles River

Dates of Sampling	10/97 - 4/99
Number of Samples (n)	18
Minimum Data Value	2.4 µg/l
Maximum Data Value	480 µg/l
Median Data Value	23 µg/l
Arithmetic Mean Value	61 µg/l
Standard Deviation	109 µg/l
Percent above Objective	61.1% (acute) 72.2% (chronic)

Potential Sources

Point and nonpoint sources

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

California Regional Water Quality Control Board, Los Angeles Region

Los Angeles River Reach 1
Dissolved Zinc

Summary of Proposed Action

Reach 1 of the Los Angeles River is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than ten percent (10%) exceedance of the dissolved zinc acute and chronic water quality criteria for protection of freshwater aquatic life. The beneficial uses affected by this impairment relate to aquatic life and include warm freshwater habitat and wildlife habitat..

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Los Angeles River	**Pollutants/Stressors**	Zinc
Hydrologic Unit	405.12	**Source(s)**	Point and Non-point sources
Total Waterbody Size	51 miles	**TMDL Priority**	Analytical Unit 13
Size Affected	23 miles	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Reach 1	**TMDL End Date (Mo/Yr)**	2004

Watershed Characteristics

The Los Angeles River drains 824 square miles and is 55 miles long. Forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. Reach 1 of the Los Angeles River extends from the Estuary to just above the confluence with Arroyo Seco, and includes Rio Hondo below the Santa Ana Freeway.

Water Quality Objectives Not Attained

The California Toxics Rule established water quality criteria for priority pollutants for the protection of freshwater aquatic life. The limits for acute and chronic toxicity for zinc are dependent on the water hardness value. Based on the available hardness data, it was determined that the acute and chronic criteria for zinc were exceeded in 38.9% of the sampling events.

Beneficial Uses Affected

- Warm Freshwater Habitat

- Wildlife Habitat

Data Assessment

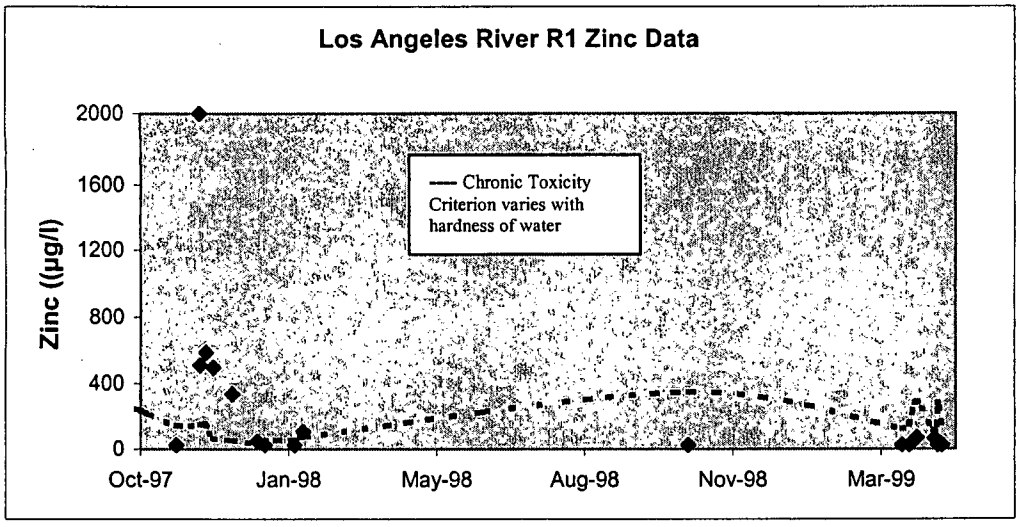


Table 2. Summary of zinc data for Reach 1 of the Los Angeles River

Dates of Sampling	10/97 – 4/99
Number of Samples (n)	18
Minimum Data Value	25 µg/l
Maximum Data Value	2000 µg/l
Median Data Value	37.5 µg/l
Arithmetic Mean Value	247 µg/l
Standard Deviation	479 µg/l
Percent above Chronic Criterion	38.9% (for both acute and chronic)

Potential Sources

Point and nonpoint sources

References

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 1994
Watershed Management Initiative, 2000
California Toxics Rule

303 (d) Fact Sheet

Malibu Creek Watershed

11/19/01

California Regional Water Quality Control Board, Los Angeles Region

Malibu Creek Watershed – Malibu Creek
Total Selenium

Summary of Proposed Action

Malibu Creek is proposed to be listed in the 2002 305(b) water quality assessment as partially supporting (impaired) due to greater than one exceedance of the total selenium chronic water quality criterion for protection of fresh water aquatic life. The beneficial uses that are affected by this impairment relate to aquatic life use support and include warm freshwater habitat, wildlife habitat, and rare/endangered species habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Malibu Creek	**Pollutants/Stressors**	Total Selenium
Hydrologic Unit	404.21	**Source(s)**	Nonpoint Sources
Total Waterbody Size	9.9	**TMDL Priority**	TMDL Analytical Unit 68
Size Affected	9.9	**TMDL Start Date (Mo/Yr)**	2006
Extent of Impairment	Malibu Creek to Malibu Lagoon	**TMDL End Date (Mo/Yr)**	2008

Watershed Characteristics

The Malibu Creek watershed is located about 35 miles west of Los Angeles, California. The watershed extends from the Santa Monica Mountains and adjacent Simi Hills to the Pacific coast at Santa Monica Bay, and drains an area of 109 square miles (Figure 3). The outlet of the watershed is Malibu Lagoon in the city of Malibu. Outflows from the watershed drain into Santa Monica Bay at Malibu Beach when the entrance to the lagoon is open to the ocean. However, coastal sediment transport processes typically form a sand barrier that blocks the entrance during the dry season. Malibu Lagoon accumulates all the watershed flows during these closed periods. Several creeks and lakes occur in the upper portions of the watershed, and these ultimately drain into Malibu Creek, which is the main stream in the downstream portion of the watershed. Malibu Creek drains into Malibu Lagoon.

Water Quality Objectives Not Attained

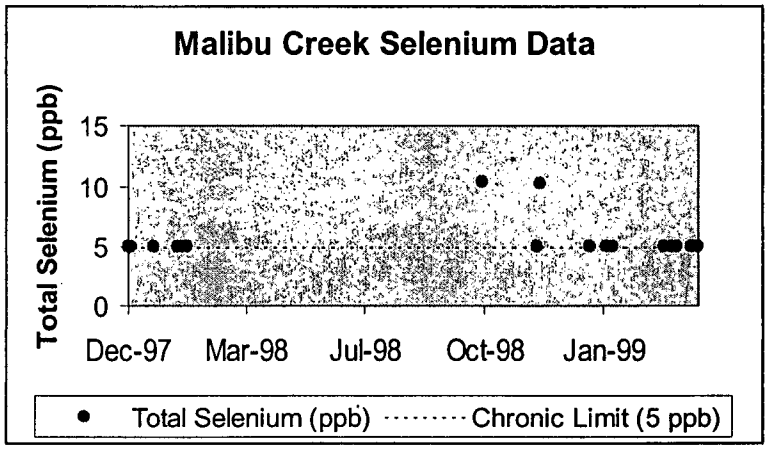
Through the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect fresh water aquatic life. The recommended Criteria Continuous Concentration for total selenium is 5 µg/l. This criterion range was exceeded in 10% of the sampling events.

Beneficial Uses Affected

- non-contact water recreation
- contact recreation
- warm freshwater habitat
- cold freshwater habitat
- wildlife habitat
- migration of aquatic organisms
- spawn, reproduction, and/or early development
- rare/endangered species

Data Assessment

The chart below shows that during the 1998-1999 monitoring year the concentration of total selenium was exceeded during two monitoring events. The data analyzed in the charts was collected from a storm water monitoring program. During 1999-2000 monitoring year, the selenium concentrations in the storm water samples were below the 5.0 µg/l limit.



Summary Table for Total Selenium

	Total Selenium (µg/l)
Dates of Sampling	11/10/97- 11/10/99
Number of Samples (n)	21
Minimum Data Value	5
Maximum Data Value	10.4
Median Data Value	5
Arithmetic Mean Value	5.51
Standard Deviation	1.61
Percent above CCC	10

Potential Sources

The sampling location for the total selenium data was the mass loading station (S02) monitored by the Los Angeles County Department of Public Works Storm Water Monitoring Program. Therefore, it is assumed that the total selenium loading occurs during wet weather storm events.

References

Basin Plan, 1994
Watershed Management Initiative, 2000
Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 2000
California Toxics Rule, August 2000

California Regional Water Quality Control Board, Los Angeles Region

Malibu Creek Watershed – Cold Creek
Algae

Summary of Proposed Action

Cold Creek is proposed to be listed in the 2002 305(b) water quality assessment as impaired due to observations of excessive algal growth (greater than 30 percent coverage). The beneficial uses that are affected by this impairment relate to recreational (non-contact and contact) and aquatic life use support.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Cold Creek	**Pollutants/Stressors**	Algae
Hydrologic Unit	404.21	**Source(s)**	Nonpoint Sources
Total Waterbody Size	9.9	**TMDL Priority**	Analytical Unit 50
Size Affected	1.4	**TMDL Start Date (Mo/Yr)**	1999
Extent of Impairment	Coray Way to confluence with Malibu Creek	**TMDL End Date (Mo/Yr)**	May 2002

Watershed Characteristics

The Malibu Creek watershed is located about 35 miles west of Los Angeles, California. The watershed extends from the Santa Monica Mountains and adjacent Simi Hills to the Pacific coast at Santa Monica Bay, and drains an area of 109 square miles (Figure 3). The outlet of the watershed is Malibu Lagoon in the city of Malibu. Outflows from the watershed drain into Santa Monica Bay at Malibu Beach when the entrance to the lagoon is open to the ocean. However, coastal sediment transport processes typically form a sand barrier that blocks the entrance during the dry season. Malibu Lagoon accumulates all the watershed flows during these closed periods. Several creeks and lakes occur in the upper portions of the watershed, and these ultimately drain into Malibu Creek, which is the main stream in the downstream portion of the watershed. Malibu Creek drains into Malibu Lagoon.

Water Quality Objectives Not Attained

The Water Quality Control Plan for the Los Angeles Region (Basin Plan) states that, "Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses." In addition, the plan states, " Water shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses." A minimum of ten samples within a 3-year period was required to assess whether Cold Creek was supporting its beneficial uses. The narrative criterion of excessive nuisance algae is expressed as algal cover exceeding 30% based on Biggs, 2000. Impairment is defined as an exceedance of the criterion in at least 10% of the samples. The criterion is not specific to floating or bottom algae and so was used to evaluate both. Based on the assessment, Cold Creek exceeded the criteria in 10% of the observations.

Beneficial Uses Affected

- non-contact water recreation
- contact recreation
- warm freshwater habitat
- cold freshwater habitat
- wildlife habitat
- migration of aquatic organisms
- spawn, reproduction, and/or early development
- rare/endangered species

Data Assessment

Summary of Algae Data for Lower Cold Creek

	Algae Observations
Dates of Sampling	11/7/98- 4/7/01
Number of Samples (n)	43
Observation with > 30 coverage	8
Number (Percent) above Objective	19 %

Potential Sources

The data from the Heal the Bay monitoring location HTB3 (just above outlet to Malibu Creek) provided all of the impairment data points. This sampling location is downstream from rural residential homes with septic systems and horses, which are typical nutrient sources. The sampling site also has open areas, which have limited shading.

References

Basin Plan, 1994
Watershed Management Initiative, 2000
Biggs, B. J. F, 2000. New Zealand Periphyton Guideline: Detecting, monitoring, and managing enrichment of streams. New Zealand Ministry of the Environment. Page 91.

303 (d) Fact Sheet

San Gabriel River Watershed

11/19/01

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Estuary
Trash

Summary of Proposed Action

The San Gabriel River Estuary is proposed to be listed in the 2002 303(b) water quality assessment as impaired due to non attainment of the narrative objective for floating and settleable materials objective as described in the Basin Plan. The beneficial uses that are affected by this impairment relate to recreational use (contact and non-contact) and aquatic life. The San Gabriel River Estuary is located downstream from Willow Street.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	San Gabriel River Estuary	**Pollutants/Stressors**	Trash
Hydrologic Unit	405.15	**Source(s)**	Nonpoint Sources
Total Waterbody Size	41.5 miles	**TMDL Priority**	Low
Size Affected	2.95 miles	**TMDL Start Date (Mo/Yr)**	2011
Extent of Impairment	Entire Estuary	**TMDL End Date (Mo/Yr)**	2013

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives Not Attained

The Water Quality Control Plan for the Los Angeles Region (Basin Plan) states that, "Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses." In addition, the plan states, "Water shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses." Both of these objectives were not attained in the estuary as indicated by photographic documentation of gross impairment due to trash.

Beneficial Uses Affected

- non-contact water recreation
- water contact recreation
- estuarine habitat
- marine habitat
- wildlife habitat
- rare/endangered species
- migration of aquatic organisms
- spawning, reproduction, and/or early development
- shellfish harvesting

Data Assessment

Photographic evidence of gross impairment of water quality due to trash was provided for several dates in October and November of 2000 and at several locations in the vicinity of the confluence of Coyote Creek with the San Gabriel River Estuary.

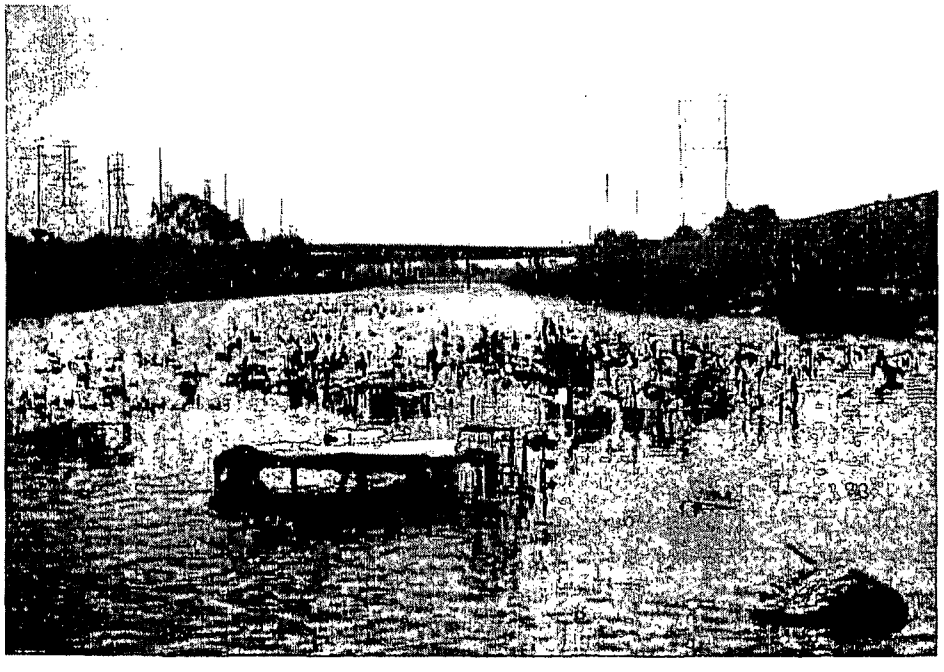


Figure 1:
Sample of Photographic Documentation of Gross Impairment due to Trash in the San Gabriel River Estuary

Potential Sources

Stormwater discharge is the major source of trash in the river. The locations from which the photographs were taken included sites near a storm drain. These sites had trash at and adjacent to the drain locations.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- Photographs provided by the Seal Beach Chamber & Business Association, May 2001
- A compilation of Water Quality Goals, August 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Reach 1
Nitrite as Nitrogen

Summary of Proposed Action

Reach 1 of the San Gabriel River is proposed to be listed in the 2002 305(b) water quality assessment as partially supporting due to the median exceeding the water quality objective as described in the Basin Plan. The beneficial use that is affected by this impairment is the potential municipal and domestic supply (MUN) use. [Firestone Boulevard (upstream extent) to the San Gabriel River Estuary (downstream extent) defines Reach 1 of the river.]

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	San Gabriel River R1	**Pollutants/Stressors**	Nitrite as Nitrogen
Hydrologic Unit	405.15	**Source(s)**	Point Sources
Total Waterbody Size	41.5 miles	**TMDL Priority**	Analytical Unit 37
Size Affected	8.73 miles	**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2003

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives Not Attained

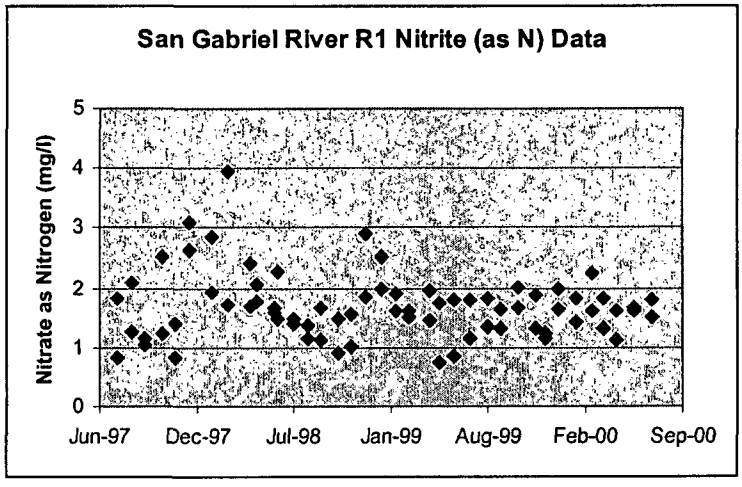
The Water Quality Control Plan for the Los Angeles Region (Basin Plan) states, "waters shall not exceed...1 mg/l as nitrite-nitrogen (NO_2-N)." This criterion range was exceeded in 93% of the water quality samples.

