December 6, 2002

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 is not 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- Delist TBT in tissue since the listing was based on Elevated Data Levels (EDLs) which no longer represent valid assessment guidelines.
- Delist zinc in tissue since the listing was based on EDLs which no longer represent valid assessment guidelines.
- Delist copper in tissue since the listing was based on EDLs which no longer represent valid assessment guidelines.
- Delist lead in tissue since the listing was based on EDLs which no longer represent valid assessment guidelines.
- Delist DDT in sediment since sediment concentrations have dropped below sediment quality guidelines ERM and/or PEL 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

ERM and/or PEL

EDLs have been determined to be an insufficient basis for impairment determination.

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 (95-98): copper, lead, zinc
Tissue (93, 95): chlordane, PCB
Benthic Community (96, 97)

Table 2. Summary of Tissue and Sediment and Benthic Community 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); 1996: 1 (benthic community); 1997: 5 (benthic community) 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; DDT (sed): nd Benthic community: 0.34 (RBI)
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; DDT (sed): 98 ppb Benthic community: 0.66 (RBI)
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 %); DDT (sed): 3 (10%)*; Benthic community: 0 (0%)

Notes: * All exceedances of DDT in sediment were from samples collected in 1994.
This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
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 as previously listed in the 1996 Water Quality Assessment.

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**	Copper: 68 Chlordane & PCBs: 61
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

EDLs have been determined to be an insufficient basis for impairment determination.

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.

Data Assessment

Tissue (92, 97): metals and organics levels low.

Table 2. Summary of Tissue Data for Malibou Lake

Dates of Sampling	4/23/92; 7/17/97
Number of Samples (n)	2 4 (fish tissue)
Minimum Data Value	Total chlordane: nd
Maximum Data Value	Total chlordane: 6.2 ppb; Total PCBs: nd
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Total chlordane: 0 (0%); Total PCBs: 0 (0%)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

Potential Sources

N/A

References

Toxic Substances Monitoring Program database.

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)**	Non-point 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~~5/02
Number of Samples (n)	~~13~~29
Minimum Data Value	~~<104~~ MPN/100 mL
Maximum Data Value	17329 MPN/100 mL
Median Data Value	~~256 MPN/100 mL~~
Arithmetic Mean Value	~~1528~~ 935 MPN/100 mL
Standard Deviation	~~4749~~ 3190 MPN/100 mL
Number (Percent) above Objective	~~Geomean of 206 exceeds 200, although only 1 or 8% exceed the standard of 400.~~ 6 (21%)

Potential Sources

Possible sources include non-point.

References

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

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 Residue Levels (MTRLs).
- "Not Supporting" (Impaired) for toxaphene in tissue due to exceedances of MTRLs.

Proposed New Delistings

- Delist TBT in tissue and sediment because the listing was based on exceeding background levels rather than valid assessment guidelines. Delisting applies to LA Harbor Consolidated Slip (tissue only), Fish Harbor (sediment only), Inner Breakwater (sediment only) and Main Channel (sediment only).
- 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 and/or commercial and sport fishing 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

Beneficial Uses Affected

Aquatic Life
Commercial and Sport Fishing

Data Assessment

Tissue (93): chlordane, DDT, PCB, toxaphene
Tissue (94): DDT, PCB
Tissue (95): dieldrin, PCB, toxaphene
Tissue (96): DDT, PCB
Tissue (97): toxaphene
Tissue (98): dieldrin, DDT, PCB, toxaphene
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 1/6/93; 11/9/93 2/1/94; 2/8/94 1/31/95 1/18/96; 7/17/96 3/24/98
Number of Samples (n)	1992: 2 (sediment) 1993: 1 (sediment) + 1 (tissue) 1994: 3 (sediment) + 1 (tissue) 1995: 1 (tissue) 1996: 14 (sediment) + 1 (tissue) 1998: 2 (tissue) 19 (sediment toxicity) 8 (benthic infauna)
Minimum Data Value	Arsenic (sed): 18.3 ppm Toxaphene (tis): nd Copper (sed): 58 ppm Chromium (sed): 47 ppm Cadmium (sed): 1.0 ppm Lead (sed): 40 ppm 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	Arsenic (sed): 23.9 ppm Toxaphene (tis): 150 ppb Copper (sed): 1740 ppm Chromium (sed): 552 ppm Cadmium (sed): 14.5 ppm Lead (sed): 1590 ppm 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 %) Arsenic (sed): 0 (0%) Toxaphene (tis): 4 (67%) Copper (sed): 19 (95 %) Chromium (sed): 4 (20 %) Cadmium (sed): 6 (30 %) Lead (sed): 13 (65 %) Mercury (sed): 5 (25 %) Nickel (sed): 5 (10025 %) 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 %)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
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 Residue Levels (MTRLs).
- "Not Supporting" (Impaired) for toxaphene in tissue due to exceedances of MTRLs.

Proposed New Delistings

- Delist TBT in tissue and sediment because the listing was based on exceeding background levels rather than valid assessment guidelines. Delisting applies to LA Harbor Consolidated Slip (tissue only), Fish Harbor (sediment only), Inner Breakwater (sediment only) and Main Channel (sediment only).
- 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 and/or commercial and sport fishing 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

Beneficial Uses Affected

Aquatic Life
Commercial and Sport Fishing

Data Assessment

Tissue (93): chlordane, DDT, PCB, toxaphene
Tissue (94): DDT, PCB
Tissue (95): dieldrin, PCB, toxaphene
Tissue (96): DDT, PCB
Tissue (97): toxaphene
Tissue (98): dieldrin, DDT, PCB, toxaphene
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 1/6/93; 11/9/93 2/1/94; 2/8/94 1/31/95 1/18/96; 7/17/96 3/24/98
Number of Samples (n)	1992: 2 (sediment) 1993: 1 (sediment) + 1 (tissue) 1994: 3 (sediment) + 1 (tissue) 1995: 1 (tissue) 1996: 14 (sediment) + 1 (tissue) 1998: 2 (tissue) 19 (sediment toxicity) 8 (benthic infauna)
Minimum Data Value	Arsenic (sed): 18.3 ppm Toxaphene (tis): nd Copper (sed): 58 ppm Chromium (sed): 47 ppm Cadmium (sed): 1.0 ppm Lead (sed): 40 ppm 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	Arsenic (sed): 23.9 ppm Toxaphene (tis): 150 ppb Copper (sed): 1740 ppm Chromium (sed): 552 ppm Cadmium (sed): 14.5 ppm Lead (sed): 1590 ppm 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 %) Arsenic (sed): 0 (0%) Toxaphene (tis): 4 (67%) Copper (sed): 19 (95 %) Chromium (sed): 4 (20 %) Cadmium (sed): 6 (30 %) Lead (sed): 13 (65 %) Mercury (sed): 5 (25 %) Nickel (sed): 5 (25 %) → 100% (5/5) 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 %)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
Mugu Lagoon

Summary of Proposed Action

New Proposed Listings

- "Not Supporting" (Impaired) for benthic community degradation due to community assessment.

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

Benthic Community Index

Beneficial Uses Affected

Aquatic Life

Data Assessment

Sediment toxicity (94)
Sed chem (97): DDT, chlordane (ERM, PEL)
Tissue (94): chlordane
Tissue (94, 97): DDT (MTRL)
Tissue (97): PCB (MTRL)
Benthic community (97)

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) + 6 (benthic community)
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 Benthic community: 0.00 (RBI)
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 Benthic community: 0.14 (RBI)
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 %) Benthic community: 6 (100%)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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 database
Toxic Substances Monitoring Program database
State Mussel Watch Program databases 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 as previously listed in the 1996 Water Quality Assessment.

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**	Copper: 68 Chlordane & PCBs: 61
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

EDLs have been determined to be an insufficient basis for impairment determination.

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.

Data Assessment

Tissue (92, 97): metals and organics levels low.

Table 2. Summary of Tissue Data for Malibou Lake

Dates of Sampling	4/23/92; 7/17/97
Number of Samples (n)	2 1 (fish tissue)
Minimum Data Value	Total chlordane: nd
Maximum Data Value	Total chlordane: 6.2 ppb; Total PCBs: nd
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Total chlordane: 0 (0%); Total PCBs: 0 (0%)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
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 fish consumption and aquatic life beneficial uses, as previously listed in the 1996 Water Quality Assessment.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Westlake Lake	**Pollutants/Stressors**	**Delete**: chlordane (Tissue); Cu (Tissue);
Hydrologic Unit	404.25	**Source(s)**	Unknown
Total Waterbody Size	186	**TMDL Priority**	Chlordane: 61 Copper: 68
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 Not Attained

EDLs have been determined to be an insufficient basis for impairment determination.

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.
Fish Consumption.

Data Assessment

Tissue (91, 92): metals and organics levels low.

Table 2. Summary of Tissue Data for Westlake Lake

Dates of Sampling	4/23/91; 4/21/92
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	Total chlordane: nd
Maximum Data Value	Total chlordane: 6.6 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Total chlordane: 0 (0%)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

~~No new data~~

Potential Sources

Unknown

References

N/A

From: Tracy Vergets
To: Craig J. Wilson
Date: 2/27/02 11:27AM
Subject: Revised Fact Sheets From Region 4

Hi Craig,

I am attaching revised fact sheets below that are in reference to the requested changes regarding aquatic life beneficial uses and MTRLs.

1. Ventura River Estuary
2. Westlake Lake
3. Ballona Creek
4. Malibou Lake
5. San Gabriel River Estuary
6. Ballona Wetland
7. LA Harbor / Consolidated Slip
8. Conejo Creek Reaches 1-4

I am also attaching the Calleguas Creek Listings Factsheet (9). There was a minor change to a reference on page 64...this is the only page you need to print and replace. Please let us know if there are any additional items that you feel need to be addressed. Thanks!

--Tracy

Tracy L. Vergets
Environmental Scientist
LA Regional Water Quality Control Board
213-576-6661
tvergets@rb4.swrcb.ca.gov

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The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at:
http://www.swrcb.ca.gov/news/echallenge.html ***

CC: Renee DeShazo

From: Renee DeShazo
To: Emanuel, Melenee
Date: 2/28/02 4:07PM
Subject: Region 4 303d list revisions

Melenee,

Okay, here we go. The changes beyond what Tracy sent earlier are as follows:

1. Ballona Creek
Deleted two listings: Total aluminum and Bis(2-ethylhexyl)phthalate
Rationale: Were listings based on protection of Potential MUN

2. Calleguas Creek
Changed six fact sheets for nitrogen-related listings to protect Potential MUN to instead indicate protection of Groundwater Recharge and associated MUN beneficial use of underlying groundwater basin. Also changed support status from fully supporting but threatened to partially supporting or not supporting. The fact sheets changed are as follows:
Arroyo Las Posas (R6) - NO3
Conejo Creek (R10) - NO2 as N
Conejo Creek (R9A) - NO3 as N; NO3; NO2 as N
Revolon Slough (R4) - NO3

3. Los Angeles River
As with Calleguas, we changed two fact sheets to reflect protection of GWR and associated MUN use of groundwater rather than MUN. The support status was changed from fully supporting but threatened to partially supporting.
LA River R1 - Total aluminum
McCoy Canyon Creek (R2) - NO3 as N

4.Malibu Creek
Deleted two listings (Total aluminum & NO2 as N) as they were based on protection of Potential MUN use and there is no GWR use in Malibu in these locations.

5. San Gabriel River
Deleted two listings (Total aluminum & NO2 as N) as they were based on protection of Potential MUN use and there is no GWR use in the San Gabriel River at these locations.

6. Santa Clara River
Changed one fact sheet (Reach 3) to reflect protection of GWR rather than MUN, and changed support status from fully supporting but threatened to partially supporting.

7. Ventura County Coastal

A). Deleted two listings (Rincon Beach - Creek mouth & Rincon Creek) as they are in Region 3, not in our region. Region 3 has a listing for Rincon Point already. (Rincon Beach at the Flagpole site is in our region, so we have kept the listing.)

B). Added one new listing for San Buenaventura Beach for Total Coliform.

C). Added one new DELISTING for Santa Clara River Estuary Beach/Surfer's Knoll for Total and Fecal Coliform. These came about as a result of recent TMDL work by one of our staff.

D). Deleted five new listings for McGrath Lake Ag Drain. McGrath Lake Ag Drain is not listed in our Basin Plan beneficial use tables, and should not have been listed in the first place. Furthermore, McGrath Lake, into which the drain flows, is listed for all constituents that were originally proposed for McGrath Ag Drain.

So, there you have it. I have revised the fact sheets and the staff report accordingly. You should just replace each watershed fact sheet series that has been changed with what is attached. For the tissue & sediment listings, just remove the McGrath Lake Ag Drain fact sheet.

Renee

Renee DeShazo
Environmental Scientist
Los Angeles Regional Water Quality Control Board
(213) 576-6783
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Santa Clara
RVr RCe
Nitrate, Nitrite
organic Enr.

Post-it™ Fax Note 7671	Date 8/29/02	# of pages ▶ 21
To Melenee Emanuel	From Tracy Versets	
Co./Dept. SWRCB	Co. RB4	
Phone # 916 341 5271	Phone # 213 576 [illegible]	
Fax # 916 341 5550	Fax #	

August 29, 2002

To: Renee DeShazo

From: Elizabeth Erickson

Subj: Response to Comments for 2000 303(d)listing for Nitrate/Nitrite and Organic Enrichment/DO for Reach 6 (EPA Reach 8) of the Santa Clara River

The County Sanitation Districts of Los Angeles(CSDLA) submitted a comment letter dated June 14, 2002 which included new data and requested that Reach 6 (EPA Reach 8) be delisted. I have completed additional analysis of the new data, the previous data, and the components of the best professional judgement of the recommendation to retain the listing for nitrate/nitrite and I summarize these results in detail below. A summary of comments for the nutrient listing questions on this reach is also provided.

Summary

The new data set was collected over only two years of the sample period. Some submitted data was incorrectly attributed to this reach, while it was collected in the adjacent downstream reach, which has more dilution.

The downstream reach has a lower objective (5 mg/L) than the reach for which delisting is requested. Of eleven samples taken in the downstream reach immediately over the reach boundary (station RC), 4 or 36% of the nitrate-nitrite as nitrogen exceeded the 5 mg/L objective, demonstrating that the nutrient levels in the upstream reach are high enough to prevent attainment of the objective at every location in the downstream reach.

A nutrient TMDL is currently underway in this reach proposed for delisting and ongoing sampling efforts and visual observations show the presence of algae and nitrate-nitrite and nitrogen exceedances in this reach.

Although the discharger claims that the ammonia specific objective in the Basin Plan will require compliance with the ammonia objective by 2003, this requirement will not address nitrate, DO or organic enrichment objectives. Further, the discharger has not submitted any data or reports confirming progress to attain the ammonia objective at their plant.

Based on the insufficient data set and the uncertainty in achieving the ammonia objectives, Regional Board staff recommends retaining the listings for nitrate-nitrite, organic enrichment/DO in the reach.

Location and Objectives

Reach 6 (EPA Reach 8) lies between the Bouquest Canyon Bridge and the west pier of the Highway 99 bridge (see figure) . It receives flow from CSDLA's Saugus Water Reclamation Plant, Santa Clara River (dry), South Fork of the Santa Clara River(dry), Bouquet Creek and

rising groundwater. The Santa Clara River and the South Fork of that river are both dry at this location, but maintain underflow in alluvium with unusually high transmisivity. The Santa Clara River becomes a gaining river at the downstream end of the reach which lies within the Holser and San Gabriel Fault zones. The faults act as a water barrier which force up the underflow and other groundwater from the majority of the upper Santa Clara Watershed.

The nitrate plus nitrite objective in Reach 6 (EPA Reach 8) is 10mg/L. The nitrite and nitrate objectives come from the beneficial use for groundwater reacharge and are 1 mg./L and 10 mg/L respectively. The reaches immediately downstream and upstream have a lower nitrate plus nitrite objective of 5 mg/L. These also represent historical conditions in the river.

Impairment

The nitrate plus nitrite levels represented in the 2000 303(d) data in Reach 6 (EPA Reach 8) are high enough to prevent attainment of the objective in the downstream reach which is listed for nitrate/nitrite, even if the newly submitted data show that Reach 6 does not exceed the objectives for this nutrient measurement alone. In fact, the data submitted for the 303(d) analysis of that downstream reach comes from within a half mile of the downstream end of the Reach 6 (EPA Reach 8). At that Receiving Water Station RC, 36% of the samples exceed the objective for Reach 5 (EPA Reach 7) of 5 mg/L.

The entire data set submitted for analysis does not represent an even distribution in time or space, but provides data in a biased manner. As an example, the new data submitted for Reach 6 (EPA Reach 8) was collected at two locations, a receiving water station below the Saugus outfall, at the extreme upper end of the reach, and at the Highway 99 bridge, the extreme downstream end of the reach. While CSDLA is correct in that the two data sets together show attainment of the 10 mg/L standard for nitrate plus nitrite in Reach 6 (EPA Reach 8), the data collected at the lower end of the reach included half of the samples, but only 1 ½ years of data. In this small data set alone, 26% of the nitrate plus nitrite data exceeded the 5 mg/L objective of the downstream reach (which lies within a half mile) but meets the 10 mg/L for the reach in question. In the upper end of the reach, a full 4 years of data were reported. Finally, in the comment letter by CSDLA, as much as half of the data presented graphically to demonstrate attainment of the objectives comes from the receiving water station RC, which lies in the downstream reach. These data biases are further demonstrated by comparison with data collected by Regional Board staff, but not used in the 303(d) analysis. Among the 23 samples collected throughout the reach, 14% of the nitrate plus nitrate values in Reach 6 (EPA Reach 8) lay between the downstream objective of 5 mg/L and the objective of 10 mg/L and 12% of the nitrate samples exceeded the objective of 10 mg/L.