Beneficial Uses Affected

- Municipal and Domestic Supply

Data Assessment

Summary for Nitrite as Nitrogen Data



	Nitrite as nitrogen (mg/L)
Dates of Sampling	7/8/97- 7/11/00
Number of Samples (n)	74
Minimum Data Value	0.76
Maximum Data Value	3.96
Median Data Value	1.63
Arithmetic Mean Value	1.98
Standard Deviation	0.55
Percent above Objective	93 %

Potential Sources

The sampling locations for the nitrite as nitrogen data were the NPDES receiving water stations monitored by the San Jose Creek Waste Water Reclamation Plant (WWRP) and the Los Coyotes WWRP. Storm water monitoring data was not available for this stream reach, so Reach 2 storm water data was reviewed. The mean nitrite as nitrogen concentration, during storm events in Reach 2, was 0.5 mg/l; the range was 0.092 to 1.2 mg/l. Three samples taken upstream of the two WWRP in Reach 2 at station RA have a mean of 0.29 mg/l. On the other hand, the mean concentration of samples taken within Reach 1 and downstream of the WWRPs at stations R2 and R4 was 1.63 mg/l. Based on the data reviewed, the likely sources of elevated nitrite as nitrogen in the river are the WWRPs.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Coyote Creek
Total Selenium

Summary of Proposed Action

Coyote Creek, a tributary of the San Gabriel River, is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than one exceedance of the total selenium chronic water quality criterion for protection of fresh water aquatic life. The beneficial uses that are affected by this impairment relate to aquatic life use support and include warm freshwater habitat, wildlife habitat, and rare/endangered species habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Coyote Creek	**Pollutants/Stressors**	Total Selenium
Hydrologic Unit	405.15	**Source(s)**	Nonpoint Sources
Total Waterbody Size	13.5	**TMDL Priority**	TMDL Analytical Unit 39
Size Affected	13.5 miles	**TMDL Start Date (Mo/Yr)**	2004
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives Not Attained

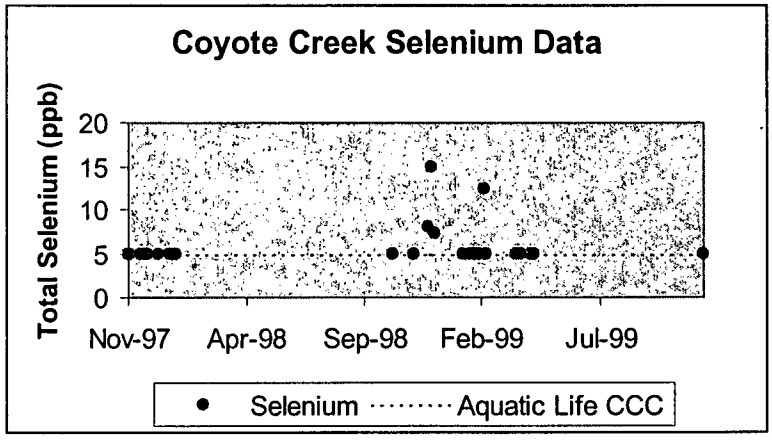
Through the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect fresh water aquatic life. The recommended Criteria Continuous Concentration for total selenium is 5 µg/l. This criterion range was exceeded in 19% of the sampling events.

Beneficial Uses Affected

- warm freshwater habitat
- wildlife habitat
- rare/endangered species habitat

Data Assessment

The chart below shows that during the 1998-1999 monitoring year the concentration of total selenium was exceeded during five monitoring events. The data analyzed in the charts was collected from a storm water monitoring program. During 1999-2000 monitoring year, the selenium concentrations in the storm water samples were below the 5.0 µg/l limit.



Summary Table for Total Selenium

	Total Selenium (µg/l)
Dates of Sampling	11/10/97- 11/10/99
Number of Samples (n)	26
Minimum Data Value	5
Maximum Data Value	14.9
Median Data Value	5
Arithmetic Mean Value	5.86
Standard Deviation	2.42
Percent above CCC	19

Potential Sources

The sampling location for the total selenium data was the mass loading station (S13) monitored by the Los Angeles County Department of Public Works Storm Water Monitoring Program. Therefore, it is assumed that the total selenium loading occurs during wet weather storm events.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 2000
- California Toxics Rule, August 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Coyote Creek
Dissolved Copper

Summary of Proposed Action

Coyote Creek, a tributary of the San Gabriel River, is proposed to be listed in the 2002 305(b) water quality assessment as not supporting due to greater than 10 percent exceedance of the dissolved copper chronic water quality criterion for protection of fresh water aquatic life. The beneficial uses that are affected by this impairment relate to aquatic life use support and include warm freshwater habitat, wildlife habitat, and rare/endangered species habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Coyote Creek	**Pollutants/Stressors**	Dissolved Copper
Hydrologic Unit	405.15	**Source(s)**	Nonpoint Sources
Total Waterbody Size	13.5	**TMDL Priority**	TMDL Analytical Unit 39
Size Affected	13.5 miles	**TMDL Start Date (Mo/Yr)**	2004
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives Not Attained

Though the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect of fresh water aquatic life. The recommended Criteria Continuous Concentration for dissolved copper is dependent on the water hardness value. After considering the event specific hardness values, the range of acceptable concentrations was determined to be 5 - 30 µg/l. This criterion range was exceeded in 62% of the sampling events.

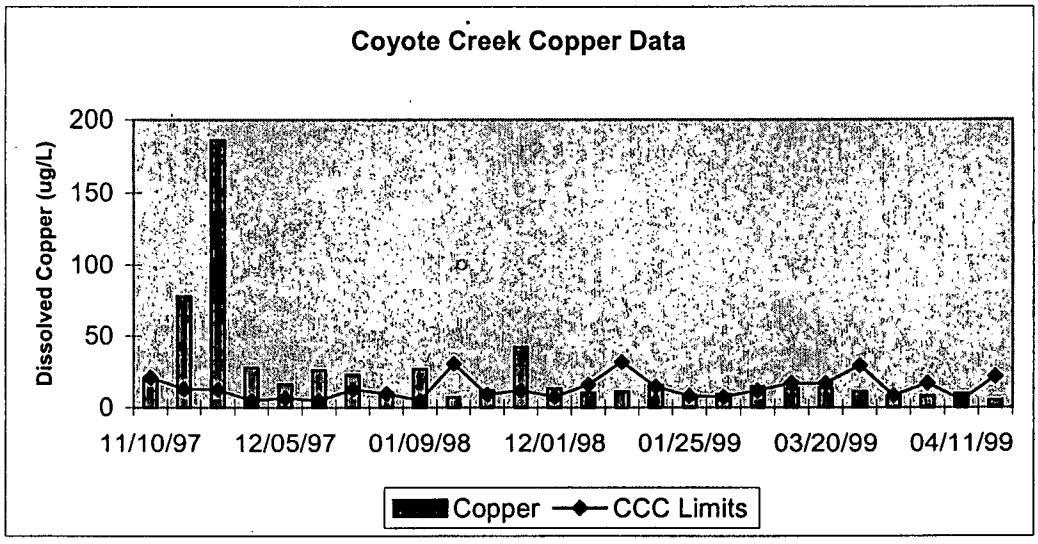
Beneficial Uses Affected

- warm freshwater habitat
- wildlife habitat
- rare/endangered species habitat

Data Assessment

In order to determine the concentration of dissolved copper that will actually be available in an aquatic environment, the water hardness must be considered. The limits calculated and presented in the chart and table below as "Limits" have had hardness values factored in to the dissolved copper concentration. In generally, the lower the hardness values the higher the dissolved cooper limit.

The chart below shows a distinct trend in the concentration of dissolved copper. The data analyzed in the charts was collected from a storm water monitoring programs. During the November and December 1997 storm events the concentration of dissolved copper shows increasing trends, and then decreases and stabilizes during the remaining events. This trend associated with an opposing trend in hardness over the same period of time; which decreases and then increases and stabilizes. The trends in hardness and dissolved copper will need to be investigated further during the next two years. Possible explanations may be related to the dilutions by increased rainfall discharge volumes, during the El Nino storms of late 1997, or related to a change in groundwater recharge and spreading volumes.



Summary Table of Dissolved Copper Data (with hardness factor)

	Dissolved Copper (µg/l)
Dates of Sampling	11/10/97- 11/10/00
Number of Samples (n)	27
Minimum Data Value	5.23
Maximum Data Value	186
Median Data Value	13.61
Arithmetic Mean Value	24.31
Standard Deviation	32.18
Percent above CCC	62%

Potential Sources

The sampling location for the dissolved copper data was the mass loading station (S13) monitored by the Los Angeles County Department of Public Works Storm Water Monitoring Program. Therefore, it is assumed that the dissolved copper loading occurs during wet weather storm events. According to their land use and critical source runoff quality results, the LACDPW did identify the possible sources of dissolved metals loading as light industrial, transportation, and retail/commercial land uses. According to LACDPW, the critical sources that fall into these land use categories are auto repair, motor freight transportation, and auto dealership.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 2000
- California Toxics Rule, August 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Coyote Creek
Dissolved Zinc

Summary of Proposed Action

Coyote Creek, a tributary of the San Gabriel River, is proposed to be listed in the 2002 305(b) water quality assessment as not supporting due to greater than 10 percent exceedance of the dissolved zinc chronic water criteria quality for protection of fresh water aquatic life. The beneficial uses that are affected by this impairment relate to aquatic life use support and include warm freshwater habitat, wildlife habitat, and rare/endangered species habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Coyote Creek	**Pollutants/Stressors**	Dissolved Zinc
Hydrologic Unit	405.15	**Source(s)**	Nonpoint Sources
Total Waterbody Size	13.45 miles	**TMDL Priority**	Analytical Unit 39
Size Affected	13.45 miles	**TMDL Start Date (Mo/Yr)**	2004
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives Not Attained

Though the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect of fresh water aquatic life. The recommended Criteria Continuous Concentration for dissolved zinc is dependent on the water hardness value. After considering the event specific hardness values, the range of acceptable concentrations was determined to be 67 - 414 µg/l. This criterion range was exceeded in 22% of the sampling events.

Beneficial Uses Affected

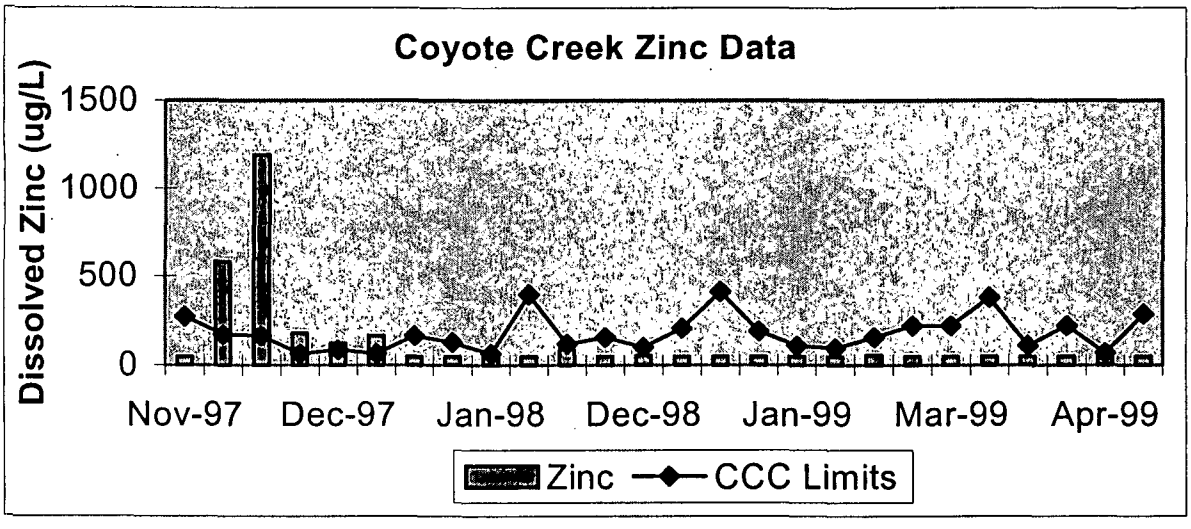
- warm freshwater habitat
- wildlife habitat

- rare/endangered species habitat

Data Assessment

In order to determine the concentration of dissolved zinc that will actually be available in an aquatic environment, the water hardness must be considered. The limits calculated and presented in the chart and table below as "Limits" have had hardness values factored in to the dissolved zinc concentration. In generally, the lower the hardness values the higher the dissolved cooper limit.

The chart below shows a distinct trend in the concentration of dissolved zinc. The data analyzed in the charts was collected from a storm water monitoring programs. During the November and December 1997 storm events the concentration of dissolved zinc shows increasing trends, and then decreases and stabilizes during the remaining events. This trend associated with an opposing trend in hardness over the same period of time; which decreases and then increases and stabilizes. The trends in hardness and dissolved zinc will need to be investigated further during the next two years. Possible explanations may be related to the dilutions by increased rainfall discharge volumes, during the El Nino storms of late 1997, or related to a change in groundwater recharge and spreading volumes.



Summary Table for Dissolved Zinc Data (with hardness factor)

	Dissolved Zinc CCC (µg/l)
Dates of Sampling	11/7/97- 11/10/00
Number of Samples (n)	27
Minimum Data Value	50
Maximum Data Value	810
Median Data Value	79
Arithmetic Mean Value	172.11
Standard Deviation	186.61
Percent above CCC	22 %

Potential Sources

The sampling location for the dissolved zinc data was the mass loading station (S14) monitored by the Los Angeles County Department of Public Works Storm Water Monitoring Program. Therefore, it is assumed that the dissolved zinc loading occurs during wet weather storm events. According to their land use and critical source runoff quality results, the LACDPW did identify possible sources of dissolved metals loading as light industrial, transportation,

and retail/commercial land uses. According to LACDPW, the critical sources that fall into these land use categories are auto repair, motor freight transportation, and auto dealership.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 2000
- California Toxics Rule, 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Reach 2
Dissolved Copper

Summary of Proposed Action

Reach 2 of the San Gabriel River is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than 10 percent exceedance of the dissolved copper chronic water quality criteria for protection of fresh water aquatic life. The beneficial uses that are affected by this impairment relate to aquatic life use support include warm freshwater habitat, wildlife habitat, and rare/endangered species habitat. [Ramona Boulevard (upstream extent) to Firestone Boulevard (downstream extent) defines Reach 2 of the river

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	San Gabriel River R2	**Pollutants/Stressors**	Dissolved Copper
Hydrologic Unit	405.15	**Source(s)**	Nonpoint Sources
Total Waterbody Size	41.5 miles	**TMDL Priority**	Analytical Unit 39
Size Affected	9.9 miles	**TMDL Start Date (Mo/Yr)**	2004
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives Not Attained

Though the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect of fresh water aquatic life. The recommended Criteria Continuous Concentration for dissolved copper is dependent on the water hardness value. After considering the event specific hardness values, the range of acceptable concentrations was determined to be 0.17 - 28 µg/l. This criterion range was exceeded in 62% of the sampling events.

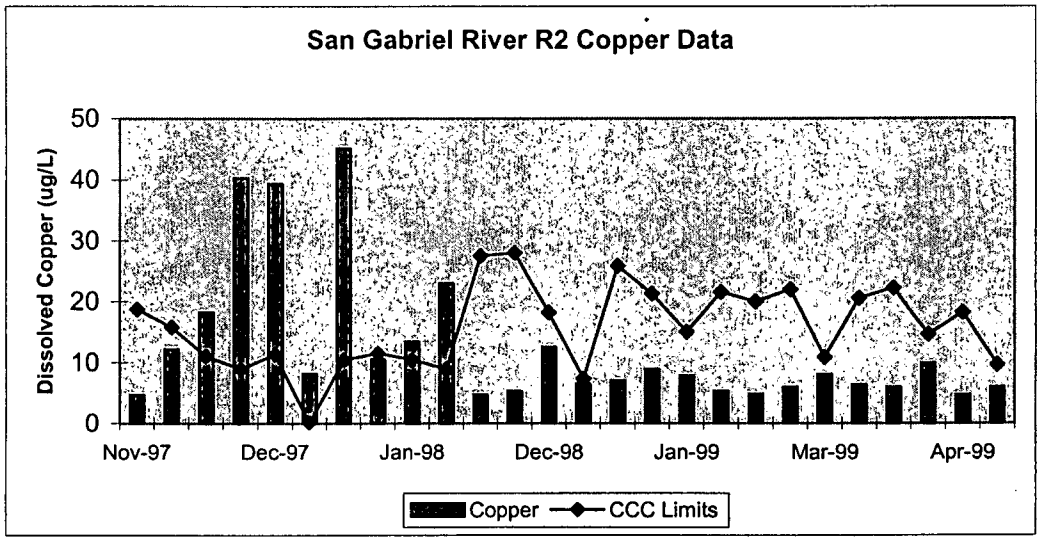
Beneficial Uses Affected

- warm freshwater habitat
- wildlife habitat
- rare/endangered species

Data Assessment

In order to determine the concentration of dissolved copper that will actually be available in an aquatic environment, the water hardness must be considered. The limits calculated and presented in the chart and table below as "Limits" have had hardness values factored in to the dissolved copper concentration. In generally, the lower the hardness values the higher the dissolved cooper limit.

The chart below shows a distinct trend in the concentration of dissolved copper. The data analyzed in the charts was collected from a storm water monitoring programs. During the November and December 1997 storm events the concentration of dissolved copper shows increasing trends, and then decreases and stabilizes during the remaining events. This trend associated with an opposing trend in hardness over the same period of time; which decreases and then increases and stabilizes. The trends in hardness and dissolved copper will need to be investigated further during the next two years. Possible explanations may be related to the dilutions by increased rainfall discharge volumes, during the El Nino storms of late 1997, or related to a change in groundwater recharge and spreading volumes. Recent data is below criteria, if this trend continues copper would be reviewed in the next listing cycle.



Summary Table of Dissolved Copper Data (with hardness factor)

	Dissolved Copper (µg/l)
Dates of Sampling	8/7/97- 8/3/00
Number of Samples (n)	30
Minimum Data Value	0.01
Maximum Data Value	47
Median Data Value	8.3
Arithmetic Mean Value	12.99
Standard Deviation	12.15
Percent above Objective	23%

Potential Sources

The sampling location for the dissolved copper data was the mass loading station (S14) monitored by the Los Angeles County Department of Public Works Storm Water Monitoring Program, and the NPDES receiving water station (R-A) monitored by the Whittier Narrows WWRP. The two data points from the Whittier Narrows Station R-A were less than 10 µg/l, and thus do not appear to be a source of the dissolved copper. Therefore, it is assumed that the dissolved copper loading occurs during wet weather storm events. According to their land use and critical source runoff quality results, the LACDPW identified the possible sources of dissolved metals loading as light industrial, transportation, and retail/commercial land uses. According to LACDPW, the critical sources that fall into these land use categories are auto repair, motor freight transportation, and auto dealership.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 2000
- California Toxics Rule, 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Reach 2
Dissolved Zinc

Summary of Proposed Action

Reach 2 of the San Gabriel River is proposed to be listed in the 2002 305(b) water quality assessment as impaired due to greater than 10 percent exceedance of the dissolved zinc recommended water criteria for protection of fresh water aquatic life. The beneficial uses that are affected by this impairment relate to aquatic life use support include warm freshwater habitat, wildlife habitat, and rare/endangered species habitat.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	San Gabriel River R2	**Pollutants/Stressors**	Dissolved Zinc
Hydrologic Unit	405.15	**Source(s)**	Nonpoint Sources
Total Waterbody Size	6.0 miles	**TMDL Priority**	Analytical Unit 39
Size Affected	6.0 miles	**TMDL Start Date (Mo/Yr)**	2004
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives No Attained

Though the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect of fresh water aquatic life. The recommended Criteria Continuous Concentration for dissolved copper is dependent on the water hardness value. After considering the event specific hardness values, the range of acceptable concentrations was determined to be 2.38 - 266 µg/l. This criterion range was exceeded in 13% of the sampling events

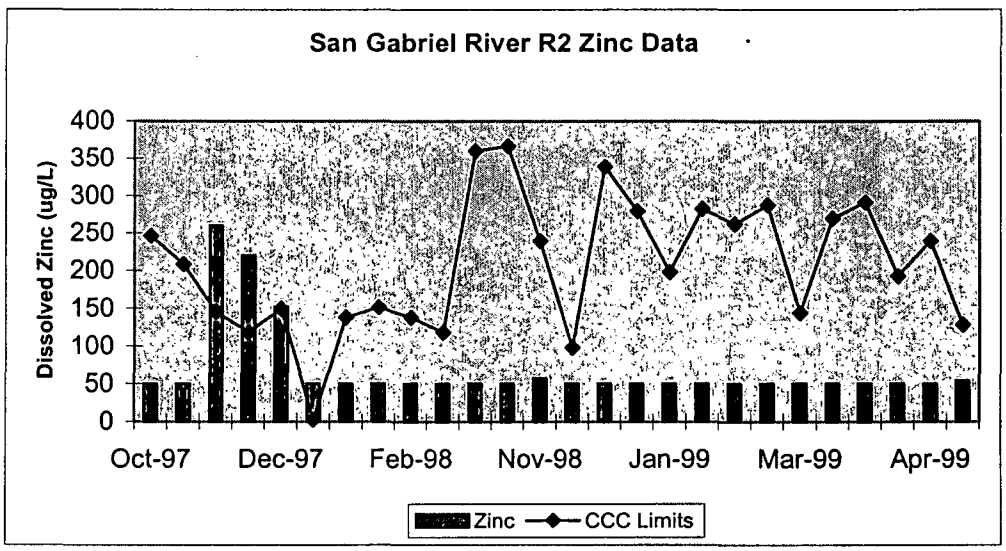
Beneficial Uses Affected

- warm freshwater habitat
- wildlife habitat
- rare/endangered species

Data Assessment

In order to determine the concentration of dissolved zinc that will actually be available in an aquatic environment, the water hardness must be considered. The limits calculated and presented in the chart and table below as "Limits" have had hardness values factored in to the dissolved zinc concentration. In generally, the lower the hardness values the higher the dissolved cooper limit.

The chart below shows a distinct trend in the concentration of dissolved zinc. The data analyzed in the charts was collected from a storm water monitoring programs. During the November and December 1997 storm events the concentration of dissolved zinc shows increasing trends, and then decreases and stabilizes during the remaining events. This trend associated with an opposing trend in hardness over the same period of time; which decreases and then increases and stabilizes. The trends in hardness and dissolved zinc will need to be investigated further during the next two years. Possible explanations may be related to the dilutions by increased rainfall discharge volumes, during the El Nino storms of late 1997, or related to a change in groundwater recharge and spreading volumes. Recent data is below criteria, if this trend continues copper would be reviewed in the next listing cycle.



Summary Table for Dissolved Zinc Data (with hardness factor)

	Dissolved Zinc CCC (µg/l)
Dates of Sampling	8/7/97- 8/3/00
Number of Samples (n)	28
Minimum Data Value	50
Maximum Data Value	260
Median Data Value	50
Arithmetic Mean Value	75.04
Standard Deviation	58.81
Number (Percent) above Objective	13 %

Potential Sources

The sampling location for the dissolved zinc data was the mass loading station (S14) monitored by the Los Angeles County Department of Public Works Storm Water Monitoring Program, and the NPDES receiving water station (R-A) monitored by the Whittier Narrows WWRP. The two data points from the Whittier Narrows were less than 10 µg/l, and thus do not appear to be a source of the dissolved zinc. Therefore, it is assumed that the dissolved zinc loading occurs during wet weather storm events. According to their land use and critical source runoff quality results, the LACDPW identified the possible sources of dissolved metals loading as light industrial, transportation, and retail/commercial land uses. According to LACDPW, the critical sources that fall into these land use categories are auto repair, motor freight transportation, and auto dealership.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 2000
- California Toxics Rule, 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – East Fork San Gabriel River

Summary of Proposed Action

The East Fork of the San Gabriel River (East Fork) is located in the Angeles National Forest, a forest under the jurisdiction of the United States Forest Service (USFS), in Los Angeles County, California. The East Fork is located about three miles north of the City of Azusa and provides a relatively pristine area for recreation. This waterbody is proposed to be delisted for trash in the 2002 303(b) water quality assessment. A Total Maximum Daily Load (TMDL) for the East Fork of the San Gabriel River was approved by the SWRCB on June 15, 2000, the State of California Office of Administrative Law on September 9,2000, and the USEPA on December 15, 2000 as meeting all applicable legal requirements. The TMDL sets a numeric target of zero (0) trash to the river. The U.S. Forest Service also has a load allocation of zero trash in the river, establishes monitoring requirements.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	East Fork San Gabriel River	**Pollutants/Stressors**	Trash
Hydrologic Unit	405.15	**Source(s)**	Nonpoint Sources
Total Waterbody Size	41.5 miles	**TMDL Priority**	Completed
Size Affected	2.95 miles	**TMDL Start Date (Mo/Yr)**	Completed
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	Completed

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channeled portion and nurseries, and small stable areas.

Water Quality Objectives Not Attained

The Water Quality Control Plan for the Los Angeles Region (Basin Plan) states that, "Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses." In addition, the plan states, "Water shall not contain suspended or settleable material in

concentrations that cause nuisance or adversely affect beneficial uses." Both of these objectives will be attained as a result of the TMDL control measures in place, which will result in protection of beneficial uses.

Data Assessment

The Los Angeles Regional Water Quality Control Board (Regional Board) determined that the level of trash in the East Fork exceeded the existing Water Quality Standards (WQS) necessary to protect the beneficial uses of the river. This determination was based upon periodic field surveys conducted over the years by Regional Board staff. Due to these Regional Board staff findings, the East Fork was listed on California's 1996 Clean Water Act (CWA) Section 303(d) list as water quality impaired due to trash.

Beneficial Uses Affected

- non-contact water recreation
- water contact recreation
- wildlife habitat
- rare/endangered species
- spawning, reproduction, and/or early development

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- East Fork San Gabriel River Trash TMDL

303 (d) Fact Sheet

Santa Clara River Watershed

11/19/01

California Regional Water Quality Control Board, Los Angeles Region

Santa Clara River Reach 3 (Freeman Diversion to Fillmore Street A) Nitrate as Nitrogen, Nitrite and Nitrate as Nitrogen, Nitrite as Nitrogen, Total Dissolved Solids

Summary of Proposed Action

Listing is proposed for Reach 3 (Freeman Diversion to Fillmore Street A) on the Santa Clara River for nutrients and their effects, and Total Dissolved Solids, which affect agriculture and municipal drinking supplies. This Reach will be listed as "Partially Supporting (Impaired)" for agriculture and "Fully Supporting but Threatened (Impaired)" for municipal drinking supplies.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Reach 3 (Below Fillmore at Santa Paula)	**Pollutants/Stressors**	Nitrate as Nitrogen, Nitrite and Nitrate as Nitrogen, Nitrite as Nitrogen, Total Dissolved Solids
Hydrologic Unit	403.21 & 403.31	**Source(s)**	non point and point sources
Total Waterbody Size		**TMDL Priority**	Nutrient: TMDL Analytical Unit 32 TDS: low
Size Affected	13.24	**TMDL Start Date (Mo/Yr)**	Nutrients: July 2001 TDS 2012
Extent of Impairment	Entire Reach	**TMDL End Date (Mo/Yr)**	Nutrients: March 2003 TDS 2014

Watershed Characteristics

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Water Quality Objectives Not Attained

Nitrate as Nitrogen: 10 mg/L, Nitrite and Nitrate as Nitrogen: 10 mg/L, Nitrite as Nitrogen: 1 mg/L, Total Dissolved Solids: 1300 mg/L

Beneficial Uses Affected

Agriculture, Municipal Drinking Supplies (designated as potential under the State Sources of Drinking Water Policy)

Data Assessment

Table 2. Summary of Nitrate as Nitrogen, Nitrite and Nitrate as Nitrogen, Nitrite as Nitrogen, Total Dissolved Solids Data (in mg/L) for Santa Clara River Reach 3 (Below Fillmore at Santa Paula)

	Nitrate as Nitrogen	Nitrite and Nitrate as Nitrogen	Nitrite as Nitrogen	Total Dissolved Solids
Dates of Sampling	1997-2000	1997-2000	1997-2000	1997-2000
Number of Samples (n)	62	45	30	189
Minimum Data Value	.1	.3	0	400
Maximum Data Value	16.8	33	1.7	1630
Median Data Value	2.42	3.7	.45	1080
Arithmetic Mean Value	3.98	5.16	.53	1081
Standard Deviation	3.65	5.68	.483	221
Percent above Objective	32	11	17	20

Potential Sources

Point and Non point sources

References

1994 Basin Plan

California Regional Water Quality Control Board, Los Angeles Region

Pole Creek/Canyon
Tributary to Santa Clara River Reach 3
(Freeman Diversion to Fillmore Street A)
Sulfate, Total Dissolved Solids

Summary of Proposed Action

Listing as "Not Supporting (Impaired)" is proposed for Pole Creek on the Santa Clara River for Sulfate and Total Dissolved Solids, which affect agricultural beneficial use.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Pole Creek/ Santa Clara River	**Pollutants/Stressors**	Sulfate, Total Dissolved Solids
Hydrologic Unit	403.31	**Source(s)**	Non point sources
Total Waterbody Size		**TMDL Priority**	Low
Size Affected	5.5	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire creek	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Water Quality Objectives Not Attained

Sulfate: 650 mg/L, Total Dissolved Solids: 1300 mg/L

Beneficial Uses Affected

Agriculture

Data Assessment

Table 2. Summary of Sulfate, TDS Data for Pole Creek/ Santa Clara River

	Sulfate (mg/L)	TDS (mg/L)
Dates of Sampling	1997-2000	1997-2000
Number of Samples (n)	12	12
Minimum Data Value	310	630
Maximum Data Value	850	1700
Median Data Value	753	1390
Arithmetic Mean Value	723	1374
Standard Deviation	135	256
Percent above Objective	97.	91.7

Potential Sources

Non Point Sources

References

1994 Basin Plan

California Regional Water Quality Control Board, Los Angeles Region

Todd Barranca-Wheeler Creek/Canyon Tributary to Santa Clara River Reach 3 (Freeman Diversion to Fillmore Street A) Sulfate, Total Dissolved Solids

Summary of Proposed Action

Listing as "Not Supporting (Impaired)" is proposed for Todd Barranca-Wheeler Creek/Canyon on the Santa Clara River for Sulfate and Total Dissolved Solids, which affect agricultural beneficial use.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Todd Barranca-Wheeler Creek/Canyon	**Pollutants/Stressors**	Sulfate, Total Dissolved Solids
Hydrologic Unit	403.21	**Source(s)**	Non point sources
Total Waterbody Size		**TMDL Priority**	Low
Size Affected	4.17	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire creek	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Water Quality Objectives Not Attained

Sulfate: 650 mg/l., Total Dissolved Solids: 1300 mg/L (Waterbody tributary to Santa Clara River Reach 3 between Freeman Diversion and Fillmore Street A with objectives in Basin Plan Table 3-8)

Beneficial Uses Affected

Agriculture

Data Assessment

Table 2. Summary of Sulfate, Total Dissolved Solids Data for Todd Barranca-Wheeler Creek/ Santa Clara River

	Sulfate (mg/L)	TDS (mg/L)
Dates of Sampling	1997-2000	1997-2000
Number of Samples (n)	12	12
Minimum Data Value	650	1410
Maximum Data Value	1380	2650
Median Data Value	875.5	1920
Arithmetic Mean Value	905	1952
Standard Deviation	176	302
Percent above Objective	91.7	100

Potential Sources

Non Point Sources

References

1994 Basin Plan

California Regional Water Quality Control Board, Los Angeles Region

Hopper Creek
Tributary to Santa Clara River Reach 4
(Fillmore Street A to Blue Cut Gauging Station)
Sulfate/Total Dissolved Solids

Summary of Proposed Action

Listing as "Not Supporting (Impaired)" is proposed for Hopper Creek, a tributary of the Santa Clara River, Reach 4, for Sulfate and Total Dissolved Solids, which affect agricultural beneficial use, due to greater than 25 percent exceedance of the objective.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Hopper Creek/Santa Clara River	**Pollutants/Stressors**	sulfate/ total dissolved solids
Hydrologic Unit	403.41	**Source(s)**	nonpoint sources, point sources
Total Waterbody Size		**TMDL Priority**	Low
Size Affected	13.65	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire reach	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Water Quality Objectives Not Attained

Sulfate: 600 mg/L; Total Dissolved Solids: 1300 mg/L (Table 3-8 in LA Regional Board Basin Plan)

Beneficial Uses Affected

Agriculture

Data Assessment

Table 2. Summary of Sulfate/TDS Data for Hopper Creek

	Sulfate (mg/L)	TDS (mg/L)
Dates of Sampling	1997-2000	1997-2000
Number of Samples (n)	12	11
Minimum Data Value	580	1220
Maximum Data Value	801	1700
Median Data Value	714	1430
Arithmetic Mean Value	717	1444
Standard Deviation	63	131
Percent above Objective	91.7	91.7

Potential Sources

Non Point sources and Point sources

References

1994 Basin Plan

California Regional Water Quality Control Board, Los Angeles Region

Piru Creek
Tributary to Santa Clara River Reach 4
(Fillmore A Street and Blue Cut Gauging Station)
pH

Summary of Proposed Action

Listing as "Partially Supporting" (impaired) is proposed for Piru Creek on the Santa Clara River for pH, which affects aquatic life beneficial use because the objective is exceeded 17 percent of the time.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Piru Creek/ Santa Clara River	**Pollutants/Stressors**	pH
Hydrologic Unit	403.41	**Source(s)**	Non point sources, Conservation discharge
Total Waterbody Size		**TMDL Priority**	Analytical Unit 32
Size Affected		**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Entire creek	**TMDL End Date (Mo/Yr)**	2003

Watershed Characteristics

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Water Quality Objectives Not Attained

pH: <6.5 or > 8.5

Beneficial Uses Affected

Aquatic Life

Data Assessment

Table 2. Summary of pH Data for Piru Creek/ Santa Clara River

Dates of Sampling	1997-2000
Number of Samples (n)	24
Minimum Data Value	7.6
Maximum Data Value	8.8
Median Data Value	8.4
Arithmetic Mean Value	8.29
Standard Deviation	.36
Percent above Objective	17

Potential Sources

Non Point Sources, Conservation Releases

References

1994 Basin Plan

California Regional Water Quality Control Board, Los Angeles Region

Sespe Creek
Tributary to Santa Clara River Reach 3
(Freeman Diversion to Fillmore Street A)
Chloride, pH

Summary of Proposed Action

Listing is proposed for Sespe Creek on the Santa Clara River for chloride and pH, which affect agricultural and aquatic life beneficial uses. The proposed listing would be "Not Supporting" for the agricultural beneficial use and "Partially Supporting" for the aquatic life beneficial use.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Sespe Creek/ Santa Clara River	**Pollutants/Stressors**	Chloride, pH
Hydrologic Unit	403.31, 403.32	**Source(s)**	non point sources
Total Waterbody Size	41.5	**TMDL Priority**	Chloride: Analytical Unit 31 pH: Analytical Unit 32
Size Affected		**TMDL Start Date (Mo/Yr)**	Chloride: 1998 pH: 2001
Extent of Impairment	Entire creek	**TMDL End Date (Mo/Yr)**	Chloride: 2002 pH: 2003

Watershed Characteristics

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Increasing loads of nitrogen and salts in supplies of ground water threaten beneficial uses including irrigation and drinking water. Other threats to water quality include increasing development in floodplain areas which has necessitated flood control measures such as channelization that results in increased runoff volumes and velocities, erosion, and loss of habitat. In many of these highly disturbed areas the exotic giant reed (*Arundo donax*) is gaining a foothold.