Reach 6 (EPA Reach 8) should be listed for nitrite. CSDLA did not include all of the water quality data submitted for their NPDES permit No. CA005431 for the 303(d) analysis and in fact not all of this data was used in the assessment. Receiving water levels in Reach 6 (EPA Reach 8) were evaluated for this memo as reported between 1997 and 2001. Of 20 nitrite samples taken,

15 exceeded the criteria of 1 m/gL, for 75% exceedance. Because this analysis postdates the submission of listing recommendations for 303(d) a new listing has not been recommended, but our permitting group has been asked to prepare a Notice of Violation.

Reach 6 (EPA Reach 8) should be listed for algae. Algae problems have been documented in both Reach 5 and 6. Figures are attached which demonstrate that in October 2001 for Reach 5 and in June 2002 for Reach 6, the algae problem probably exceed the RWQCB-LA Basin Plan Criteria (pg3-8) which states that " waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or advsersely affects beneficial uses." Some of these algae problems, including chorophyll-A mass measurements were documented in October 2001 and should be publically available this year. Access problems, as described below, have prevented further documentation of these observations and the lack of confirmation is the reason Reach 6 (EPA Reach 8) was not recommended for algae listing in the 2000 303(d) listing cycle.

Reach 6 (EPA Reach 8) might also be listed for coliform. RWQCB samples for coliform were collected on May 4, 1999, but were not evaluated for this 303(d), partially due to the difficulties with duplicating the sample due to access problems. On that date, 9000 MPN total coliform was recorded at Bouquet Canyon bridge and 700 was recorded at Highway 99. Additional sampling of these high levels is expected to demonstrate a coliform impairment.

Public Verification of Data Used for Listing

The RWQCB-LA has not be able to access the site sufficiently to verify the water quality information used in this request for delisting. As two examples of these continuous problems, a RWQCB funded study by UCLA, which was designed to document nutrient impairments, requested access of the land owner, Newhall Land and Farming, on Aug 13, 2001 for an October study after the Newhall had signed an MOU agreeing to participate in monitoring. The samplers were ultimately asked to leave the property before completing their assessement of Reach 6 (EPA Reach 8) when they accompanied CSDLA during their sampling of the receiving water stations (see emails attached). Citizen monitoring groups were also denied access to this property in June 2002. When the attached photos were finally taken on City of Santa Clarita property in that month, Newhall responded by saying that access to the sampling point would not be allowed. This problem has been experienced by other agencies, and resulted in an incomplete assessment of the water quality problems in the area. For example, approval of Newhall's development plans by the Los Angeles County Supervisors was delayed this summer after a Fish and Game search warrant revealed that they had illegally graded endangered spine flowers.

Attachments:

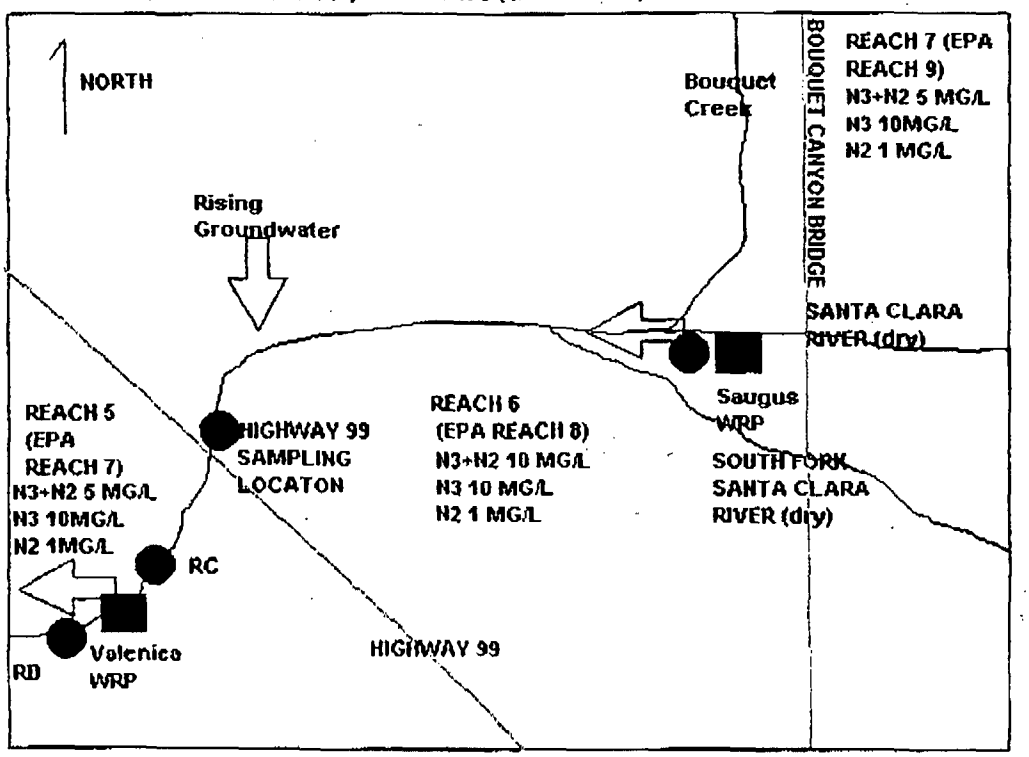
Figure: location map

Picture 1: algae at Receiving Water Station RD below Valencia WRP Outfall, October 2001.
Picture 2: Algae looking upstream from historic Railroad Bridge site between MCBean Parkway and San Fransisquito Creek on Santa Clara River, June 30, 2002-08-29
Picture 3: Algae beneath historic Railroad Bridge site between MCBean Parkway and San Fransisquito Creek on Santa Clara River, June 30, 2002-08-29

Tabel New data submitted
Table LACSD data from RC
Table NPDES report data
Table Regional Board Data not submitted for 303(d) listing

Emails from Mark Subbotin (Newhall Land) Aug 14, September 10, 18, and 19, 2001.
Emials for Heather Merenda, City of Santa Clarita, July 30, 2002.

Santa Clara River: Location Map for Reach 6 (EPA Reach 8)



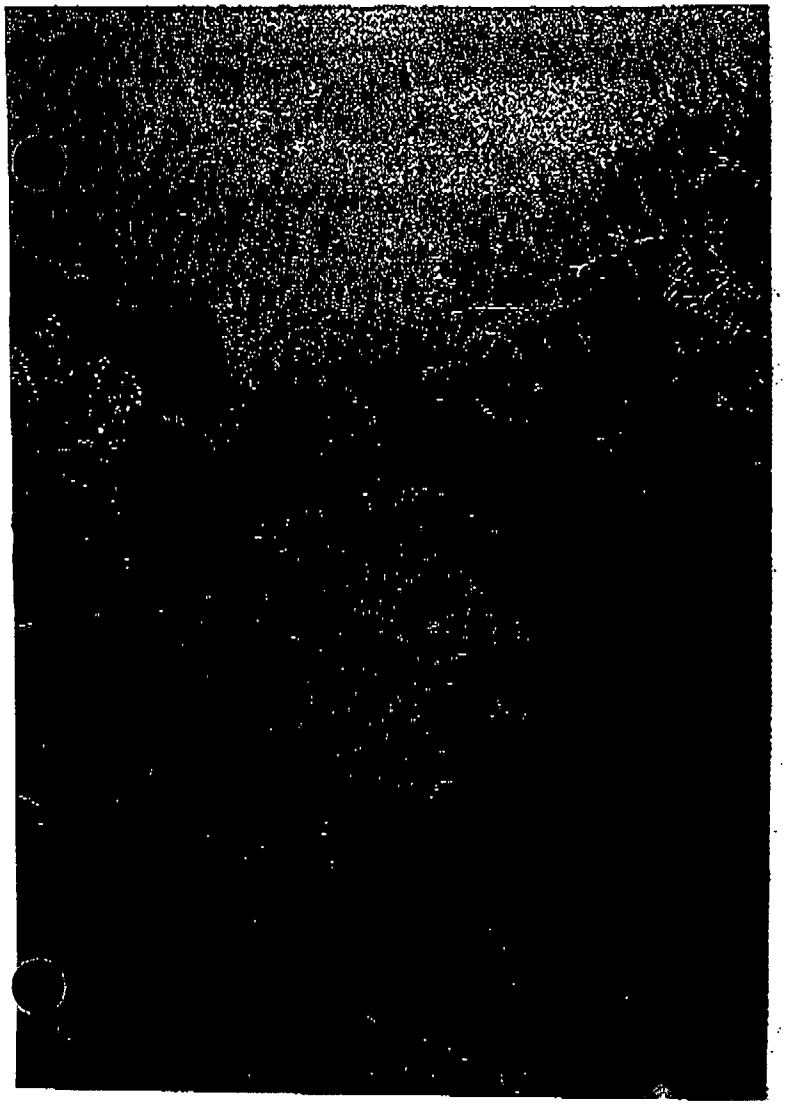
Not to scale, locations are approximate

EFFLUENT DISCHARGE

MONITORING POINT

SOURCE OF FLOW

HIGHWAYS AND REACH BOUNDARIES



More importantly however, from your description of the work scope, it is clear that RWQCB is embarking upon a monitoring program as indicated in the MOU you refer to. RWQCB had committed to work in "good faith" w/ stakeholders, rather than launch a sampling and monitoring program without any stakeholder input whatsoever. As a result, I question why you think the MOU is "binding".

For clarification, our intention in signing the MOU was to allow for future monitoring based upon the RWQCB staff recommendation for a Basin Plan Amendment to set a chloride limit of 143 mg/L. Future monitoring per the MOU was to determine what if any effects would be experienced by adopting the new chloride objective.

Prior to allowing access for monitoring purposes, we would be happy to make our offices available for RWQCB to convene a meeting with all affected stakeholders to discuss and develop a monitoring program to "include identification of surface water and ground water monitoring locations", "schedule and frequent of sampling events", "methodologies for data analysis", and other factors as generally described in the MOU. That would also be a good forum to provide a detailed technical description of the methodology of the TMDL development to gain stakeholder support.

Mark Subbotin
Newhall Ranch Company
661-255-4069
<msubbotin@newhall.com>

-----Original Message-----
From: Elizabeth Erickson [mailto:eerickso@rb4.swrcb.ca.gov]
Sent: Monday, August 13, 2001 4:44 PM
To: Mark Subbotin
Cc: Deborah Smith; Jonathan Bishop; Melinda Becker; Shirley Birosik; stevelee@ucla.edu
Subject: Access to Newhall Land

Hello Mark,

I am following up on our conversation from this morning at the Watershed meeting about access to Newhall property for summer season water quality sampling of the Santa Clara River. You had asked for some additional information concerning our efforts, specifically: scope of work, dates, evidence of insurance and access to the data generated as soon as it becomes available to us.

Work scope:
We are continuing sampling efforts in support of ongoing and future TMDL, specifically the Santa Clara chloride and nutrient TMDLs due for completion within the next year. UCLA will be completing sampling and macroinvertebrate

From: Mark Subbotin <msubbotin@newhall.com>
To: "Melinda Becker" <mbecker@rb4.swrcb.ca.gov>, Elizabeth Erickson <eerickso@rb4.swrcb.ca.gov>
Date: Tue, Aug 14, 2001 3:33 PM
Subject: RE: Access to Newhall Land

Melinda, Elizabeth told me on Tuesday she was going to actually be taking samples tomorrow.

Why isn't this being done in cooperation with SCR stakeholders, so that efficient coordination with many of the existing efforts by stakeholders is not duplicated or can be expanded upon? I am perplexed as to why RWQCB staff has deliberately chosen not to involve affected local agencies and interested parties in this sampling effort, and in the formulation of the TMDL.

-----Original Message-----
From: Melinda Becker [mailto:mbecker@rb4.swrcb.ca.gov]
Sent: Tuesday, August 14, 2001 2:49 PM
To: Mark Subbotin; Elizabeth Erickson
Cc: s green CSD (E-mail); v conway (E-mail); Dennis Dickerson; Deborah Smith; Jonathan Bishop; Shirley Birosik; J Fosselman (E-mail); J Lambert (E-mail); stevelee@ucla.edu
Subject: RE: Access to Newhall Land

Mark: I have spoken with Elizabeth today and she has indicated that the tour scheduled for tomorrow is merely to select sampling sites and can be accomplished without accessing Newhall Ranch's property. Please feel fee to contact me if you have any additional questions.

Best regards,
Melinda Becker

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html ***

>>> Mark Subbotin <msubbotin@newhall.com> 08/14/01 10:23AM >>>
Elizabeth, as I indicated at yesterday's meeting, Newhall requires that anyone seeking access to our property first obtain an access Permit and carry it with them to demonstrate their right to be on the property. This would include trips you have made yourself in the past to gather samples, as recently as in May(?) of this year. This procedure has been established by Newhall to control trespass which frequently occurs on private property (which is nearly all of the river) without permission. Regrettably this will delay your trip this Thursday.

Regional Board Data not submitted		N3+N2				
organic nitrogen	0.58				2/15/01	old road bridge
nitrate nitrogen	2.29	2.35			2/15/01	old road bridge
nitrite-nitrogen	0.06				2/15/01	old road bridge
nitrate nitrogen	2.21	2.27			2/21/01	old road bridge
nitrite-nitrogen	0.06				2/21/01	old road bridge
organic nitrogen	0.29				2/21/01	old road bridge
nitrate nitrogen	2.3	2.315			3/1/01	old road bridge
nitrite-nitrogen	<.03				3/1/01	old road bridge
total nitrogen	2.86				3/1/01	old road bridge
nitrate nitrogen	2.33	2.38			3/1/01	old road bridge
nitrite-nitrogen	0.05				3/1/01	old road bridge
nitrate nitrogen	1.4	1.415			5/3/99	old road bridge
nitrite-nitrogen	<.03				5/3/99	old road bridge
nitrate nitrogen	3.2	3.25			5/4/99	old road bridge
nitrite-nitrogen	0.05				5/4/99	old road bridge
total nitrogen	0.2				5/4/99	old road bridge
nitrate+nitrite(N)	7.8	7.8			10/23/01	old road bridge
nitrate-nitrogen	5.5				2/15/01	at Bouquet Canyon
nitrite-nitrogen	<.03				2/15/01	at Bouquet Canyon
nitrate-nitrogen	2.9				2/20/01	at Bouquet Canyon
nitrite-nitrogen	<.03				2/20/01	at Bouquet Canyon
total nitrogen	5.33				3/1/01	at Bouquet Canyon
total nitrogen	13.9				3/1/01	at Bouquet Canyon
nitrate nitrogen	12.3				3/1/01	at Bouquet Canyon
nitrite-nitrogen	<.03				3/1/01	at Bouquet Canyon
nitrate-nitrogen	0.27				3/1/01	at Bouquet Canyon
nitrite-nitrogen	0.09				3/1/01	at Bouquet Canyon
nitrate-nitrogen	3.13				3/1/01	at Bouquet Canyon
nitrite-nitrogen	0.06				3/1/01	at Bouquet Canyon
nitrate-nitrogen	3.5				5/4/99	at Bouquet Canyon
nitrite-nitrogen	0.2				5/4/99	at Bouquet Canyon

LACSD data from receiving water station RC as submitted for 97-00									N3+n2=								
NITRATE (AS	LIQUID		2.15	MG/L		G	8/19/97	11:30	SCR-RC	2.16		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.01	MG/L		G	8/19/97	11:30	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		3.54	MG/L		G	11/5/97	11:30	SCR-RC	3.55		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.01	MG/L		G	11/5/97	11:30	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		3.03	MG/L		G	2/11/98	11:35	SCR-RC	3.03		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.05	MG/L		G	2/11/98	11:35	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		2.32	MG/L		G	5/21/98	11:30	SCR-RC	2.43		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.11	MG/L		G	5/21/98	11:30	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		3.54	MG/L		G	8/19/98	10:50	SCR-RC	3.57		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.03	MG/L		G	8/19/98	10:50	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		5.02	MG/L		G	11/5/98	10:45	SCR-RC	5.09		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.07	MG/L		G	11/5/98	10:45	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		3.77	MG/L		G	2/23/99	10:35	SCR-RC	3.96		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.18	MG/L		G	2/23/99	10:35	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		4.39	MG/L		G	5/26/99	10:45	SCR-RC	4.57		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.18	MG/L		G	5/26/99	10:45	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		6.74	MG/L		G	8/3/99	11:50	SCR-RC	6.92		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.18	MG/L		G	8/3/99	11:50	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		5.68	MG/L		G	11/11/99	11:30	SCR-RC	5.79		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.08	MG/L		G	11/11/99	11:30	SCR-RC			SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRATE (AS	LIQUID		5.69	MG/L		G	2/3/00	10:55	SCR-RC	6.14		SANTA CLA	SC-6	403.51	SANTA CLA	SANTA CLA	LOS ANGEL	Valencia WWRP, NPDES
NITRITE (AS	LIQUID		0.45	MG/L		G	2/3/00	10:55	SCR-RC									
										count	count							
								total #		11	11							
										>10	>5							
								# exceed		0	4							
								% exceed		0	0.363636							

CSDLA data sent as part of NPDES reports but not submitted for 303(d)

Parameter	Date	Value
Receiving water station RB		
Nitrate	Feb-97	4.960
Nitrate	May-97	1.490
Nitrate	Aug-97	2.990
Nitrate	Nov-97	2.960
Nitrate	Feb-99	0.200
Nitrate	Feb-99	0.410
Nitrate	May-99	0.240
Nitrate	May-99	0.300
Nitrate	Aug-99	0.470
Nitrate	Aug-99	2.880
Nitrate	Nov-99	0.810
Nitrate	Nov-99	1.240
Nitrate	Feb-00	<0.05
Nitrate	May-00	1.870
Nitrate	Aug-00	1.410
Nitrate	Nov-00	0.790
Nitrate	Feb-01	1.610
Nitrate	May-01	1.370
Nitrate	Aug-01	1.060
Nitrate	Nov-01	0.510
Nitrite	Feb-97	1.580
Nitrite	May-97	1.020
Nitrite	Aug-97	1.110
Nitrite	Nov-97	0.963
Nitrite	Feb-99	0.988
Nitrite	Feb-99	0.712
Nitrite	May-99	0.912
Nitrite	May-99	0.690
Nitrite	Aug-99	1.220
Nitrite	Aug-99	2.980
Nitrite	Nov-99	3.540
Nitrite	Nov-99	3.090
Nitrite	Feb-00	2.280
Nitrite	May-00	2.390
Nitrite	Aug-00	2.130
Nitrite	Nov-00	1.760
Nitrite	Feb-01	1.830
Nitrite	May-01	2.030
Nitrite	Aug-01	2.120
Nitrite	Nov-01	1.660