Many of the smaller communities in this watershed remain unsewered. In particular, in the Agua Dulce area of the upper watershed, impacts on drinking water wells from septic tanks is a major concern. The community is undertaking a wellhead protection effort, with oversight by Board staff. Development pressure, particularly in the upper watershed, threatens habitat and the water quality of the river. The effects of septic system use in the Oxnard Forebay area is also of concern.

Water Quality Objectives Not Attained

Chloride: 60 mg/L, pH <6.5 or >8.5 (Table 3-8 of the LA Regional Board Basin Plan)

Beneficial Uses Affected

Agriculture, Aquatic Life

Data Assessment

Table 2. Summary of Chloride and pH Data for Sespe Creek / Santa Clara River

	Chloride (mg/L)	pH (units)
Dates of Sampling	1997-2000	1997-2000
Number of Samples (n)	16	24
Minimum Data Value	6	7.2
Maximum Data Value	118	9
Median Data Value	34	8.3
Arithmetic Mean Value	49	8.25
Standard Deviation	35	.39
Percent above Objective	44	25

Potential Sources

Non point sources

References

Basin Plan (1994)

303 (d) Fact Sheet

Ventura County Coastal Features

11/19/01

California Regional Water Quality Control Board, Los Angeles Region

McGrath Lake
Fecal Coliform

Summary of Proposed Action

McGrath Creek, is a small, brackish waterbody located just south of the Santa Clara River. McGrath Lake is proposed to be listed in the 2002 305(b) water quality assessment as not supporting due to exceedance of the geometric mean fecal coliform objective. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**McGrath Lake**	**Pollutants/Stressors**	**Fecal Coliform**
Hydrologic Unit	403.11	**Source(s)**	Possible sources include agricultural runoff, landfill runoff, and natural sources.
Total Waterbody Size	18.7 acres	**TMDL Priority**	Analytical Unit 23
Size Affected	18.7 acres	**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Entire lake	**TMDL End Date (Mo/Yr)**	2003

Watershed Characteristics

McGrath Lake is a small brackish waterbody located just south of the Santa Clara River. The lake is located partially on State Parks land and partially on privately-owned land with oilfields in current production. A number of agricultural ditches drain into the lake. A state beach is located off the coastal side of the lake. The habitat around the lake is considered quite unique and it is utilized by a large number of over-wintering migratory birds.

Water Quality Objectives Not Attained.

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan geometric mean fecal coliform limit of 200/100 ml was exceeded.
"In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not exceed a log mean of 200/100 ml (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 ml."

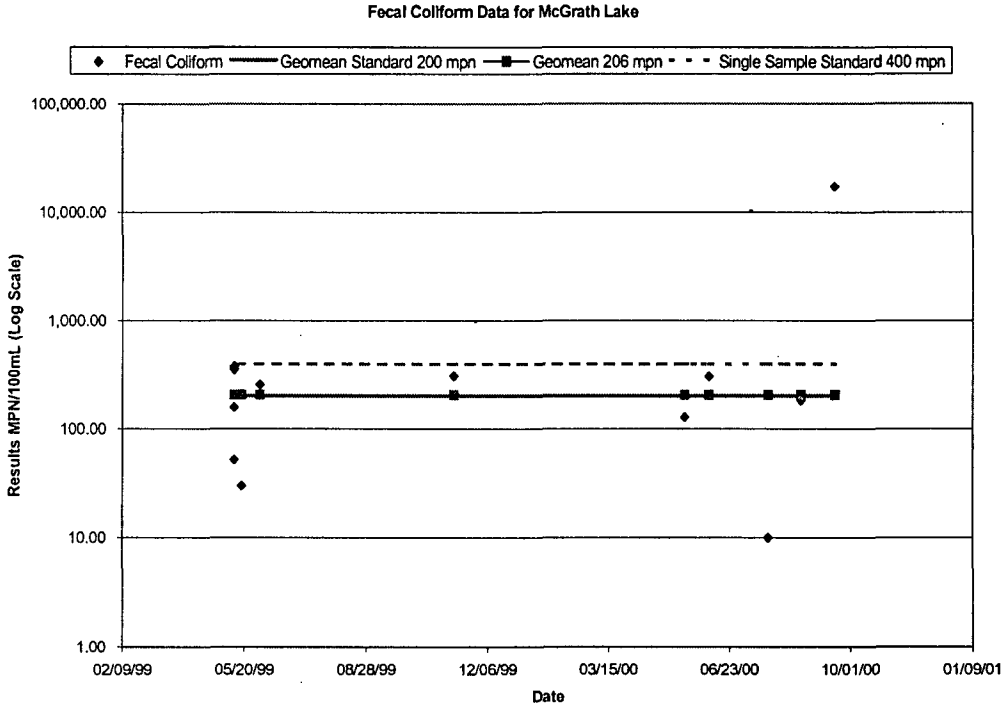
Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform Data for McGrath Lake

Dates of Sampling	5/99-9/00
Number of Samples (n)	13
Minimum Data Value	<10 MPN/mL
Maximum Data Value	17329 MPN/mL
Median Data Value	256 MPN/mL
Arithmetic Mean Value	1528 MPN/mL
Standard Deviation	4749 MPN/mL
Number (Percent) above Objective	Geomean of 206 exceeds 200, although only 1 or 8% exceed the standard of 400.



Potential Sources

Possible sources include agricultural runoff, landfill runoff, and natural sources.

References

Region 4 1994 Basin Plan
Watershed Management Initiative Chapter
Ventura County Environmental Health Division

California Regional Water Quality Control Board, Los Angeles Region

Rincon Creek
Fecal Coliform

Summary of Proposed Action

Rincon Creek is proposed to be listed in the 2002 305(b) water quality assessment as partially supporting (impaired) due to greater than 10 percent exceedance of the fecal coliform objective. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Rincon Creek**	**Pollutants/Stressors**	**Fecal Coliform**
Hydrologic Unit	315.34 402.20	**Source(s)**	Possible sources include rural and urban runoff and natural sources.
Total Waterbody Size	12 miles	**TMDL Priority**	TMDL Analytical Unit 23
Size Affected		**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	2003

Watershed Characteristics

Rincon Creek is a small coastal creek, approximately 12 miles long. It starts in the Los Padres National Forest and runs through both Santa Barbara and Ventura Counties, crossing the county line several times. Its end is adjacent to Carpinteria, a small seaside community in southern Santa Barbara County.

Water Quality Objectives Not Attained.

Water Contact Recreation (REC-1)

The Basin Plan describes REC-1 as "Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs."

The Basin Plan fecal coliform limit of 400/100 ml was exceeded with a frequency greater than 10%. "In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not exceed a log mean of 200/100 ml (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 ml."

Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

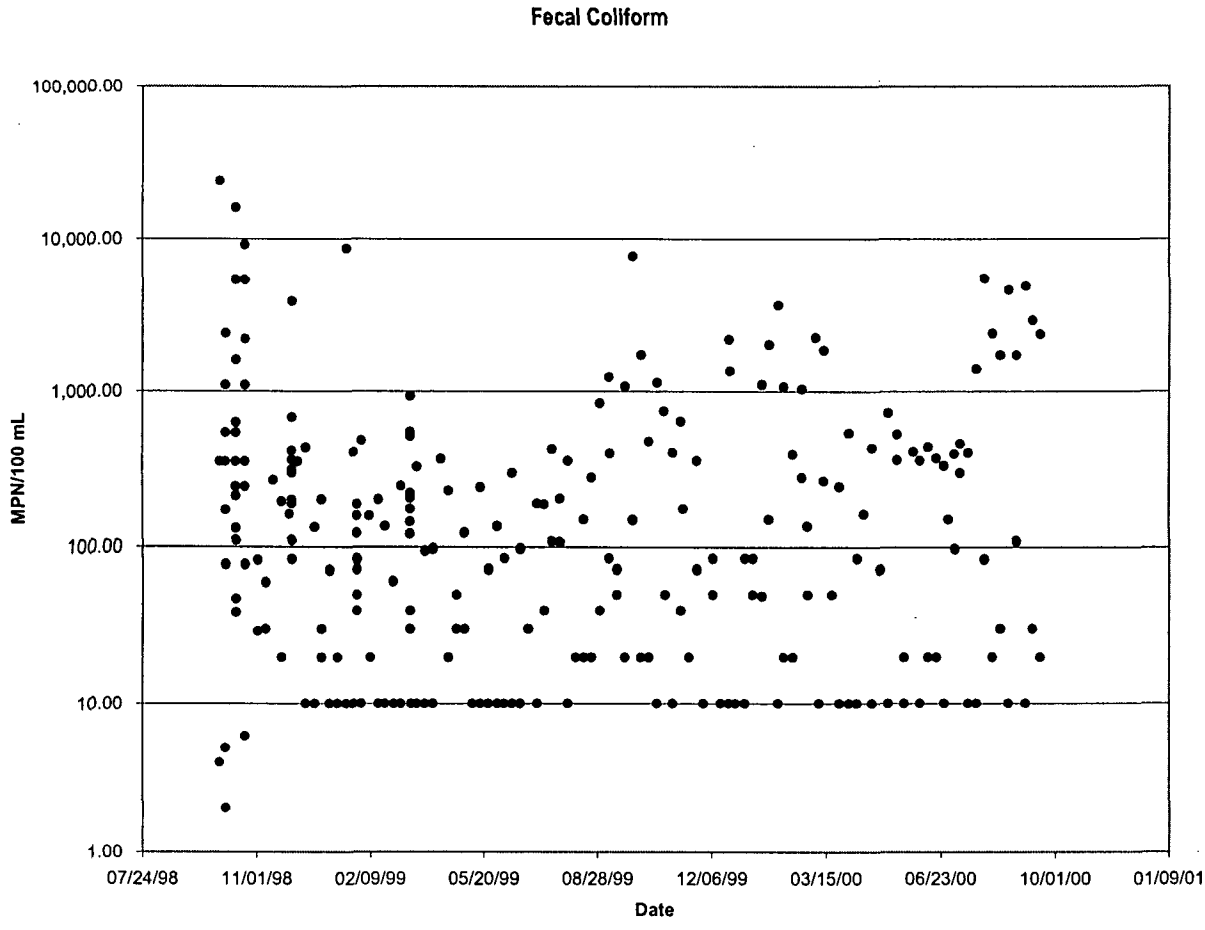


Table 2. Summary of Fecal Coliform Data for Rincon Creek

Dates of Sampling	7/98-6/99
Number of Samples (n)	259
Minimum Data Value	<10 MPN/mL
Maximum Data Value	>24000 MPN/mL
Median Data Value	120 MPN/mL
Arithmetic Mean Value	677 MPN/mL
Standard Deviation	2149 MPN/mL
Number (Percent) above Objective	61 samples or 24%

Potential Sources

Possible sources include rural and urban runoff and natural sources.

References

Region 3 Basin Plan
Region 4 Basin Plan 1994
Watershed Management Initiative Chapter (2000)
Ventura County Environmental Health Division

303 (d) Fact Sheet

Ventura River Watershed

11/19/01

California Regional Water Quality Control Board, Los Angeles Region

Ventura River Estuary
Total & Fecal Coliform

Summary of Proposed Action

The Ventura River Estuary is proposed to be listed in the 2002 305(b) water quality assessment as "Partially Supporting (Impaired)" due to exceedance of the total and fecal coliform objectives. The beneficial uses that are affected by this impairment include water contact recreation and shellfish harvesting.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ventura River Estuary	**Pollutants/Stressors**	Total and Fecal Coliform
Hydrologic Unit	402.10	**Source(s)**	Point Sources; Nonpoint Sources; Natural Sources
Total Waterbody Size		**TMDL Priority**	low
Size Affected	0.35 miles	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Estuary	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins composed of alluvial aquifers deposited along the surface water system, are highly interconnected with the surface water system and are quickly recharged or depleted, according to surface flow conditions. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters.

Precipitation varies widely in the watershed. Most occurs as rainfall during just a few storms, between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The erratic weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Water Quality Objectives Not Attained

Ocean Plan total coliform limit of 1000/100ml exceeded with a frequency greater than 20%.

Water Contact Recreation

Basin Plan fecal coliform limit of 400/100 ml exceeded with a frequency greater than 10%.

"In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not ... nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 ml."

Shellfish Harvesting

"In all waters where shellfish can be harvested for human consumption (SHELL), the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 ml, nor shall more than ten percent of the samples collected during any 30-day period exceed 230/100 ml for a five-tube decimal dilution test or 330/100 ml when a three-tube decimal dilution test is used."

Beneficial Uses Affected

Water Contact Recreation
Shellfish Harvesting

Data Assessment

Table 2. Summary of Total & Fecal Coliform Data for the Ventura River Estuary

	Total Coliform	Fecal Coliform
Dates of Sampling	1/21/98-7/26/00	1/21/98-7/26/00
Number of Samples (n)	37	37
Minimum Data Value	90	7
Maximum Data Value	24192	1722
Median Data Value	2200	153
Arithmetic Mean Value	6503	335
Standard Deviation	8894	475
Percent above Objective	65% based on 1000/100 ml 86% based on 230/100 ml 100% based on 70/100 ml	16% exceed 400/100ml objective

Potential Sources

One large land use within the Ventura River watershed is stables and horse property. Without BMPs implemented to contain horse feces from entering the river, this land use is a potential source.

References

Basin Plan (1994)
Watershed Management Initiative Chapter (2000)

California Regional Water Quality Control Board, Los Angeles Region

Ventura River Watershed – Canada Larga
Fecal Coliform

Summary of Proposed Action

Canada Larga, a tributary to the Ventura River, whose confluence is in Reach 2, is proposed to be listed in the 2002 305(b) water quality assessment as "Partially Supporting (Impaired)" due to greater than 10 percent exceedance of the fecal coliform objective. The beneficial use that is affected by this impairment is water contact recreation.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ventura River	**Pollutants/Stressors**	Fecal Coliform
Hydrologic Unit	402.10	**Source(s)**	Unknown
Total Waterbody Size		**TMDL Priority**	Low
Size Affected	8.01 miles	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire reach of Canada Larga, a tributary to the Ventura River in Reach 2	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins composed of alluvial aquifers deposited along the surface water system, are highly interconnected with the surface water system and are quickly recharged or depleted, according to surface flow conditions. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters.

Precipitation varies widely in the watershed. Most occurs as rainfall during just a few storms, between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The erratic weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Water Quality Objectives Not Attained

Water Contact Recreation

Basin Plan fecal coliform limit of 400/100 ml exceeded with a frequency greater than 10%.

"In waters designated for water contact recreation (REC-1), the fecal coliform concentration shall not ... nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 ml."

Beneficial Uses Affected

Water contact recreation

Data Assessment

Table 2. Summary of Fecal Coliform and E. coli Data for Canada Larga, a tributary to the Ventura River

	Fecal Coliform	E. coli	Combined
Dates of Sampling	10/28/99-6/21/00	1/20/01-6/22/01	10/28/99-6/22/01
Number of Samples (n)	9	10	19
Minimum Data Value	2	74	2
Maximum Data Value	900	1860	1860
Median Data Value	80	334.5	201
Arithmetic Mean Value	187	453.3	N/a
Standard Deviation	285.2	507.2	N/a
Percent above Objective	11%	30% (see note below)	21.05%

Note: E. coli is a subset of fecal coliform and is compared to the fecal coliform objective of 400/100 ml.