Groundwater station T4N-16W-16R1		
nitrate	2/20/97	5.43
nitrite	2/20/97	<.01
nitrate	8/7/97	7.85
nitrite	8/7/97	NA
nitrate	Feb-01	5.21
nitrite	Feb-01	<.01
nitrate	Aug-01	5.86
nitrite	Aug-01	<.01
nitrate		
number	19	
exceed	0	
impair%	none	
nitrite		
number	20	
exceed	15	
impair%	0.75	

New Data Submitted CSDLA														
Parameter	Test Materia	Qualifier	Result	Units	MDL	Sample Meti	Sample Date	Sample Tim	Station Nam	Latitude	Longitude	Waterbody	ream Reach	Hydrologic
NITRATE+nitrite (AS NITROGEN)			1.19	MG/L			2/23/99	11:30	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			1.15	MG/L			5/26/99	11:30	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			1.69	MG/L			8/3/99	11:35	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			4.35	MG/L			11/11/99	11:30	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			2.33	MG/L			2/3/00	10:50	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			4.26	MG/L			8/17/00	10:45	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			3.54	MG/L			8/23/00	10:35	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			2.55	MG/L			11/21/00	10:45	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			3.44	MG/L			2/16/01	11:50	SCR-Rb			SANTA CLA	SC-6	403.51
NITRATE+nitrite (AS NITROGEN)			3.4	MG/L			5/21/01		SCR-Rb					
NITRATE+nitrite (AS NITROGEN)			3.18	MG/L			8/21/01		SCR-Rb					
NITRATE+nitrite (AS NITROGEN)			1.5	MG/L			10/31/01		SCR-Rb					
NITRATE+nitrite (AS NITROGEN)			2.17	MG/L			11/7/01		SCR-Rb					
NITRATE+nitrite (AS NITROGEN)			0.16	MG/L			11/15/01		SCR-Rb			**below outfall**		
NITRATE+nitrite (AS NITROGEN			5.15	MG/L			6/29/00		old road bridge			count	14	
NITRATE+nitrite (AS NITROGEN			5	MG/L			7/27/00		old road bridge			exceed	0	
NITRATE+nitrite (AS NITROGEN			4.56	MG/L			8/28/00		old road bridge			impair	0	
NITRATE+nitrite (AS NITROGEN			5.68	MG/L			9/29/00		old road bridge			**Hwy 99**		
NITRATE+nitrite (AS NITROGEN			6.06	MG/L			11/2/00		old road bridge			count	19	
NITRATE+nitrite (AS NITROGEN			4.96	MG/L			11/27/00		old road bridge			exceed	5	
NITRATE+nitrite (AS NITROGEN			6.24	MG/L			12/21/00		old road bridge			impair	0.263158	
NITRATE+nitrite (AS NITROGEN			2.79	MG/L			1/23/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			2.24	MG/L			2/20/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			2.67	MG/L			3/15/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			4.52	MG/L			5/2/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			3.12	MG/L			5/29/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			6.61	MG/L			7/24/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			4.29	MG/L			8/1/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			2.63	MG/L			8/27/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			1.78	MG/L			9/25/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			1.73	MG/L			10/5/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			1.87	MG/L			11/7/01		old road bridge					
NITRATE+nitrite (AS NITROGEN			2.36	MG/L			12/12/01		old road bridge					

dates of sampling	2/23/99-12/12/01
number	33
min	0.16
mean	3.308182
max	6.61
median	3.12
standard deviation	1.635941
No. of samples above 10 mg/L (objective)	0
%. of samples above 10 mg/L	0
No. of samples above 5 mg/L(downstream)	5
% of samples above 5 mg/L	0.151515

studies on the river this fiscal year. The focus of this work will be to relate land use to discharge characteristics and determine background concentrations for TMDL pollutants. It is also likely we will receive additional EPA funding for monitoring and modeling data also for expenditure in this fiscal year. The focus of the study is to fill gaps in the existing data base and to gather input data for advanced water quality modeling. The scope of work statements for these studies is not available to me today, but I expect I will be able to provide them to you next week. These plans also include some cost estimates.

Dates
UCLA is beginning their study with some orientation tours for staff. I expect to accompany them on most of these field trips and collect samples on several. We are scheduled to work in the upper Santa Clara watershed on Thursday, August 16, Thursday, August 23, Tuesday August 28, and Wednesday August 29. As I mentioned, we would be happy to have someone from your organization accompany us on these or any field outing. These are the days when we would like access to your property. I also expect that the UCLA team and I will be establishing a specific sampling schedule for the following year and we will forward this schedule to you as soon as possible for our coordinated planning.

Insurance.
State agencies are self insured and although our legal counsel is not in today, I am confident we will be able to provide you with evidence of liability insurance that you may keep on file for future RWQCB employees. UCLA also carries insurance on its employees and I will let them know that you would like evidence of this coverage

Data
The data we collect is available to the public once we receive the information back from the laboratory and I will be happy to provide you with copies as soon as it is available to me.

Access
You asked me to give you some time to arrange a permit to allow us access and I am happy to provide additional information as soon as is possible. I also understand that you do not consider the memorandum of understanding for sampling which Newhall signed on March 2000 binding because the objective change resolution for the Upper Santa Clara did not pass in December 2000. I reviewed the MOA and the accompanying letter from Mr. Zimmer and I cannot find a reference linking the agreement to any specific resolution. In fact, the agreement states that the undersigned have made "a commitment to work together to assess the conditions of the upper and middle reaches of the river." The agreement also states that Newhall wishes to participate in rountine sampling efforts and I would look forward to having any assistance which seems appropriate to you. I am appreciate your efforts to expedite this matter and clarify how sampling can proceed.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html ***

CC: "s green CSD (E-mail)" <sgreen@lacsd.org>, "v conway (E-mail)" <vconway@lacsd.org>, Dennis Dickerson <DDICKERS@rb4.swrcb.ca.gov>, Deborah Smith <Dsmith@rb4.swrcb.ca.gov>, Jonathan Bishop <JBISHOP@rb4.swrcb.ca.gov>, Shirley Birosik <SBIROSIK@rb4.swrcb.ca.gov>, "J Fosselman (E-mail)" <jfosselman@santa-clarita.com>, "J Lambert (E-mail)" <jlambert@santa-clarita.com>, <stevelee@ucla.edu>

From: Mark Subbotin <msubbotin@newhall.com>
To: "e erickson (E-mail)" <eerickso@rb4.swrcb.ca.gov>
Date: Mon, Sep 10, 2001 11:30 AM
Subject: Water quality sampling

Please fax your self insurance information again. Unfortunately it has been misplaced in our office and in spite of turning the place upside down, I can't find it.

CC: "j bishop RWQCB (E-mail)" <jbishop@rb4.swrcb.ca.gov>, "Shirley Birosik (E-mail)" <SBIROSIK@rb4.swrcb.ca.gov>

From: Mark Subbotin <msubbotin@newhall.com>
To: "'Elizabeth Erickson" <eerickso@rb4.swrcb.ca.gov>
Date: Mon, Sep 10, 2001 1:50 PM
Subject: RE: Water quality sampling

Elizabeth, I don't have the full scope of work. Please email me the final proposal between UCLA and RWQCB, and we will need in writing from RWQCB agreement to provide all the information obtained from the site visits. I will ask our insurance people if the self insurance will suffice or not and let you know ASAP.

-----Original Message----
From: Elizabeth Erickson [mailto:eerickso@rb4.swrcb.ca.gov]
Sent: Monday, September 10, 2001 11:47 AM
To: msubbotin@newhall.com
Cc: Deborah Smith; Jonathan Bishop; Melinda Becker; Samuel Unger
Subject: Re: Water quality sampling

Hello Mark,
Yes I will resend this information. I believe we have provided all the information you requested to support our access request. If not, please let me know.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html ***

>>> Mark Subbotin <msubbotin@newhall.com> 09/10/01 10:46AM >>>
Please fax your self insurance information again. Unfortunately it has been misplaced in our office and in spite of turning the place upside down, I can't find it.

CC: Deborah Smith <Dsmith.RB4Post.Region4@rb4.swrcb.ca.gov>, Jonathan Bishop <JBISHOP.RB4Post.Region4@rb4.swrcb.ca.gov>, Melinda Becker <mbecker.RB4Post.Region4@rb4.swrcb.ca.gov>, Samuel Unger <sunger.RB4Post.Region4@rb4.swrcb.ca.gov>

From: Mark Subbotin <msubbotin@newhall.com>
To: "e erickson (E-mail)" <eerickso@rb4.swrcb.ca.gov>
Date: Tue, Sep 18, 2001 10:52 AM
Subject: Insurance

Elizabeth, the State's self-insurance coverage is acceptable to Newhall for State employees, but it will not cover UCLA students, and as was done for Shirley's UC Riverside folks, separate coverage will be needed for them. I have not yet seen the scope of work you indicated you would forward.

From: Mark Subbotin <msubbotin@newhall.com>
To: "'Elizabeth Erickson'" <eerickso@rb4.swrcb.ca.gov>
Date: Wed, Sep 19, 2001 11:11 AM
Subject: RE: Insurance

when you say Blue Cut, where do you mean exactly? Can you send me a map or designate on USGS quad sheet?

----Original Message-----
From: Elizabeth Erickson [mailto:eerickso@rb4.swrcb.ca.gov]
Sent: Tuesday, September 18, 2001 2:02 PM
To: msubbotin@newhall.com
Subject: Re: Insurance

Hello Mark.

Thanks for the info. After reviewing the contract with UCLA at your request, I find it only specifies 'technical studies'. As a result we provided an overview of those studies at the September 6, 2001 meetings. Because you have requested additional detail I copy an email sent yesterday to UCLA which finalizes the sample locations. I will also forward an email sent yesterday to LACSD which lists the parameters we will be sampling. This is more specific than any of the documents you have requested and I am confident it will suffice to characterize our sampling efforts. As we are subject to the public information act, you can get all of this data as soon as we receive it back from the lab.

This is the first I have heard that you wish insurance for the UCLA folks. As I mentioned in my last email, I assumed that you had informed us of any additional information you needed for your consideration of our access request. The UCLA folks have provided this information for others and I am sure that we can make it available to you promptly. In the mean time, please begin any administrative process required to process our request for access to the Blue Cut location before the end of October on my assurance that you will receive this insurance information promptly from UCLA.

Elizabeth Erickson

To: Internet.mime."stevelee@ucla.edu", REGION4:[ucla.edu]:Rambrose
CC: Shirley Birosik, Jonathan Bishop, Tracy Patterson, Samuel Unger

Subject: October 2001 Santa Clara sampling plan
Message: Great to hear from you. I appreciate your thorough and professional efforts in establishing the sampling sites for the UCLA study in the Santa Clara River.

Here is the list :
1)Soledad Canyon at Stickleback critical habitat (reference)
2)Below Bouquet Canyon Dam (reference)
3)Bouquet below Lenny Rd (rural/horse property)
4)Bouquet below Plum Canyon (urban)
5)SAC Highway 99 (above waste treatment plant)
6)SC Magic Mtn (below waste treatment plant)
7)SC Blue Cut or Camulous Ranch (agricultural)

8)Todd Baranca at Foothill (un-used irrigation water and rising groundwater)

9)Todd Baranca at Jail (agriculture)

Schedule:
Todd Baranca(2 sites)- first week in October, awaiting growers return call for exact time
Magic Mountain (1 site)-Third or fourth week in October, at time of LACSD sampling
Blue Cut or Camulous (1 site): as soon as available
All others: as soon as possible

Also we will compare with reference data gathered in Sespe, Santa Paula, San Francisquito (October 2001).

Hoep this is it. Glad to hear that the sampling protocol is coming together.

<<< Mark Subbotin <msubbotin@newhall.com> 9/18 10:52a >>>
Elizabeth, the State's self-insurance coverage is acceptable to Newhall for State employees, but it will not cover UCLA students, and as was done for Shirley's UC Riverside folks, separate coverage will be needed for them. I have not yet seen the scope of work you indicated you would forward.

From: "Heather Merenda" <HMERENDA@santa-clarita.com>
To: <eerickso@rb4.swrcb.ca.gov>, <bottorffm@vcss.k12.ca.us>
Date: 7/30/02 3:37PM
Subject: Monitoring stations

Hello to you both! Had some conversations with Mark Subbotin from Newhall Land. He was concerned that we hadn't communicated well enough where the City's property is on the Santa Clara River near the bridge. Please see the attached map that Mark provided. Also, and FYI, probably within a year, the City will actually get a multi purpose trail that will run near the stream close to the bridge. So perhaps when the Citizen Monitoring funds are ready, so will the public trail. Then you could sample from the trail. Tom Reilly from our Parks and Rec Department said he'd be happy to set up a tour of how to get to the "closest to the bridge" part of the current City property, as you have to take some equestrian trails to get there currently. Please let me know, as Mark seemed really concerned about this and I want to make sure I'm giving you good information and have great successes with the Citizen Monitoring program.

Thanks!

Heather Lea Merenda, Sustainability Planner
City of Santa Clarita
23920 Valencia Blvd. #300
Santa Clarita CA 91355
phone 661-284-1413
fax 661-255-4356

CC: "Jason Smisko" <JSMISKO@santa-clarita.com>

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Secretary for Environmental Protection

California Regional Water Quality Control Board

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Gray Davis
Governor

August 29, 2002

To: Renee DeShazo

From: Elizabeth Erickson

Subj: Response to Comments for 2000 303(d)listing for Nitrate/Nitrite and Organic Enrichment/DO for Reach 6 (EPA Reach 8) of the Santa Clara River

The County Sanitation Districts of Los Angeles(CSDLA) submitted a comment letter dated June 14, 2002 which included new data and requested that Reach 6 (EPA Reach 8) be delisted. I have completed additional analysis of the new data, the previous data, and the components of the best professional judgement of the recommendation to retain the listing for nitrate/nitrite and I summarize these results in detail below. A summary of comments for the nutrient listing questions on this reach is also provided.

Summary

The new data set was collected over only two years of the sample period. Some submitted data was incorrectly attributed to this reach, while it was collected in the adjacent downstream reach which has more dilution.

The downstream reach has a lower objective (5 mg/L) than the reach for which delisting is requested. Of eleven samples taken in the downstream reach immediately over the reach boundary (station RC), 4 or 36% of the nitrate-nitrite as nitrogen exceeded the 5 mg/L objective, demonstrating that the nutrient levels in the upstream reach are high enough to prevent attainment of the objective at every location in the downstream reach.

A nutrient TMDL is currently underway in this reach proposed for delisting and ongoing sampling efforts and visual observations show the presence of algae and nitrate-nitrite and nitrogen exceedances in this reach.

Although the discharger claims that the ammonia specific objective in the Basin Plan will require compliance with the ammonia objective by 2003, this requirement will not address nitrate, DO or organic enrichment objectives. Further, the discharger has not submitted any data or reports confirming progress to attain the ammonia objective at their plant.

Based on the insufficient data set and the uncertainty in achieving the ammonia objectives, Regional Board staff recommend retaining the listings for nitrate-nitrite, organic enrichment/DO in the reach.

Location and Objectives

Reach 6 (EPA Reach 8) lies between the Bouquest Canyon Bridge and the west pier of the Highway 99 bridge (see figure) . It receives flow from CSDLA's Saugus Water Reclamation Plant, Santa Clara River (dry), South Fork of the Santa Clara River(dry), Bouquet Creek and

rising groundwater. The Santa Clara River and the South Fork of that river are both dry at this location, but maintain underflow in alluvium with unusually high transmisivity. The Santa Clara River becomes a gaining river at the downstream end of the reach which lies within the Holser and San Gabriel Fault zones. The faults act as a water barrier which force up the underflow and other groundwater from the majority of the upper Santa Clara Watershed.

The nitrate plus nitrite objective in Reach 6 (EPA Reach 8) is 10mg/L. The nitrite and nitrate objectives come from the beneficial use for groundwater reacharge and are 1 mg./L and 10 mg/L respectively. The reaches immediately downstream and upstream have a lower nitrate plus nitrite objective of 5 mg/L. These also represent historical conditions in the river.

Impairment

The nitrate plus nitrite levels represented in the 2000 303(d) data in Reach 6 (EPA Reach 8) are high enough to prevent attainment of the objective in the downstream reach which is listed for nitrate/nitrite, even if the newly submitted data show that Reach 6 does not exceed the objectives for this nutrient measurement alone. In fact, the data submitted for the 303(d) analysis of that downstream reach comes from within a half mile of the downstream end of the Reach 6 (EPA Reach 8). At that Receiving Water Station RC, 36% of the samples exceed the objective for Reach 5 (EPA Reach 7) of 5 mg/L.

The entire data set submitted for analysis does not represent an even distribution in time or space, but provides data in a biased manner. As an example, the new data submitted for Reach 6 (EPA Reach 8) was collected at two locations, a receiving water station below the Saugus outfall, at the extreme upper end of the reach, and at the Highway 99 bridge, the extreme downstream end of the reach. While CSDLA is correct in that the two data sets together show attainment of the 10 mg/L standard for nitrate plus nitrite in Reach 6 (EPA Reach 8), the data collected at the lower end of the reach included half of the samples, but only 1 ½ years of data. In this small data set alone, 26% of the nitrate plus nitrite data exceeded the 5 mg/L objective of the downstream reach (which lies within a half mile) but meets the 10 mg/L for the reach in question. In the upper end of the reach, a full 4 years of data were reported. Finally, in the comment letter by CSDLA, as much as half of the data presented graphically to demonstrate attainment of the objectives comes from the receiving water station RC, which lies in the downstream reach. These data biases are further demonstrated by comparison with data collected by Regional Board staff, but not used in the 303(d) analysis. Among the 23 samples collected throughout the reach, 14% of the nitrate plus nitrate values in Reach 6 (EPA Reach 8) lay between the downstream objective of 5 mg/L and the objective of 10 mg/L and 12% of the nitrate samples exceeded the objective of 10 mg/L.