Potential Sources

Horse stables, land use, cattle, wildlife

References

Basin Plan (1994)
Watershed Management Initiative Chapter (2000)

California Regional Water Quality Control Board, Los Angeles Region

Ventura River Watershed – Canada Larga
Dissolved Oxygen

Summary of Proposed Action

Canada Larga, a tributary to the Ventura River, whose confluence is in Reach 2, is proposed to be listed in the 2002 305(b) water quality assessment as "Partially Supporting (Impaired)" due to greater than 10 percent exceedance of the instantaneous dissolved oxygen objective. The beneficial uses that are affected by this impairment relate to aquatic life and include warm freshwater habitat, coldwater habitat, wildlife habitat, spawning, reproduction and/or early development, and migration of aquatic organisms.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ventura River	**Pollutants/Stressors**	Low Dissolved Oxygen
Hydrologic Unit	402.10	**Source(s)**	Unknown
Total Waterbody Size		**TMDL Priority**	TMDL Analytical Unit 88
Size Affected	8.01 miles	**TMDL Start Date (Mo/Yr)**	2003
Extent of Impairment	Entire reach of Canada Larga, a tributary to the Ventura River in Reach 2	**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins composed of alluvial aquifers deposited along the surface water system, are highly interconnected with the surface water system and are quickly recharged or depleted, according to surface flow conditions. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters.

Precipitation varies widely in the watershed. Most occurs as rainfall during just a few storms, between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The erratic weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Water Quality Objectives Not Attained

The Basin Plan states, "At a minimum (see specifics below), the **mean** annual dissolved oxygen concentration of **all** waters shall be greater than 7 mg/L, and no single determination shall be less than 5.0 mg/L, except when natural conditions cause lesser concentrations."

Beneficial Uses Affected

warm freshwater habitat
coldwater habitat
wildlife habitat
spawning, reproduction, and/or early development
migration of aquatic organisms

Data Assessment

Table 2. Summary of Dissolved Oxygen Data for Canada Larga, a tributary to the Ventura River

	Dissolved Oxygen (mg/L)
Dates of Sampling	6/28/99-6/22/01
Number of Samples (n)	21
Minimum Data Value	2.4
Maximum Data Value	13.33
Median Data Value	
Arithmetic Mean Value	9.26
Standard Deviation	3.41
Percent below Objective	23.8 % of the data are below the minimum objective of 5 mg/L

Potential Sources

Unknown – may be high BOD due to exceedances of fecal coliform objective.

References

Basin Plan (1994)
Watershed Management Initiative Chapter (2000)

California Regional Water Quality Control Board, Los Angeles Region

Ventura River Watershed – San Antonio Creek
Total Nitrogen

Summary of Proposed Action

San Antonio Creek of the Ventura River, a tributary to Reach 4 of the Ventura River, is proposed to be listed in the 2002 305(b) water quality assessment as "Partially Supporting (Impaired)" due to greater than 10 percent exceedance of the nitrogen objective listed in Table 3-8 of the Basin Plan.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ventura River	**Pollutants/Stressors**	Total Nitrogen
Hydrologic Unit	402.20 and 402.32	**Source(s)**	Unknown
Total Waterbody Size		**TMDL Priority**	TMDL Analytical Unit 88
Size Affected	14.44 miles	**TMDL Start Date (Mo/Yr)**	2003
Extent of Impairment	San Antonio Creek	**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins composed of alluvial aquifers deposited along the surface water system, are highly interconnected with the surface water system and are quickly recharged or depleted, according to surface flow conditions. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters.

Precipitation varies widely in the watershed. Most occurs as rainfall during just a few storms, between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The erratic weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Water Quality Objectives Not Attained

Table 3-8 of the Basin Plan, located on page 3-12, states that the water quality objective for nitrogen for Reach 3 of the Ventura River is 5 mg/L.

Beneficial Uses Affected

N/A (objective is specific to waterbody)

Data Assessment

Table 2. Summary of Total Nitrogen Data for San Antonio Creek, a tributary to Reach 4 of the Ventura River

	Nitrogen (mg/L)
Dates of Sampling	1/21/98-5/24/00
Number of Samples (n)	23
Minimum Data Value	0.06
Maximum Data Value	14.5
Median Data Value	
Arithmetic Mean Value	3.45
Standard Deviation	3.4
Percent above Objective	17.4%

Potential Sources

Unknown.

References

Basin Plan (1994)
Watershed Management Initiative Chapter (2000)

Draft
303(d) Fact Sheets

Sediment, Tissue and Benthic Infauna Data

November 19, 2001

13-215

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Arroyo Simi R1 (Moorpark Fwy (23) to Brea Cyn)

Summary of Proposed Action

Proposed New Listings

- "Not Supporting" (Impaired) for DDT in tissue due to exceedances of Maximum Tissue Residue Levels (MTRLs).
- "Not Supporting" (Impaired) for PCB in tissue due to exceedances of MTRLs.

Proposed New Delistings

- Delist chromium in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist nickel in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist silver in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist selenium in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist zinc in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Arroyo Simi R1	**Pollutants/Stressors**	**Add**: DDT (Tissue); PCBs (Tissue) **Delete**: Cr(Tissue); Ni (Tissue); Ag (Tissue); Se (Tissue); Zn(Tissue)
Hydrologic Unit	403.62	**Source(s)**	Historical use of pesticides and lubricants
Total Waterbody Size	7.58	**TMDL Priority**	DDT& PCBs: 5 Cr, Ni, Ag, Se, Zn: 6
Size Affected		**TMDL Start Date (Mo/Yr)**	DDT & PCBs: 2002
Extent of Impairment		**TMDL End Date (Mo/Yr)**	DDT & PCBs: 2005

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30

miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (91,98): DDT, PCB (MTRL)

Table 2. Summary of Tissue Data for Arroyo Simi Reach 1, a tributary to Calleguas Creek

Dates of Sampling	6/25/98; 1991
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	
Maximum Data Value	p,p'-DDE: 38 ppb total PCB: 29.1 ppb
Median Data Value	na
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	DDE: 1 (100 %) PCB: 1 (100 %)

Potential Sources

Historical use of pesticides and lubricants.

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Ballona Creek Estuary

Summary of Proposed Action

Proposed New Delistings

- Delist aroclor in tissue because we have a listing for PCBs.

This action affects the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ballona Creek Estuary	**Pollutants/Stressors**	**Delete:** aroclor
Hydrologic Unit	405.13	**Source(s)**	
Total Waterbody Size	2.5	**TMDL Priority**	
Size Affected	2.5	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire estuary	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The most recent Water Quality Assessment Report indicates impairment in this watershed due to coliform and its effects such as shellfish harvesting advisories; trash; PCBs and pesticides of historical origin such as DDT, chlordane, and dieldrin, as well as their effects such as sediment toxicity; metals such as lead, silver, arsenic, copper, cadmium, and zinc, as well as their effects such as water column toxicity; and tributyltin.

Ballona Creek is completely channelized to the ocean except for the estuarine portion which has a soft bottom. While at one time it drained into a large wetlands complex, it now has no direct connection to the few wetlands remaining in the area although tide gates exist in the channel which connect to Ballona Wetlands. However, Ballona Creek may more often affect the nearby wetlands due to wave action moving trash, suspended material and dissolved contaminants from the ocean to the nearby Ballona Wetlands and Marina del Rey Harbor within which complex Ballona Lagoon is located.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sed chem (95, 97, 99): lead, total chlordane, PAHs and DDT.

Table 2. Summary of Tissue and Sediment Data for the Ballona Creek Estuary

Dates of Sampling	January 1993 September 1995 October/December 1997 January 1999
Number of Samples (n)	1993: 1 (sediment); 1995: 16 (sediment) 1997: 16 (sediment); 1999: 16 (sediment)
Minimum Data Value	
Maximum Data Value	Lead: 320 ppm; Total chlordane: 285 ppb p,p'-DDE: 132 ppm; Total PAH: 5239 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Lead: (@ 15 %); Chlordane: (5-10%) DDE: (@ 10%); PAH: less than 10%

Potential Sources

N/A

References

U.S. Army Corps of Engineers Maintenance Dredging Sampling Program.
Bay Protection and Toxic Cleanup Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Ballona Creek

Summary of Proposed Action

Proposed New Delistings

- Delist arsenic in tissue because there is no longer a Maximum Tissue Residue Level (MTRL) for this compound.
- Delist ChemA in tissue because the listing was based on National Academy of Sciences (NAS) guidelines, which are outdated and no longer represent valid assessment guidelines.
- Delist copper in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist lead in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist silver in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist TBT in tissue because there is no MTRL guideline for this compound.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ballona Creek	**Pollutants/Stressors**	**Delete**: As (Tissue); ChemA (Tissue); Cu (Tissue); Pb (Tissue); Ag (Tissue); TBT (Tissue)
Hydrologic Unit	405.13	**Source(s)**	
Total Waterbody Size	4.3	**TMDL Priority**	
Size Affected	4.3	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The most recent Water Quality Assessment Report indicates impairment in this watershed due to coliform and its effects such as shellfish harvesting advisories; trash; PCBs and pesticides of historical origin such as DDT, chlordane, and dieldrin, as well as their effects such as sediment toxicity; metals such as lead, silver, arsenic, copper, cadmium, and zinc, as well as their effects such as water column toxicity; and tributyltin.

Ballona Creek is completely channelized to the ocean except for the estuarine portion which has a soft bottom. While at one time it drained into a large wetlands complex, it now has no direct connection to the few wetlands remaining in the area although tide gates exist in the channel which connect to Ballona Wetlands. However, Ballona Creek may more often affect the nearby wetlands due to wave action moving trash, suspended material and dissolved contaminants from the ocean to the nearby Ballona Wetlands and Marina del Rey Harbor within which complex Ballona Lagoon is located.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

No new data.

Potential Sources

N/A

References

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Ballona Wetland

Summary of Proposed Action

Proposed New Delistings

- Delist arsenic in tissue because there is no longer a Maximum Tissue Residue Level (MTRL) for this compound.

This action affects the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ballona Wetland	**Pollutants/Stressors**	**Delete:** As (Tissue)
Hydrologic Unit	405.13	**Source(s)**	
Total Waterbody Size	151	**TMDL Priority**	
Size Affected	151	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The most recent Water Quality Assessment Report indicates impairment in this watershed due to coliform and its effects such as shellfish harvesting advisories; trash; PCBs and pesticides of historical origin such as DDT, chlordane, and dieldrin, as well as their effects such as sediment toxicity; metals such as lead, silver, arsenic, copper, cadmium, and zinc, as well as their effects such as water column toxicity; and tributyltin.

Ballona Creek is completely channelized to the ocean except for the estuarine portion which has a soft bottom. While at one time it drained into a large wetlands complex, it now has no direct connection to the few wetlands remaining in the area although tide gates exist in the channel which connect to Ballona Wetlands. However, Ballona Creek may more often affect the nearby wetlands due to wave action moving trash, suspended material and dissolved contaminants from the ocean to the nearby Ballona Wetlands and Marina del Rey Harbor within which complex Ballona Lagoon is located.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (94): metals and organics levels low

Table 2. Summary of Tissue Data for the Ballona Wetland

Dates of Sampling	6/22/94
Number of Samples (n)	1 (fish tissue)
Minimum Data Value	
Maximum Data Value	
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	

Potential Sources

N/A

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Calleguas Creek R1 (estuary to 0.5 mi s of Broome Rd) and R2 (0.5 mi s of Broome Rd to Potrero Rd)

Summary of Proposed Action

Proposed New Listings

- "Not Supporting" (Impaired) for dieldrin in tissue due to exceedances of Maximum Tissue Residual Levels (MTRLs) in Reaches 1 and 2.
- "Not Supporting" (Impaired) for HCH in tissue due to exceedances of MTRLs in Reaches 1 and 2.

Proposed New Delistings

- Delist Chem A in tissue in Reaches 1 and 2 because the listings were based on NAS guidelines, which are outdated, and individual chemicals can be listed for exceedances of MTRLs as appropriate.
- Delist dacthal in tissue in Reach 2 because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

These actions all affect the aquatic life beneficial uses. The delisting of Chem A in tissue in Reaches 1 and 2 also affects fish consumption.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek R1 and R2	**Pollutants/Stressors**	**Add:** dieldrin (Tissue) [R1 and R2]; HCH (Tissue) [R1 and R2] **Delete:** Chem A (Tissue & Fish Consumption) [R1 and R2]; Dacthal (Tissue) [R2]
Hydrologic Unit	403.11 & 403.12	**Source(s)**	Historical use of pesticides and lubricants.
Total Waterbody Size	2.2 & 2.3	**TMDL Priority**	5
Size Affected		**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life
Fish Consumption (Chem A – Reaches 1 and 2)

Data Assessment

Tissue (94, 97): chlordane, DDT, dieldrin, HCH, PCB, toxaphene (MTRL)

Table 2. Summary of Tissue} Data for Calleguas Creek Reaches 1 and 2

Dates of Sampling	6/23/94 7/16/97
Number of Samples (n)	4 (fish tissue)
Minimum Data Value	Total chlordane: 48.0 ppb p,p'-DDD: 85 ppb p,p'-DDE: 1300 ppb p,p-DDT: 32 ppb dieldrin: 15 ppb gamma-HCH: 4.8 ppb total PCB: nd toxaphene: 2300 ppb
Maximum Data Value	Total chlordane: 117.7 ppb p,p'-DDD: 300 ppb p,p'-DDE: 4100 ppb p,p-DDT: 100 ppb dieldrin: 24 ppb gamma-HCH: 7.0 ppb total PCB: 345.5 ppb toxaphene: 5400 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 4 (100 %) DDTs: 11 (92 %)

	Dieldrin: 4 (100 %) Gamma-HCH: 4 (100 %) Total PCB: 3 (75 %) Toxaphene: 4 (100%)

Potential Sources

Historical use of pesticides and lubricants.

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Colorado Lagoon

Summary of Proposed Action

Proposed New Delistings

- Delist lead in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

This action affects the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Colorado Lagoon	**Pollutants/Stressors**	**Delete:** Pb (Tissue)
Hydrologic Unit	405.12	**Source(s)**	
Total Waterbody Size	13.6	**TMDL Priority**	
Size Affected	13.6	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

Alamitos Bay is composed of the Marine Stadium, a recreation facility built in 1932 and used for boating, water skiing, and jet skiing; Long Beach Marina, which contains five smaller basins for recreational craft and a boatyard; a variety of public and private berths; and the Bay proper which includes several small canals, a bathing beach, and several popular clamming areas. A small bathing lagoon, Colorado Lagoon in Long Beach, has a tidal connection with the Bay and a small wildlife pond, Sims Pond, also has a tidal connection. The latter is heavily used by overwintering migratory birds.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

No new data.

Potential Sources

N/A

References

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Conejo Creek R1 (confl Call to Santa Rosa Rd) and R2 (Santa Rosa Rd to Thousand Oaks city limit) and R3 (Thousand Oaks city limit to Lynn Rd) and R4 (abv Lynn Rd)

Summary of Proposed Action

Proposed New Listings

- "Not Supporting" (Impaired) for chlordane in tissue due to exceedances of Maximum Tissue Residue Levels (MTRLs) in Reach 1 only.
- "Not Supporting" (Impaired) for dieldrin in tissue due to exceedances of MTRLs in Reach 1 only.
- "Not Supporting" (Impaired) for HCH in tissue due to exceedances of MTRLs in Reach 1 only.
- "Not Supporting" (Impaired) for PCBs in tissue due to exceedances of MTRLs in Reach 1 only.

Proposed New Delistings

- Delist Chem A in tissue in Reaches 1, 2, 3 and 4 because the listings were based on NAS guidelines, which are outdated, and individual chemicals can be listed for exceedances of MTRLs as appropriate.
- Delist dacthal in tissue in Reaches 1, 2, 3 and 4 because the listings were based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist silver in tissue in Reaches 1, 2 and 3 because the listings were based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist cadmium in tissue in Reaches 1, 2 and 3 because the listings were based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist chromium in tissue in Reaches 1, 2 and 3 because the listings were based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist nickel in tissue in Reaches 1, 2 and 3 because the listings were based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Conejo Creek, a tributary to Calleguas Creek	**Pollutants/Stressors**	**Add:** Chlordane (Tissue) [R1]; Dieldrin (Tissue) [R1]; HCH (Tissue) [R1]; PCB (Tissue) [R1] **Delete:** Chem A (Tissue) [R1, R2, R3, R4]; Dacthal (Tissue) [R1, R2, R3, R4]; Silver (Tissue) [R1, R2, R3]; Cadmium (Tissue) [R1, R2, R3]; Chromium (Tissue) [R1, R2, R3]; Nickel (Tissue) [R1, R2, R3];
Hydrologic Unit	403.64	**Source(s)**	Historic use of pesticides and lubricants.

Total Waterbody Size	6.51	**TMDL Priority**	Chlordane, Dieldrin, HCH, PCB, Chem A, Dacthal: 5 Silver, Cadmium, Chromium, Nickel: 6
Size Affected	Reach 1 only	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	R1	**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (98): chlordane, DDT, dieldrin, HCH, PCB, toxaphene (MTRL)

Table 2. Summary of Tissue Data for Conejo Creek, a tributary to Calleguas Creek

Dates of Sampling	6/25/98
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	Total chlordane: 39.7 ppb p,p'-DDD: 34.6 ppb p,p'-DDE: 844 ppb p,p'-DDT: 94 ppb dieldrin: 16.5 ppb gamma-HCH: 4.0 ppb total PCB: 20.3 ppb toxaphene: 819 ppb
Maximum Data Value	Total chlordane: 42.1 ppb p,p'-DDD: 33.9 ppb p,p'-DDE: 932 ppb p,p'-DDT: 100 ppb dieldrin: 17.2 ppb gamma-HCH: 4.0 ppb total PCB: 22.0 ppb toxaphene: 874 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (100 %) DDTs: 4 (67 %) Dieldrin: 2 (100 %) HCH: 2 (100 %) PCB: 2 (100 %) Toxaphene: 2 (100 %)

Potential Sources

Historical use of pesticides and lubricants.