Reach 6 (EPA Reach 8) should be listed for nitrite. CSDLA did not include all of the water quality data submitted for their NPDES permit No. CA005431 for the 303(d) analysis and in fact not all of this data was used in the assessment. Receiving water levels in Reach 6 (EPA Reach 8) were evaluated for this memo as reported between 1997 and 2001. Of 20 nitrite samples taken,

15 exceeded the criteria of 1 m/gL, for 75% exceedance. Because this analysis postdates the submission of listing recommendations for 303(d) a new listing has not been recommended, but our permitting group has been asked to prepare a Notice of Violation.

Reach 6 (EPA Reach 8) should be listed for algae. Algae problems have been documented in both Reach 5 and 6. Figures are attached which demonstrate that in October 2001 for Reach 5 and in June 2002 for Reach 6, the algae problem probably exceed the RWQCB-LA Basin Plan Criteria (pg3-8) which states that " waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or advsersely affects beneficial uses." Some of these algae problems, including chorophyll-A mass measurements were documented in October 2001 and should be publically available this year. Access problems, as described below, have prevented further documentation of these observations and the lack of confirmation is the reason Reach 6 (EPA Reach 8) was not recommended for algae listing in the 2000 303(d) listing cycle.

Reach 6 (EPA Reach 8) might also be listed for coliform. RWQCB samples for coliform were collected on May 4, 1999, but were not evaluated for this 303(d), partially due to the difficulties with duplicating the sample due to access problems. On that date, 9000 MPN total coliform was recorded at Bouquet Canyon bridge and 700 was recorded at Highway 99. Additional sampling of these high levels is expected to demonstrate a coliform impairment.

Public Verification of Data Used for Listing

The RWQCB-LA has not be able to access the site sufficiently to verify the water quality information used in this request for delisting. As two examples of these continuous problems, a RWQCB funded study by UCLA, which was designed to document nutrient impairments, requested access of the land owner, Newhall Land and Farming, on Aug 13, 2001 for an October study after the Newhall had signed an MOU agreeing to participate in monitoring. The samplers were ultimately asked to leave the property before completing their assessement of Reach 6 (EPA Reach 8) when they accompanied CSDLA during their sampling of the receiving water stations (see emails attached). Citizen monitoring groups were also denied access to this property in June 2002. When the attached photos were finally taken on City of Santa Clarita property in that month, Newhall responded by saying that access to the sampling point would not be allowed. This problem has been experienced by other agencies, and resulted in an incomplete assessment of the water quality problems in the area. For example, approval of Newhall's development plans by the Los Angeles County Supervisors was delayed this summer after a Fish and Game search warrant revealed that they had illegally graded endangered spine flowers.

Attachments:

Figure: location map

Picture 1: algae at Receiving Water Station RD below Valencia WRP Outfall, October 2001.
Picture 2: Algae looking upstream from historic Railroad Bridge site between MCBean Parkway and San Fransisquito Creek on Santa Clara River, June 30, 2002-08-29
Picture 3: Algae beneath historic Railroad Bridge site between MCBean Parkway and San Fransisquito Creek on Santa Clara River, June 30, 2002-08-29

Tabel New data submitted
Table LACSD data from RC
Table NPDES report data
Table Regional Board Data not submitted for 303(d) listing

Emails from Mark Subbotin (Newhall Land) Aug 14, September 10, 18, and 19, 2001.
Emials for Heather Merenda, City of Santa Clarita, July 30, 2002.

From: Elizabeth Erickson
To: Samuel Unger
Date: 9/11/02 9:10AM
Subject: 303(d) santa clara

Craig Wilson called me this morning and asked me to review new DO data for the upper Santa Clara River which I received on August 23. Please advise.

Background:
LACSD asked to delist reach 6 (EPA Reach 8) for DO and provided a summary of about 200 data points collected between 1999 and 2001 before the deadline for submission. Renee forwarded me this summary and we agreed that I couldn;t evaluate it without looking at the individual data points. I was speaking with Sharon Landau on another issue and mentioned that I did not have the individual data points. She had them sent to me after the date for data submission.

I saw Sharon Landau at the Santa Clara nutrient meeting on Monday and appologized if I misled her, but that I couldn;t evaluate the data since it was not in the original package. I explained that I had tried to get Regional Board data included which arrived at Craig;s office the day after the closing date and was told this data would not be included.

Today Craig called to say he had heard from Sharon Green, who wanted to know why we had not evaluated the data.

My recommendation is that we extend the work I began for Renee and Melenee which looked at all the nutrient listings for Reach 6 (EPA Reach 8), including the new DO data and all the Regional Board data. The result will likely be 1) new listing for nitrite, 2) delist for DO and nitrate-nitrite, 3)maintain listing for organic enrichment, 4) maintain listing for ammonia and 5) Notice of Violation for nitrite.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html ***

CC: Craig J. Wilson; Jonathan Bishop; Melenee Emanuel; Melinda Becker; Renee DeShazo

California Regional Water Quality Control Board, Los Angeles Region

McGrath Beach
Beach Closures - (Delisting)

Summary of Proposed Action

McGrath Beach State Park (McGrath Beach) is a beach located just south of the Santa Clara River. McGrath Beach is proposed to be **removed** from the 2002 303(d) listing of water quality limited segments as it is no longer impaired for beach closures. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303 (d) Listing/TMDL Information

Waterbody Name	**McGrath Beach**	**Pollutants/Stressors**	**Beach Closures**
Hydrologic Unit	403.11	**Source(s)**	NA
Total Waterbody Size	1.7 miles along the coast	**TMDL Priority**	Analytical Unit 23
Size Affected	1.7 miles along the coast	**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Entire beach	**TMDL End Date (Mo/Yr)**	2003

Watershed Characteristics

McGrath Beach State Park (McGrath Beach) is a beach located just south of the Santa Clara River. The beach is on California State Parks land, adjacent to a campground. It starts just south of the Santa Clara River Estuary, past McGrath Lake outfall, and extended to the Reliant Mandalay Energy Generating Station outfall. The habitat around the nearby lake is considered quite unique and it is utilized by a large number of over-wintering migratory birds.

Water Quality Objectives 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 Regional Board follows the U.S. EPA criteria which are:
- Fully Supporting - No beach closures in the previous three years
- Partially Supporting - averaging 1 beach closure per year, lasting less than one week long per closure.

Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Beach Closure Data for McGrath Beach

Dates of Observance	5/99-9/00
Number (Percent) above or below Objective	No beach closures in last 3 years.

Potential Sources

NA

References

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

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 13 - Conejo Creek South Fork
Dissolved Oxygen (Delisting)

Summary of Proposed Action

Calleguas Creek Reach 13, Conejo Creek South Fork, extends from the confluence with the Calleguas Creek Reach 10, Hill Canyon to the headwaters in Conejo Creek South Fork. Calleguas Creek Reach 13 is proposed to be **removed** from the 2002 303(d) listing of water quality limited segments as it is no longer impaired due to low dissolved oxygen. The beneficial use affected by this action is aquatic life.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Calleguas Creek Reach 13 - Conejo Creek South Fork**	**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	10.5 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 13, Conejo Creek South Fork, extends from the confluence with the Calleguas Creek Reach 10, Hill Canyon to the headwaters in Conejo Creek South Fork. It runs through the City of Thousand Oaks.

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 13 is designated as having intermittent warm freshwater habitat.

In the previous water quality assessment (WQA), current Calleguas Creek Reaches 9A, 9B, 10, 12, and 13 were considered one reach. All of these reaches were listed as impaired due to data collected at one site. That site was re-evaluated in this WQA and found to be unimpaired. Data in Reach 9A was also evaluated separately and found to be unimpaired. The remaining reaches use one data set to evaluate and remove sites 9B, 10, 12, and 13. This data is shown in the Data Assessment section.