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Coyote Creek

Summary of Proposed Action

Proposed New Delistings

- Delist silver in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

This action affects the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Coyote Creek	**Pollutants/Stressors**	**Delete:** Ag (Tissue)
Hydrologic Unit	405.15	**Source(s)**	Historical use of pesticides
Total Waterbody Size	13.45	**TMDL Priority**	
Size Affected	13.45	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming an soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channelized portion and nurseries, small stable areas, and a large poultry farm are located in these areas.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (97): metals and organics were low, except for gamma-HCH, which exceeded MTRL.

Table 2. Summary of Tissue Data for Coyote Creek

Dates of Sampling	7/18/97
Number of Samples (n)	1 (fish tissue)
Minimum Data Value	
Maximum Data Value	Gamma-HCH: 6.5 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	

Potential Sources

Historical use of pesticides.

References

Toxic Substances Monitoring Program database.

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Dominguez Channel estuary (to Vermont)

Summary of Proposed Action

New Proposed Listings

- "Not Supporting" (Impaired) for sediment toxicity due to exceedances in toxicity tests.
- "Not Supporting" (Impaired) for copper in sediment due to exceedances of Effects Range-Median (ERM) or Probable Effects Level (PEL).
- "Not Supporting" (Impaired) for chlordane in sediment due to exceedances of ERM or PEL.
- "Not Supporting" (Impaired) for PCBs in sediment due to exceedances of ERM or PEL.

These actions all affect the aquatic life beneficial uses and some may affect fish consumption.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Dominguez Channel Estuary and Dominguez Channel	**Pollutants/Stressors**	See Above
Hydrologic Unit	405.12	**Source(s)**	Historical use of pesticides and lubricants for DDT, chlordane, and PCBs. Stormwater runoff, aerial deposition and historical discharges for copper.
Total Waterbody Size	8.4 and 9	**TMDL Priority**	Copper: 75 Others: 73
Size Affected		**TMDL Start Date (Mo/Yr)**	Copper: 2004 Others: 2005
Extent of Impairment	Estuary (not DC above Vermont)	**TMDL End Date (Mo/Yr)**	Copper: 2007 Others: 2008

Watershed Characteristics

The Los Angeles and Long Beach Harbors are located in the southern portion of the Los Angeles Basin. Along the northern portion of San Pedro Bay is a natural embayment formed by a westerly extension of the coastline which contains both harbors, with the Palos Verdes Hills the dominant onshore feature. Historically, the area consisted of marshes and mudflats with a large marshy area, Dominguez Slough, to the north, and flow from the Los Angeles River entering where Dominguez Channel now drains. Near the end of last century and during the beginning of this one, channels were dredged, marshes were filled, wharves were constructed, the Los Angeles River was diverted, and a breakwater was constructed in order to allow deep draft ships to be directly offloaded and products be swiftly moved. The Dominguez Slough

was completely channelized and became the drainage endpoint for runoff from a highly industrialized area. Eventually, the greater San Pedro Bay was enclosed by two more breakwaters and deep entrance channels were dredged to allow for entry of ships with need of 70 feet of clearance. The LA/LB Harbor complex together is now one of the largest ports in the country.

Both harbors are considered to be one oceanographic unit. Despite its industrial nature, contaminant sources, and low flushing ability, the inner harbor area supports fairly diverse fish and benthic populations and provides a protected nursery area for juvenile fish. The California least tern, an endangered species, nests in one part of the harbor complex.

Similar to LA Inner Harbor in many respects, LB Inner Harbor is dissimilar to the other Port in the higher number of privately-owned waterfront parcels which the Port has recently been in the process of the buying up and converting to Port-related uses, generally container terminals. Also, basins and slips in LB Inner Harbor are somewhat more separated from each other than in LA Inner Harbor which may possibly prevent contamination from spreading easily.

The outer part of both harbors (the greater San Pedro Bay) has been less disrupted and supports a great diversity of marine life. It is also open to the ocean at its eastern end and receives much greater flushing than the inner harbors.

Water Quality Objectives Not Attained

MTRL
ERM/PEL
Relative benthic index
Sediment toxicity

Beneficial Uses Affected

Aquatic Life
Fish Consumption

Data Assessment

Sediment toxicity (96)
Benthic community degradation (96)
Sediment Chemistry (96): copper, chlordane, DDT, PCB

Table 2. Summary of Sediment Data for Dominguez Channel Estuary and Dominguez Channel

Dates of Sampling	7/18/96
Number of Samples (n)	1 (sediment)
Minimum Data Value	
Maximum Data Value	Copper: 144 ppm Total chlordane: 32.4 ppb Total DDT: 204.5 ppb Total PCB: 361.5 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Sediment toxicity: 1 (100 %) Benthos: 1 (100 %) Copper: 1 (100 %) Total chlordane: 1 (100 %) Total DDT: 1 (100 %) Total PCB: 1 (100 %)

Potential Sources

Historical use of pesticides and lubricants for DDT, chlordane and PCBs. Stormwater runoff, aerial deposition and historical discharges for copper.

References

State Mussel Watch Program database
Bay Protection and Toxic Cleanup Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Duck Pond Ag Drain/Mugu Drain/Oxnard Drain #2

Summary of Proposed Action

New Proposed Listings

- "Not Supporting" (Impaired) for dieldrin in tissue due to exceedances of Maximum Tissue Residue Levels (MTRLs).
- "Not Supporting" (Impaired) for HCB in tissue due to exceedances of MTRLs.

New Proposed Delistings

- Delist ChemA in tissue for aquatic life because this listing was based on NAS guidelines, which are outdated, and individual chemicals can be listed for exceedances MTRLs as appropriate.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Duck Pong Ag Drain / Mugu Drain / Oxnard Drain 2	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Historical use of pesticides
Total Waterbody Size	13.5	**TMDL Priority**	5
Size Affected		**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area

and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (94): chlordane, DDT, dieldrin, HCB, toxaphene (MTRL)

Table 2. Summary of Tissue Data for Duck Pong Ag Drain / Mugu Drain / Oxnard Drain #2 in Calleguas Creek Watershed

Dates of Sampling	6/21/94
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	Chlordane: 34.7 ppb p,p'-DDD: 88 ppb p,p'-DDE: 1100 ppb p,p'-DDT: 80 ppb Dieldrin: nd HCB: nd Toxaphene: 530 ppb
Maximum Data Value	Chlordane: 128 ppb p,p'-DDD: 260 ppb p,p'-DDE: 1200 ppb p,p'-DDT: 160 ppb Dieldrin: 19 ppb HCB: 15 ppb Toxaphene: 2000 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (100 %) p,p'-DDD: 2 (100 %) p,p'-DDE: 2 (100 %) p,p'-DDT: 2 (100 %) Dieldrin: 1 (50 %) HCB: 1 (50 %) Toxaphene: 2 (100 %)

Potential Sources

Historical use of pesticides.

References

Toxics Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Harbor Park Lake

Summary of Proposed Action

Proposed New Delistings

- Delist ChemA in tissue because the listing was based on National Academy of Sciences (NAS) guidelines, which are outdated and no longer represent valid assessment guidelines.

This action affects the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Harbor Park Lake	**Pollutants/Stressors**	**Delete**: ChemA (Tissue)
Hydrologic Unit	405.12	**Source(s)**	Historical use of pesticides and lubricants.
Total Waterbody Size	45.2	**TMDL Priority**	
Size Affected	45.2	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire lake.	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The Los Angeles and Long Beach Harbors are located in the southern portion of the Los Angeles Basin. Along the northern portion of San Pedro Bay is a natural embayment formed by a westerly extension of the coastline which contains both harbors, with the Palos Verdes Hills the dominant onshore feature. Historically, the area consisted of marshes and mudflats with a large marshy area, Dominguez Slough, to the north, and flow from the Los Angeles River entering where Dominguez Channel now drains. Near the end of last century and during the beginning of this one, channels were dredged, marshes were filled, wharves were constructed, the Los Angeles River was diverted, and a breakwater was constructed in order to allow deep draft ships to be directly offloaded and products be swiftly moved. The Dominguez Slough was completely channelized and became the drainage endpoint for runoff from a highly industrialized area. Eventually, the greater San Pedro Bay was enclosed by two more breakwaters and deep entrance channels were dredged to allow for entry of ships with need of 70 feet of clearance. The LA/LB Harbor complex together is now one of the largest ports in the country.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life, Fish Consumption

Data Assessment

Tissue (94, 97): chlordane, DDT, dieldrin, PCB

Table 2. Summary of Tissue Data for Harbor Park Lake.

Dates of Sampling	6/14/94 7/15/97
Number of Samples (n)	4 (fish tissue)
Minimum Data Value	Total chlordane: 6.3 ppb; p,p'-DDD: nd p,p'-DDE: 14 ppb; p,p'-DDT: nd Dieldrin: nd; Total PCB: nd
Maximum Data Value	Total chlordane: 276.9 ppb; p,p'-DDD: 96 ppb p,p'-DDE: 220 ppb; p,p'-DDT: nd Dieldrin: 7.2 ppb; Total PCB: 444 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Total chlordane: 3 (75 %); DDTs: 4 (33 %) Dieldrin: 2 (50 %); Total PCB: 2 (50 %)

Potential Sources

Historical use of pesticides and lubricants.

References

Toxic Substances Monitoring Program database.

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
LA Harbor-Consolidated Slip

Summary of Proposed Action

Proposed New Listings

- "Not Supporting" (Impaired) for arsenic in sediments due to exceedances of Effects Range-Median (ERM) and/or Probable Effects Level (PEL).
- "Not Supporting" (Impaired) for cadmium in sediments due to exceedances of ERM and/or PEL.
- "Not Supporting" (Impaired) for copper in sediments due to exceedances of ERM and/or PEL.
- "Not Supporting" (Impaired) for mercury in sediments due to exceedances of ERM and/or PEL.
- "Not Supporting" (Impaired) for nickel in sediments due to exceedances of ERM and/or PEL.
- "Not Supporting" (Impaired) for dieldrin in tissue due to exceedances of Maximum Tissue Residual Levels (MTRLs).
- "Not Supporting" (Impaired) for toxaphene in tissue due to exceedances of MTRLs.

Proposed New Delistings

- Delist TBT in tissue because the listing was based on exceeding background levels rather than valid assessment guidelines. Delisting applies to LA Harbor Consolidated Slip, Fish Harbor, Inner Breakwater and Main Channel.
- Delist zinc in tissue because the listing was based on exceeding background levels rather than valid assessment guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Consolidated Slip – LA Harbor	**Pollutants/Stressors**	See Above
Hydrologic Unit		**Source(s)**	Historical use for pesticides and lubricants. Stormwater runoff, aerial deposition, and historical discharges for metals.
Total Waterbody Size		**TMDL Priority**	Dieldrin & toxaphene: 73 TBT: 79 Others: 75
Size Affected		**TMDL Start Date (Mo/Yr)**	Dieldrin & Toxaphene: 2005 Others: 2004
Extent of Impairment		**TMDL End Date (Mo/Yr)**	Dieldrin & Toxaphene: 2008

			Others: 2007

Watershed Characteristics

The Los Angeles and Long Beach Harbors are located in the southern portion of the Los Angeles Basin. Along the northern portion of San Pedro Bay is a natural embayment formed by a westerly extension of the coastline which contains both harbors, with the Palos Verdes Hills the dominant onshore feature. Historically, the area consisted of marshes and mudflats with a large marshy area, Dominguez Slough, to the north, and flow from the Los Angeles River entering where Dominguez Channel now drains. Near the end of last century and during the beginning of this one, channels were dredged, marshes were filled, wharves were constructed, the Los Angeles River was diverted, and a breakwater was constructed in order to allow deep draft ships to be directly offloaded and products be swiftly moved. The Dominguez Slough was completely channelized and became the drainage endpoint for runoff from a highly industrialized area. Eventually, the greater San Pedro Bay was enclosed by two more breakwaters and deep entrance channels were dredged to allow for entry of ships with need of 70 feet of clearance. The LA/LB Harbor complex together is now one of the largest ports in the country.

Both harbors are considered to be one oceanographic unit. Despite its industrial nature, contaminant sources, and low flushing ability, the inner harbor area supports fairly diverse fish and benthic populations and provides a protected nursery area for juvenile fish. The California least tern, an endangered species, nests in one part of the harbor complex.

Similar to LA Inner Harbor in many respects, LB Inner Harbor is dissimilar to the other Port in the higher number of privately-owned waterfront parcels which the Port has recently been in the process of the buying up and converting to Port-related uses, generally container terminals. Also, basins and slips in LB Inner Harbor are somewhat more separated from each other than in LA Inner Harbor which may possibly prevent contamination from spreading easily.

The outer part of both harbors (the greater San Pedro Bay) has been less disrupted and supports a great diversity of marine life. It is also open to the ocean at its eastern end and receives much greater flushing than the inner harbors.

Water Quality Objectives Not Attained

MTRLs
ERM/PEL
Relative benthic index

Beneficial Uses Affected

Aquatic Life
Fish Consumption

Data Assessment

Tissue (93): chlordane, DDT, PCB, toxaphene
Tissue (94): DDT, PCB
Tissue (95): dieldrin, PCB, toxaphene
Tissue (96): DDT, PCB
Tissue (98): dieldrin, DDT, PCB
Sediment toxicity (92, 94, 96)
Benthic community degradation (96)
Sediment Chemistry (92): copper, lead, mercury, nickel, zinc, chlordane, DDT, PCB
Sediment Chemistry (93): chlordane, DDT, PCB
Sediment Chemistry (94): copper, mercury, nickel, zinc, chlordane, DDT, PCB

Sediment Chemistry (96): cadmium, copper, chromium, lead, mercury, silver, zinc, chlordane, DDT, PCB

Table 2. Summary of Tissue and Sediment Data for Consolidated Slip, LA Harbor

Dates of Sampling	7/31/92 11/9/93 2/1/94 7/17/96
Number of Samples (n)	1992: 2 (sediment) 1993: 1 (sediment) 1994: 3 (sediment) 1996: 14 (sediment) 6 (tissue) 19 (sediment toxicity) 8 (benthic infauna)
Minimum Data Value	Copper (sed): 58 ppm Chromium (sed): 47 ppm Cadmium (sed): 1.0 ppm Lead (sed): 40 ppb Mercury (sed): 0.115 ppm Nickel (sed): 23 ppm Zinc (sed): 140 ppm Total chlordane (sed): nd Total DDT (sed): 63.3 ppb Total PCB (sed): 91.8 ppb Total chlordane (tis): 5.0 ppb Dieldrin (tis): 0.6 ppb p,p'-DDD (tis): 5.9 ppb p,p'-DDE (tis): 24.0 ppb p,p'-DDT (tis): 1.9 ppb Total PCB (tis): 48.3 ppb
Maximum Data Value	Copper (sed): 1740 ppm Chromium (sed): 552 ppm Cadmium (sed): 14.5 ppm Lead (sed): 1590 ppb Mercury (sed): 3.28 ppm Nickel (sed): 53.6 ppm Zinc (sed): 1010 ppm Total chlordane (sed): 246 ppb Total DDT (sed): 1317 ppb Total PCB (sed): 2118 ppb Total chlordane (tis): 8.8 ppb Dieldrin (tis): 1.5 ppb p,p'-DDD (tis): 9.8 ppb p,p'-DDE (tis): 48.0 ppb p,p'-DDT (tis): 15.0 ppb Total PCB (tis): 150.0 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Sediment toxicity: 16 (84 %) Benthos: 3 (38 %) Copper (sed): 19 (95 %) Chromium (sed): 4 (20 %) Cadmium (sed): 6 (30 %)

	Lead (sed): 13 (65 %) Mercury (sed): 5 (25 %) Nickel (sed): 5 (25 %) Zinc (sed): 18 (90 %) Total chlordane (sed): 17 (85 %) Total DDT (sed): 20 (100 %) Total PCB (sed): 20 (100 %) Total chlordane (tis): 1 (17 %) Dieldrin (tis): 3 (50 %) DDTs (tis): 4 (22 %) Total PCB (tis): 6 (100 %)

Potential Sources

Historical use for pesticides and lubricants. Stormwater runoff, aerial deposition and historical discharges for metals.

References

State Mussel Watch Program database
Bay Protection and Toxic Cleanup Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Lake Calabasas

Summary of Proposed Action

Proposed New Delistings

- Delist copper in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist zinc in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Lake Calabasas	**Pollutants/Stressors**	**Delete:** Cu (Tissue); Zn (Tissue)
Hydrologic Unit	405.21	**Source(s)**	
Total Waterbody Size	28	**TMDL Priority**	
Size Affected	28	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire lake	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

A number of lakes are part of the Los Angeles River watershed, including Peck Road Park, Belvedere Park, Hollenbeck Park, Lincoln Park, and Echo Park Lakes, as well as Lake Calabasas. These lakes are heavily used for recreational purposes.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

No new data.

Potential Sources

N/A

References

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Lake Lindero

Summary of Proposed Action

Proposed New Delistings

- Delist selenium in tissue because the listing was based on Median International Standards (MIS) for trace elements, which are outdated and no longer represent valid assessment guidelines.

This action affects the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Lake Lindero	**Pollutants/Stressors**	**Delete:** Se (Tissue)
Hydrologic Unit	404.23	**Source(s)**	Historical use of pesticides
Total Waterbody Size	13.56	**TMDL Priority**	
Size Affected	13.56	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire lake	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The Santa Monica Bay Watershed Management Area (WMA), which encompasses an area of 414 square miles, is quite diverse. Its borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. South of Ballona Creek the natural drainage area is a narrow strip of wetlands between Playa del Rey and Palos Verdes. The WMA includes several watersheds the two largest being Malibu Creek to the north and Ballona Creek to the south. While the Malibu Creek area contains mostly undeveloped mountain areas, large acreage residential properties and many natural stream reaches; Ballona Creek is predominantly channelized, and highly developed with both residential and commercial properties.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (98): chlordane, toxaphene

Table 2. Summary of Tissue Data for Lake Lindero

Dates of Sampling	6/24/98
Number of Samples (n)	1 (fish tissue)
Minimum Data Value	
Maximum Data Value	Total chlordane: 15.1 ppb Toxaphene: 26.2 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 1 (100 %) Toxaphene: 1 (100 %)

Potential Sources

Historical use of pesticides.

References

Toxic Substances Monitoring Program database.

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Los Angeles River Estuary (Queensway Bay)

Summary of Proposed Action

Proposed New Listings

- "Not Supporting" (Impaired) for lead in sediments due to exceedances of sediment quality guidelines (Effects Range Median and/or Probable Effects Level).
- "Not Supporting" (Impaired) for chlordane in sediments due to exceedances of sediment quality guidelines (Effects Range Median and/or Probable Effects Level).
- "Not Supporting" (Impaired) for DDT in sediments due to exceedances of sediment quality guidelines (Effects Range Median and/or Probable Effects Level).
- "Not Supporting" (Impaired) for PCB in sediments due to exceedances of sediment quality guidelines (Effects Range Median and/or Probable Effects Level).

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Los Angeles River Estuary (Queensway Bay)	**Pollutants/Stressors**	**Add:** Pb (Sediment); chlordane (Sediment); DDT (Sediment); PCB (Sediment)
Hydrologic Unit	405.12	**Source(s)**	Historical use of pesticides and lubricants
Total Waterbody Size	3.71	**TMDL Priority**	Unit 73 (chlordane, DDT, PCB) Unit 75 (lead)
Size Affected	3.71	**TMDL Start Date (Mo/Yr)**	2004 (lead) 2005 (chlordane, DDT, PCB)
Extent of Impairment	Entire estuary	**TMDL End Date (Mo/Yr)**	2005 (lead) 2006 (chlordane, DDT, PCB)

Watershed Characteristics

The LA River tidal prism/estuary begins in Long Beach at Willow Street and runs approximately three miles before joining with Queensway Bay located between the Port of Long Beach and the city of Long Beach. The channel has a soft bottom in this reach with concrete-lined sides. Queensway Bay is heavily water recreation-oriented; however, major pollutant inputs are likely more related to flows from the LA River which carries the largest storm flow of any river in southern California.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sediment (92, 94): chlordane, DDT
Sediment (97, 98): lead, PCB

Table 2. Summary of Sediment Data for Los Angeles River Estuary (Queensway Bay)

Dates of Sampling	9/2/92 2/1/94 January 1997 July 1998
Number of Samples (n)	1992: 6 samples (sediment); 1994: 3 samples (sediment) 1997: 13 samples (sediment); 1998: 5 samples (sediment)
Minimum Data Value	Lead: 35 ppb; Total PCB: 29 ppb Total chlordane: 12.3 ppb; Total DDT: 16.1 ppb
Maximum Data Value	Lead: 213 ppb; Total PCB: 397 ppb Total chlordane: 24.9 ppb; Total DDT: 75.8 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Lead: 8 (44 %); Total PCB: 2 (15 %) Total chlordane: 9 (100 %); Total DDT: 6 (67 %)

Potential Sources

Historical use of pesticides and lubricants.

References

Bay Protection and Toxic Cleanup Program database.
U.S. Army Corps of Engineers EIS for Maintenance Dredging of Los Angeles River Estuary.

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Los Angeles River R5 (within Sepulveda Basin)

Summary of Proposed Action

Proposed New Delistings

- Delist ChemA in tissue because the listing was based on National Academy of Sciences (NAS) guidelines which are outdated and no longer represent valid assessment guidelines.
- Delist chlorpyrifos in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Los Angeles River R5	**Pollutants/Stressors**	**Delete**: ChemA (Tissue); Chlorpyrifos (Tissue)
Hydrologic Unit	405.21	**Source(s)**	
Total Waterbody Size	1.93	**TMDL Priority**	
Size Affected	1.93	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire reach.	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The Los Angeles (LA) River watershed is one of the largest in the Region. It is also one of the most diverse in terms of land use patterns. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach.

Major tributaries to the river in the San Fernando Valley are the Pacoima Wash, Tujunga Wash (both drain portions of the Angeles National Forest in the San Gabriel Mountains), Burbank Western Channel and Verdugo Wash (both drain the Verdugo Mountains). Due to major flood events at the beginning of the century, by the 1950's most of the river was lined with concrete. In the San Fernando Valley, there is a section of the river with a soft bottom at the Sepulveda Flood Control Basin. The Basin is a 2,150-acre open space upstream of the Sepulveda Dam designed to collect flood waters during major storms. Because the area is periodically inundated, it remains in a semi-natural condition and supports a variety of low-intensity uses as well as supplying habitat. At the eastern end of the San Fernando Valley, the river bends around the Hollywood Hills and flows through Griffith and Elysian Parks, in an area known as the Glendale Narrows. Since the water table was too high to allow laying of concrete, the river in this area has a rocky, unlined bottom with concrete-lined or rip-rap sides. This stretch of the river is fed by natural

springs and supports stands of willows, sycamores, and cottonwoods. The many trails and paths along the river in this area are heavily used by the public for hiking, horseback riding, and bird watching.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

No new data.

Potential Sources

N/A

References

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Los Cerritos Channel

Summary of Proposed Action

New Proposed Listings

- "Not Supporting" (Impaired) for sediment toxicity due to exceedances in toxicity tests.
- "Not Supporting" (Impaired) for chordane in sediments due to exceedances of Effects Range-Median (ERM) and/or Probable Effects Level (PEL).

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Los Cerritos Channel	**Pollutants/Stressors**	See Above
Hydrologic Unit		**Source(s)**	unknown
Total Waterbody Size	16	**TMDL Priority**	Low
Size Affected		**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

The Los Cerritos Channel is concrete-lined above the tidal prism and drains a relatively small area of east Long Beach, albeit a densely urbanized one. The channel's tidal prism starts at Anaheim Road and connects with Alamitos Bay through the Marine Stadium; the wetlands connects to the Channel a short distance from the lower end of the Channel. The wetlands, and portion of the channel near the wetlands, is an overwintering site for a great diversity of birds (up to 50 species) despite its small size. An endangered bird species, the Belding's Savannah Sparrow, may nest there and an area adjacent to the wetlands is a historic least tern colony site. One small marina is located in the channel which is also used by rowing teams and is a popular fishing area.

Alamitos Bay: Alamitos Bay is composed of the Marine Stadium, a recreation facility built in 1932 and used for boating, water skiing, and jet skiing; Long Beach Marina, which contains five smaller basins for recreational craft and a boatyard; a variety of public and private berths; and the Bay proper which includes several small canals, a bathing beach, and several popular clamming areas. A small bathing lagoon, Colorado Lagoon in Long Beach, has a tidal connection with the Bay and a small wildlife pond, Sims Pond, also has a tidal connection. The latter is heavily used by overwintering migratory birds. Water Quality Objectives Not Attained
ERM/PEL
Sediment Toxicity

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sediment chemistry (94): chlordane
Sediment toxicity (93, 94)

Table 2. Summary of Sediment Data for Los Cerritos Channel

Dates of Sampling	1/14/93 2/16/94
Number of Samples (n)	4 (sediment)
Minimum Data Value	Total chlordane: nd
Maximum Data Value	Total chlordane: 10.94 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 3 (75 %) Sediment toxicity: 3 (75 %)

Potential Sources

References

Bay Protection and Toxic Cleanup Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Malibou Lake

Summary of Proposed Action

Proposed New Delistings

- Delist copper in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist chlordane in tissue since the listing was based on a level which is now below the Maximum Tissue Residue Level (MTRL) and the compound was not detected in 1997.
- Delist PCB in tissue since these were not detected in 1992 or 1997.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Malibou Lake	**Pollutants/Stressors**	**Delete:** Cu (Tissue); chlordane (Tissue); PCB (Tissue)
Hydrologic Unit	404.24	**Source(s)**	
Total Waterbody Size	69	**TMDL Priority**	
Size Affected	69	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire lake	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The Santa Monica Bay Watershed Management Area (WMA), which encompasses an area of 414 square miles, is quite diverse. Its borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. South of Ballona Creek the natural drainage area is a narrow strip of wetlands between Playa del Rey and Palos Verdes. The WMA includes several watersheds the two largest being Malibu Creek to the north and Ballona Creek to the south. While the Malibu Creek area contains mostly undeveloped mountain areas, large acreage residential properties and many natural stream reaches; Ballona Creek is predominantly channelized, and highly developed with both residential and commercial properties.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (97): metals and organics levels low.

Table 2. Summary of Tissue Data for Malibou Lake

Dates of Sampling	7/17/97
Number of Samples (n)	1 (fish tissue)
Minimum Data Value	
Maximum Data Value	
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	

Potential Sources

N/A

References

Toxic Substances Monitoring Program database.

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Marina del Rey Harbor-Back Basins

Summary of Proposed Action

Proposed New Listings

- List PCBs in sediment due to exceedance of the Effects Range-Median (ERM) and/or Probable Effects Level (PEL) guidelines.

Proposed New Delistings

- Delist benthic infaunal community degradation since the benthic infauna only is moderately degraded based on the benthic community index developed for the Bay Protection and Toxic Cleanup Program.
- Delist TBT in tissue since the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist zinc in tissue since the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist copper in tissue since the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist lead in tissue since the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist DDT in sediment since sediment concentrations have dropped below sediment quality guidelines (Effects Range Median and/or Probable Effects Levels) over the past few years.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Marina del Rey Harbor-Back Basins	**Pollutants/Stressors**	**Add:** PCBs (sediment) **Delete**: TBT (Tissue); Zn (Tissue); Cu (Tissue); Pb (Tissue); DDT (Sediment); benthic infaunal community degradation
Hydrologic Unit	405.13	**Source(s)**	Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from urban areas
Total Waterbody Size	413	**TMDL Priority**	Analytical Unit 54
Size Affected	121	**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment	Basins D, E, F	**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

The Santa Monica Bay Watershed Management Area (WMA), which encompasses an area of 414 square miles, is quite diverse. Its borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. South of Ballona Creek the natural drainage area is a narrow strip of wetlands between Playa del Rey and Palos Verdes. The WMA includes several watersheds the two largest being Malibu Creek to the north and Ballona Creek to the south. While the Malibu Creek area contains mostly undeveloped mountain areas, large acreage residential properties and many natural stream reaches; Ballona Creek is predominantly channelized, and highly developed with both residential and commercial properties.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sediment toxicity (93, 94, 97)
Sediment Chemistry (93, 94, 96, 97): copper, lead, zinc, chlordane, DDT, PCB
Sediment Chemistry (96-00): copper, lead, zinc
Tissue (93, 95): chlordane, PCB

Table 2. Summary of Tissue and Sediment Data for Marina Del Rey Harbor-Back Basins

Dates of Sampling	6/22/93; 1/14/93; 2/15/94; 6/28/95; 6/19/96; October 1996; 2/5/97; October 1997; October 1998; September 1999; October 2000
Number of Samples (n)	1993: 1 (sediment), 1 (fish tissue); 1994: 3 (sediment); 1995: 3 (fish tissue); 1996: 5 (sediment); 1997: 9 (sediment); 1998: 4 (sediment); 1999: 4 (sediment); 2000: 4 (sediment)
Minimum Data Value	Copper (sed): 108 ppm; Lead (sed): 51 ppm Zinc (sed): 157 ppm; Total chlordane (sed): nd Total PCB (sed): nd; Total chlordane (tis): nd; Total PCB (tis): nd
Maximum Data Value	Copper (sed): 420 ppm; Lead (sed): 292 ppm; Zinc (sed): 520 ppm; Total chlordane (sed): 24.9 ppb; Total PCB (sed): 391.5 ppb; Total chlordane (tis): 128 ppb; Total PCB (tis): 490 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Sediment toxicity: 6 (86 %); Copper (sed): 22 (96 %); Lead (sed): 12 (52 %); Zinc (sed): 18 (78 %); Chlordane (sed): 7 (30 %); PCB (sed): 7 (30 %); Chlordane (tis): 2 (50 %); PCB (tis) 3 (75 %)

Potential Sources

Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from urban areas.

References

Toxic Substances Monitoring Program database
Bay Protection and Toxic Cleanup Program database
Marina Del Rey Monitoring Program, Los Angeles County Department of Beaches and Harbors

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
McGrath Lake Ag Drain

Summary of Proposed Action

New Proposed Listings

- "Not Supporting" (Impaired) for sediment toxicity due to exceedances in toxicity tests.
- "Not Supporting" (Impaired) for degraded benthic infaunal community due to community assessments.
- "Not Supporting" (Impaired) for DDT in sediment due to exceedances of Effects Range-Median (ERM) and/or Probable Effects Level (PEL).
- "Not Supporting" (Impaired) for chlordane in sediment due to exceedances of ERM and/or PEL.
- "Not Supporting" (Impaired) for dieldrin in sediment due to exceedances of ERM and/or PEL.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	McGrath Lake Ag Drain	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.
Total Waterbody Size	0.5	**TMDL Priority**	25
Size Affected		**TMDL Start Date (Mo/Yr)**	2004
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2007

Watershed Characteristics

McGrath Lake: McGrath Lake is a small brackish waterbody located just south of the Santa Clara River. The lake is located partially on State Parks land and partially on privately-owned oilfields in current production. A number of agricultural ditches drain into the lake. A state beach is located off the coastal side of the lake. The habitat around the lake is considered to be quite unique and it is utilized by a large number of overwintering migratory birds.

Water Quality Objectives Not Attained

Sediment toxicity, benthic infaunal community, ERM/PEL sediment guidelines

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sed Tox (98)
Sed (98): chlordane, DDT
Degraded benthic infaunal community

Table 2. Summary of Sediment Data for McGrath Lake Ag Drain (Misc. Ventura Coastal WMA)

Dates of Sampling	October 1998
Number of Samples (n)	1 (sediment)
Minimum Data Value	
Maximum Data Value	Total chlordane: 19 ppb Total DDT: 726 ppb Dieldrin: 5.9 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Sediment toxicity: 1 (100 %) Benthic infauna: 1 (100 %) Chlordane: 1 (100 %) DDT: 1 (100 %) Dieldrin: 1 (100 %)

Potential Sources

Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.

References

McGrath Lake characterization study conducted by California Department of Fish and Game on behalf of the LA Regional Board (1998).

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
McGrath Lake (Estuary)

Summary of Proposed Action

New Proposed Listings

- "Not Supporting" (Impaired) for benthic infaunal community due to community assessments.
- "Not Supporting" (Impaired) for PCB in sediment due to exceedances of Effects Range-Median (ERM) and/or Probable Effects Level (PEL).
- "Not Supporting" (Impaired) for dieldrin in sediment due to exceedances of ERM and/or PEL.

New Proposed Delistings

- Delist total pesticides in sediment because individual chemicals can be listed for exceedances of ERM or PEL as appropriate

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	McGrath Lake Estuary	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.
Total Waterbody Size	18.7 ac	**TMDL Priority**	25
Size Affected		**TMDL Start Date (Mo/Yr)**	2004
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2007

Watershed Characteristics

McGrath Lake: McGrath Lake is a small brackish waterbody located just south of the Santa Clara River. The lake is located partially on State Parks land and partially on privately-owned oilfields in current production. A number of agricultural ditches drain into the lake. A state beach is located off the coastal side of the lake. The habitat around the lake is considered to be quite unique and it is utilized by a large number of overwintering migratory birds.

Water Quality Objectives Not Attained

Sediment toxicity, benthic infaunal community, ERM/PEL sediment guidelines

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sed Tox (93, 94, 98)
Sed (93, 96): chlordane, DDT, dieldrin
Sed (98): chlordane, DDT, PCB, dieldrin
Degraded benthic infaunal community

Table 2. Summary of Sediment and Benthic Infauna Data for McGrath Lake (Estuary)

Dates of Sampling	1/13/93 4/13/94 6/19/96 October 1998
Number of Samples (n)	1993: 1 (sediment) 1994: 3 (sediment) 1996: 1 (sediment) 1998: 11 (sediment)
Minimum Data Value	Total chlordane: 10 ppb Total DDT: 150 ppb Dieldrin: 0.5 ppb Total PCB: 14 ppb
Maximum Data Value	Total chlordane: 816 ppb Total DDT: 3488 ppb Dieldrin: 38.1 ppb Total PCB: 448 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Sediment toxicity: 12 (81 %) Benthic infauna: 11 (100 %) Chlordane: 13 (100 %) DDT: 13 (100 %) Dieldrin: 10 (77 %) PCB: 7 (54 %)

Potential Sources

Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.

References

McGrath Lake characterization study conducted by California Department of Fish and Game on behalf of the LA Regional Board (1998).
Bay Protection and Toxic Cleanup Program database.

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Mugu Lagoon

Summary of Proposed Action

New Proposed Listings

- "Not Supporting" (Impaired) for benthic community degradation due to community assessment.
- "Not Supporting" (Impaired) for dieldrin in tissue due to exceedances of Maximum Tissue Residue Levels (MTRLs).
- "Not Supporting" (Impaired) for toxaphene in tissue due to exceedances of MTRLs.

New Proposed Delistings

- Delist dacthal in tissue as there are no approved guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Mugu Lagoon	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from urban and agricultural areas.
Total Waterbody Size	505 ac	**TMDL Priority**	5
Size Affected		**TMDL Start Date (Mo/Yr)**	2002
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2005

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon ground water for drinking.

Water Quality Objectives Not Attained

MTRL, ERM/PEL, Benthic Community Index

Beneficial Uses Affected

Aquatic Life, Fish Consumption

Data Assessment

Sediment toxicity (94)
Sed chem (97): DDT, chlordane (ERM, PEL)
Tissue (94): chlordane, dieldrin, toxaphene (MTRL)
Tissue (94, 97): DDT (MTRL)
Tissue (97): PCB (MTRL)

Table 2. Summary of Tissue and Sediment Data for Mugu Lagoon

Dates of Sampling	2/8/94 4/14/94 6/12/94 2/6/97 7/16/97
Number of Samples (n)	1994: 3 (sediment) + 1 (fish tissue) + 1 (mussel tissue) 1997: 6 (sediment) + 1 (fish tissue)
Minimum Data Value	Total chlordane (sed): 3.3 ppb Total DDT (sed): 64.7 ppb Total chlordane (tis): nd p,p'-DDD (tis): nd p,p'-DDE (tis): 43 ppb p,p'-DDT (tis): nd dieldrin (tis): nd toxaphene (tis): nd
Maximum Data Value	Total chlordane (sed): 12.97 ppb Total DDT (sed): 276.8 ppb Total chlordane (tis): 28.5 ppb p,p'-DDD (tis): 54.6 ppb p,p'-DDE (tis): 325 ppb p,p'-DDT (tis): 120.9 ppb

	dieldrin (tis): 4.7 ppb toxaphene (tis): 468 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Sediment toxicity: 2 (67 %) Chlordane (sed): 6 (100 %) DDT (sed): 6 (100 %) Chlordane (tis): 1 (33 %) DDTs (tis): 5 (56 %) Dieldrin (tis): 1 (33 %) Toxaphene (tis): 1 (33 %)

Potential Sources

Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from urban and agricultural areas.

References

Bay Protection and Toxic Cleanup Program, Toxic Substances Monitoring Program, State Mussel Watch Program databases

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Port Hueneme Harbor (back basins)

Summary of Proposed Action

Proposed New Delistings

- Delist PAHs in sediment since levels appear to be low throughout most of the back basin area based on Army Corps of Engineers data.
- Delist TBT and zinc for tissue because there are no tissue assessment guidelines for TBT or zinc and levels in the sediments are low.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Port Hueneme Harbor (back basins)	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Unknown
Total Waterbody Size	50	**TMDL Priority**	PAH: 27 Zinc: 28 TBT: 30
Size Affected		**TMDL Start Date (Mo/Yr)**	N/A
Extent of Impairment		**TMDL End Date (Mo/Yr)**	N/A

Watershed Characteristics

Port Hueneme is a medium-sized deepwater harbor located in Ventura County, north of Mugu Lagoon. Part of it was operated by a U.S. Navy Construction Battalion until very recently while the rest of the harbor serves as a commercial port operated by the Oxnard Harbor District. The construction of a majority of the harbor was completed in 1975. The commercial side generally serves ocean-going cargo vessels and oil supply boats; the latter serve the oil platforms in the Santa Barbara Channel. Two endangered bird species may use the harbor, the California Brown Pelican and the California Least Tern.

Water Quality Objectives Attained

N/A

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sediment chemistry (96, 01): metals and organics levels were low, except for PCBs at 1 of 20 stations sampled in 2001.

Table 2. Summary of Tissue and Sediment Data for Port Hueneme Harbor (back basins)

Dates of Sampling	6/19/96
Number of Samples (n)	1996: 2 + 12 (sediments) 2001: 20 (sediments)
Minimum Data Value	
Maximum Data Value	
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	

Potential Sources

N/A

References

Bay Protection and Toxic Cleanup Program database
U.S. Army Corps of Engineers sampling data for maintenance dredging

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Revolon Slough Main Branch: Mugu Lagoon to Central Avenue

Summary of Proposed Action

Proposed New Delistings

- Delist dacthal in sediment as there are no valid approved guidelines for this compound.
- Delist dacthal in tissue since these listings were based on Elevated Data Levels (EDLs), which do not represent valid assessment guidelines.
- Delist Chem A in tissue since the listing was based on NAS guidelines, which are outdated, and individual chemicals can be listed for exceedances of Maximum Tissue Residue Levels (MTRLs) as appropriate. This affects fish consumption as well.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Revolon Slough	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Historical use of pesticides and lubricants.
Total Waterbody Size	8.90	**TMDL Priority**	5
Size Affected		**TMDL Start Date (Mo/Yr)**	
Extent of Impairment		**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields

drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon ground water for drinking.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life; Fish Consumption

Data Assessment

Tissue (94, 97): chlordane, DDT, dieldrin, PCB, toxaphene (MTRL)

Table 2. Summary of Tissue Data for Revolon Slough (Main Branch) of the Calleguas Creek Watershed

Dates of Sampling	6/23/94 7/16/97
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	Total chlordane: 127 ppb p,p-DDD: 330 ppb p,p-DDE: 3700 ppb p,p-DDT: 200 ppb Dieldrin: 38 ppb Total PCB: 140 ppb Toxaphene: 4700 ppb
Maximum Data Value	Total chlordane: 265.1 ppb p,p-DDD: 450 ppb p,p-DDE: 4800 ppb p,p-DDT: 270 ppb Dieldrin: 63 ppb Total PCB: 495 ppb Toxaphene: 12000 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (100 %) DDTs: 9 (100 %) Dieldrin: 2 (100 %) PCB: 2 (100 %) Toxaphene: 2 (100 %)

Potential Sources

Historical use of pesticides and lubricants.

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Rio de Santa Clara/Oxnard Drain #3

Summary of Proposed Action

Proposed New Listings
"Not Supporting" (Impaired) for dieldrin in tissue due to exceedances of Maximum Tissue Residue Levels (MTRLs).

Proposed New Delistings
- Delist Chem A in tissue since the listing was based on NAS guidelines, which are outdated, and individual chemicals can be listed for exceedances of Maximum Tissue Residue Levels (MTRLs) as appropriate. This affects fish consumption as well.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Rio de Santa Clara / Oxnard Drain #3	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.
Total Waterbody Size	2.48	**TMDL Priority**	8
Size Affected		**TMDL Start Date (Mo/Yr)**	2006
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2009

Watershed Characteristics

Calleguas Creek and its major tributaries, Revolon Slough, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, and Arroyo Simi drain an area of 343 square miles in southern Ventura County and a small portion of western Los Angeles County. This watershed, which is elongated along an east-west axis, is about 30 miles long and 14 miles wide. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain, and Oak Ridge; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.

Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Although some residential development has occurred along the slopes of the watershed, most upland areas are still open space, however, golf courses are becoming increasingly popular to locate in these open areas. Agricultural activities, primarily cultivation of orchards and row crops, are spread out along valleys and on the Oxnard Plain.

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area

and the surrounding Oxnard Plain supports a large variety of agricultural crops. These fields drain into ditches which either enter the lagoon directly or through Calleguas Creek and its tributaries. Other fields drain into tile drain systems which discharge to drains or creeks. Also in the area of the base are freshwater wetlands created on a seasonal basis to support duck hunting clubs. The lagoon borders on an Area of Special Biological Significance (ASBS) and supports a great diversity of wildlife including several endangered birds and one endangered plant species. Except for the military base, the lagoon area is relatively undeveloped.

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon ground water for drinking.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life; Fish Consumption

Data Assessment

Tissue (97): chlordane, DDT, dieldrin, PCB, toxaphene (MTRL)

Table 2. Summary of Tissue Data for Rio de Santa Claraa / Oxnard Drain # 3

Dates of Sampling	7/16/97
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	Total chlordane: 265 ppb p,p'-DDD: 820 ppb p,p'-DDE: p,p'-DDT: 310 ppb Dieldrin: 25 ppb Total PCB: 99.1 ppb Toxaphene: 814 ppb
Maximum Data Value	Total chlordane: 282.8 ppb p,p'-DDD: 910 ppb p,p'-DDE: 3600 ppb p,p'-DDT: 330 ppb Dieldrin: 26 ppb Total PCB: 110.7 ppb Toxaphene: 1010 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (100 %) DDTs: 6 (100 %) Dieldrin: 2 (100 %) PCB: 2 (100 %) Toxaphene: 2 (100 %)

Potential Sources

Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
San Gabriel River Estuary

Summary of Proposed Action

Proposed New Delistings

- Delist arsenic in tissue because there is no longer a Maximum Tissue Residue Level (MTRL) for this compound.

This action affects the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	San Gabriel River Estuary	**Pollutants/Stressors**	**Delete**: As (Tissue)
Hydrologic Unit	405.15	**Source(s)**	
Total Waterbody Size	2.95	**TMDL Priority**	
Size Affected	2.95	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire estuary	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming an soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channelized portion and nurseries, small stable areas, and a large poultry farm are located in these areas.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

No new data.

Potential Sources

N/A

References

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Santa Clara River Estuary

Summary of Proposed Action

Proposed New Delistings

- Delist Chem A in tissue since the listing was based on NAS guidelines, which are outdated, and individual chemicals can be listed for exceedances of Maximum Tissue Residue Levels (MTRLs) as appropriate.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Santa Clara River Estuary	**Pollutants/Stressors**	See Above
Hydrologic Unit	403.11	**Source(s)**	Unknown
Total Waterbody Size	2.07	**TMDL Priority**	33
Size Affected		**TMDL Start Date (Mo/Yr)**	
Extent of Impairment		**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The Santa Clara River is the largest river system in southern California that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

Extensive patches of high quality riparian habitat are present along the length of the river and its tributaries. The endangered fish, the unarmored stickleback, is resident in the river. One of the largest of the Santa Clara River's tributaries, Sespe Creek, is designated a wild trout stream by the state of California and supports significant spawning and rearing habitat. The Sespe Creek is also designated a wild and scenic river. Piru and Santa Paula Creeks, which are tributaries to the Santa Clara River, also support good habitats for steelhead. In addition, the river serves as an important wildlife corridor. A lagoon exists at the mouth of the river and supports a large variety of wildlife.

Water Quality Objectives Attained

N/A

Beneficial Uses Affected

N/A

Data Assessment

No new data

Potential Sources

N/A

References

Toxic Substances Monitoring Program Database
Bay Protection and Toxic Cleanup Program Database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Ventura River Estuary

Summary of Proposed Action

Proposed New Delistings

- Delist DDT in tissue as the original listing appears to have been based on DDT concentrations found in shiner surfperch in 1993 (TSM); however, the level of 23 ppb for p,p'-DDE is below the MTRL (which equals 32.0 ppb).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ventura River Estuary	**Pollutants/Stressors**	See Above
Hydrologic Unit	402.10	**Source(s)**	n/a
Total Waterbody Size	0.35 mi	**TMDL Priority**	87
Size Affected		**TMDL Start Date (Mo/Yr)**	
Extent of Impairment		**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins composed of alluvial aquifers deposited along the surface water system, are highly interconnected with the surface water system and are quickly recharged or depleted, according to surface flow conditions. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters.

Precipitation varies widely in the watershed. Most occurs as rainfall during just a few storms, between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The erratic weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Water Quality Objectives Attained

MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Table 2. Summary of Tissue and Sediment Data for the Ventura River Estuary

Dates of Sampling	2/10/93 6/21/93 6/20/98
Number of Samples (n)	1993: 1 (sediment) + 1 (fish tissue) 1998: 2 (sediment)
Minimum Data Value	
Maximum Data Value	
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	

Potential Sources

N/A

References

Toxic Substances Monitoring Program Database
Bay Protection and Toxic Cleanup Program Database
Ojai Valley Sanitation Districts NPDES Monitoring

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Ventura River R1 (Estuary to Main St) and R2 (Main St to Weldon Canyon)
Chlordane, Dieldrin, Hexachlorocyclohexane

Summary of Proposed Action

Proposed New Listings

- "Not Supporting" (Impaired) for chlordane in tissue in Reach 2 due to exceedances of Maximum Tissue Residue Levels (MTRLs).
- "Not Supporting" (Impaired) for HCH in tissue in Reach 2 due to exceedances of MTRLs.

Proposed New Delistings

- Delist copper in tissue in Reaches 1 and 2 since these listings were based on Elevated Data Levels (EDLs), which do not represent valid assessment guidelines.
- Delist selenium in tissue in Reach 2 since this listing was based on EDLs, which do not represent valid assessment guidelines.
- Delist silver in tissue in Reaches 1 and 2 since these listings were based on EDLs, which do not represent valid assessment guidelines.
- Delist zinc in tissue in Reaches 1 and 2 since these listings were based on EDLs, which do not represent valid assessment guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ventura River Reaches 1 and 2	**Pollutants/Stressors**	See Above
Hydrologic Unit	402.10	**Source(s)**	Historical use of pesticides.
Total Waterbody Size	0.18 & 4.64	**TMDL Priority**	Chlordane & HCH: 87 metals: 90
Size Affected	Reach 2 (4.64)	**TMDL Start Date (Mo/Yr)**	2003
Extent of Impairment		**TMDL End Date (Mo/Yr)**	2006

Watershed Characteristics

The Ventura River and its tributaries drain a coastal watershed in western Ventura County. The watershed covers a fan-shaped area of 235 square miles, which is situated within the western Transverse Ranges (the only major east-west mountain ranges in the continental U.S.). From the upper slopes of the Transverse Ranges, the surface water system in the Ventura River watershed generally flows in a southerly direction to an estuary, located at the mouth of the Ventura River. Groundwater basins composed of alluvial aquifers deposited along the surface water system, are highly interconnected with the surface water system and are quickly recharged or depleted, according to surface flow conditions. Topography in the watershed is rugged and as a result, the surface waters that drain the watershed have very steep gradients, ranging from 40 feet per mile at the mouth to 150 feet per mile at the headwaters.

Precipitation varies widely in the watershed. Most occurs as rainfall during just a few storms, between November and March. Summer and fall months are typically dry. Although snow occurs at higher elevations, melting snowpack does not sustain significant runoff in warmer months. The erratic weather pattern, coupled with the steep gradients throughout most of the watershed, result in high flow velocities with most runoff reaching the ocean.

Water Quality Objectives Not Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (93, 98): chlordane, HCH

Table 2. Summary of Tissue Data for the Ventura River Reaches 1 and 2

Dates of Sampling	6/21/93 6/26/98
Number of Samples (n)	3 (fish tissue)
Minimum Data Value	Total chlordane: 5.8 ppb Gamma-HCH: nd
Maximum Data Value	Total chlordane: 23.8 ppb Gamma-HCH: 5.8 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (67 %) HCH: 2 (67 %)

Tissue (98): chlordane, HCH (MTRL)

Potential Sources

Historical use of pesticides.

References

Toxic Substances Monitoring Program Database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
Westlake Lake

Summary of Proposed Action

Proposed New Delistings

- Delist chlordane in tissue because the listing was based on a tissue concentration that now is below the Maximum Tissue Residue Level (MTRL) for this compound.
- Delist copper in tissue because the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Westlake Lake	**Pollutants/Stressors**	**Delete**: chlordane (Tissue); Cu (Tissue);
Hydrologic Unit	404.25	**Source(s)**	
Total Waterbody Size	186	**TMDL Priority**	
Size Affected	186	**TMDL Start Date (Mo/Yr)**	
Extent of Impairment	Entire lake	**TMDL End Date (Mo/Yr)**	

Watershed Characteristics

The Santa Monica Bay Watershed Management Area (WMA), which encompasses an area of 414 square miles, is quite diverse. Its borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. South of Ballona Creek the natural drainage area is a narrow strip of wetlands between Playa del Rey and Palos Verdes. The WMA includes several watersheds the two largest being Malibu Creek to the north and Ballona Creek to the south. While the Malibu Creek area contains mostly undeveloped mountain areas, large acreage residential properties and many natural stream reaches; Ballona Creek is predominantly channelized, and highly developed with both residential and commercial properties.

Water Quality Objectives Attained

Tissue MTRLs

Beneficial Uses Affected

Aquatic Life

Data Assessment

No new data

Potential Sources

N/A

References