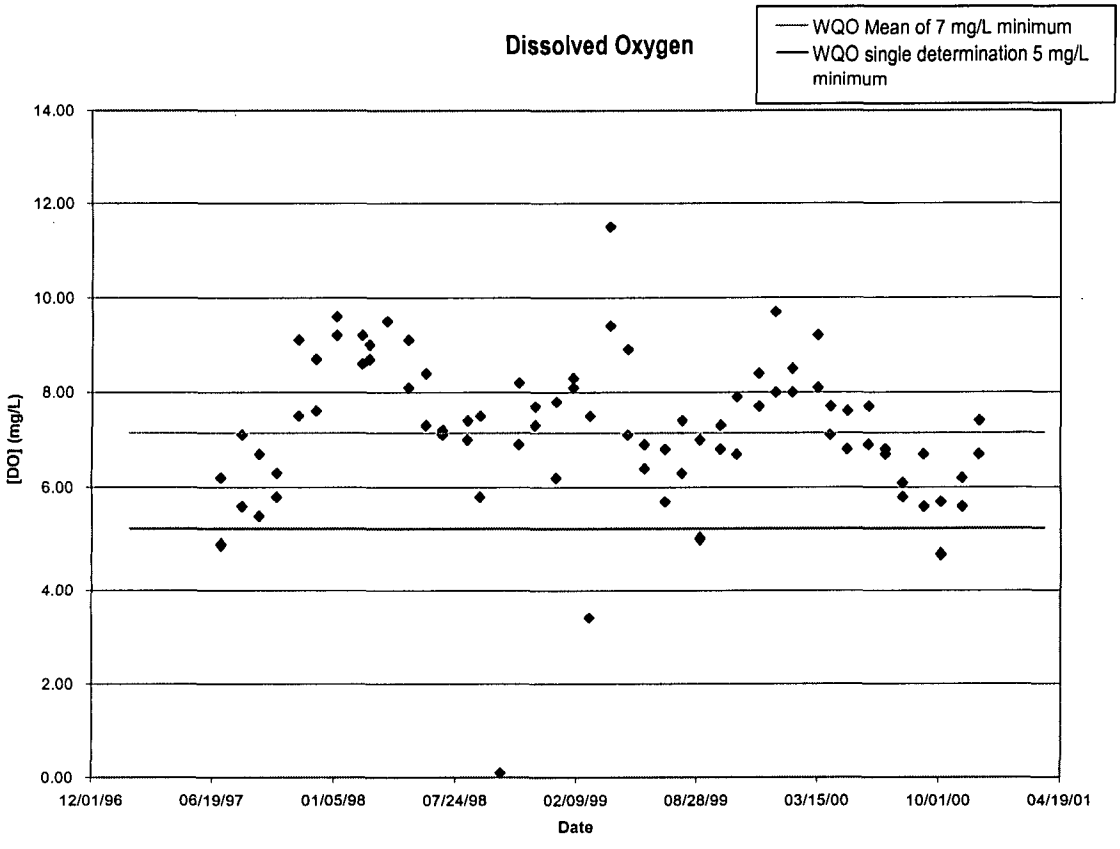
Beneficial Uses Affected

- Warm freshwater habitat

Data Assessment

Table 2. Summary of Dissolved Oxygen for Calleguas Creek Reach 13 - Conejo Creek South Fork.

Dates of Sampling	7/97-12/00
Number of Samples (n)	83
Minimum Data Value	0.1 mg/L
Maximum Data Value	11.5 mg/L
Median Data Value	7.3 mg/L
Arithmetic Mean Value	7.15 mg/L
Standard Deviation	1.74 mg/L
Number (Percent) above Objective	5 or 6% are less than 5 mg/L.



Potential Sources

NA

References

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

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 9B
Dissolved Oxygen (Delisting)

Summary of Proposed Action

Calleguas Creek Reach 9B, extends from the Camrosa Diversion, Reach 9A to the start of Calleguas Creek Reach 10, Hill Canyon. Calleguas Creek Reach 9B is proposed to be **removed** from the 2002 303(d) listing of water quality limited segments as it is no longer impaired due to low dissolved oxygen. The beneficial use affected by this action is aquatic life.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Calleguas Creek Reach 9B	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	5.8 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 9B, extends from the Camrosa Diversion, Reach 9A, to the start of Calleguas Creek Reach 10, Hill Canyon. It runs through the City of Thousand Oaks.

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 9B is designated as having intermittent warm freshwater habitat.

In the previous water quality assessment (WQA), current Calleguas Creek Reaches 9A, 9B, 10, 12, and 13 were considered one reach. All of these reaches were listed as impaired due to data collected at one site. That site was re-evaluated in this WQA and found to be unimpaired. Data in Reach 9A was also evaluated

separately and found to be unimpaired. The remaining reaches use one data set to evaluate and remove sites 9B, 10, 12, and 13. This data is shown in the Data Assessment section.

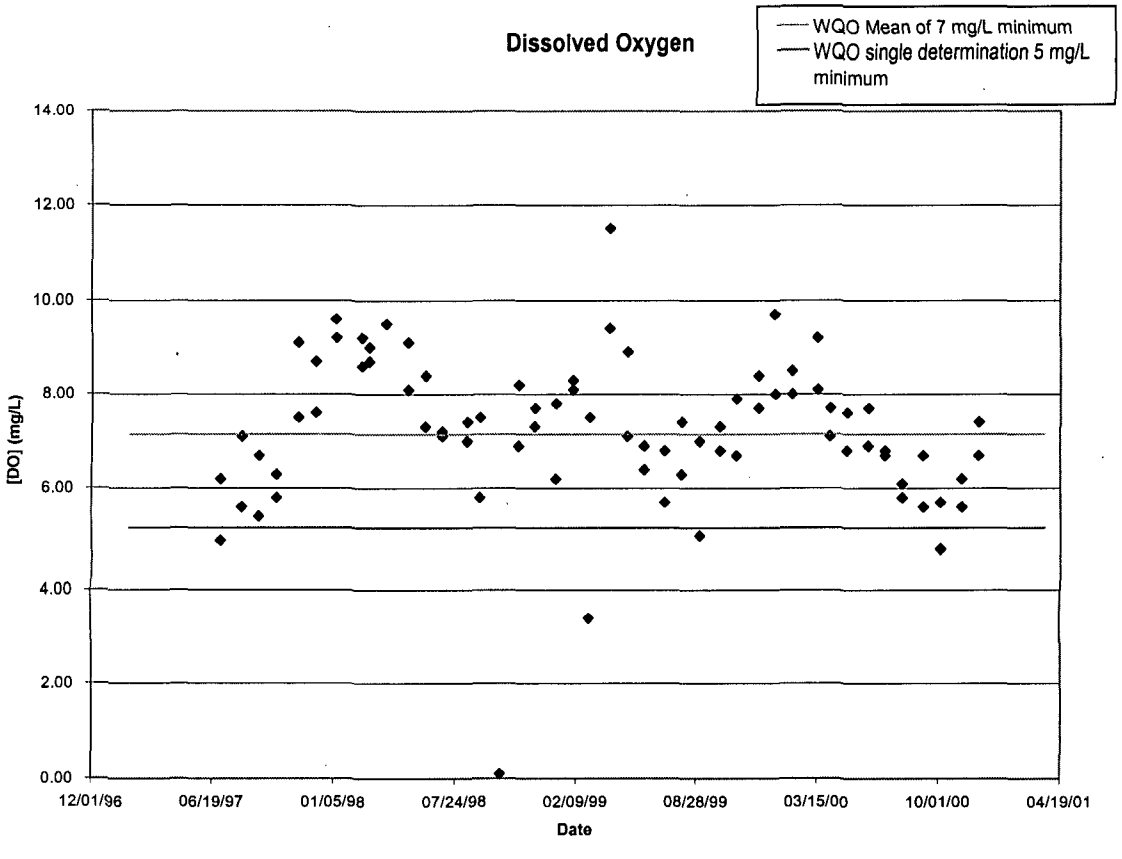
Beneficial Uses Affected

- Warm freshwater habitat

Data Assessment

Table 2. Summary of Dissolved Oxygen for Calleguas Creek Reach 9B.

Dates of Sampling	7/97-12/00
Number of Samples (n)	83
Minimum Data Value	0.1 mg/L
Maximum Data Value	11.5 mg/L
Median Data Value	7.3 mg/L
Arithmetic Mean Value	7.15 mg/L
Standard Deviation	1.74 mg/L
Number (Percent) above Objective	5 or 6% are less than 5 mg/L.



Potential Sources

NA

References

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

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 12
Dissolved Oxygen (Delisting)

Summary of Proposed Action

Calleguas Creek Reach 12, Conejo Creek North Fork, extends from just upstream of Hill Canyon Treatment Plant and the convergence with South Fork to the headwaters in the North Fork. Calleguas Creek Reach 12 is proposed to be **removed** from the 2002 303(d) listing of water quality limited segments as it is no longer impaired due to low dissolved oxygen. The beneficial use affected by this action is aquatic life.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Calleguas Creek Reach 12 - Conejo Creek North Fork**	**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	5.7 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 12, Conejo Creek North Fork, extends from just upstream of Hill Canyon Treatment Plant and the convergence with South Fork to the headwaters in the North Fork. It runs through the City of Thousand Oaks.

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 12 is designated as having intermittent warm freshwater habitat.

In the previous water quality assessment (WQA), current Calleguas Creek Reaches 9A, 9B, 10, 12, and 13 were considered one reach. All of these reaches were listed as impaired due to data collected at one site. That site was re-evaluated in this WQA and found to be unimpaired. Data in Reach 9A was also evaluated separately and found to be unimpaired. The remaining reaches use one data set to evaluate and remove sites 9B, 10, 12, and 13. This data is shown in the Data Assessment section.

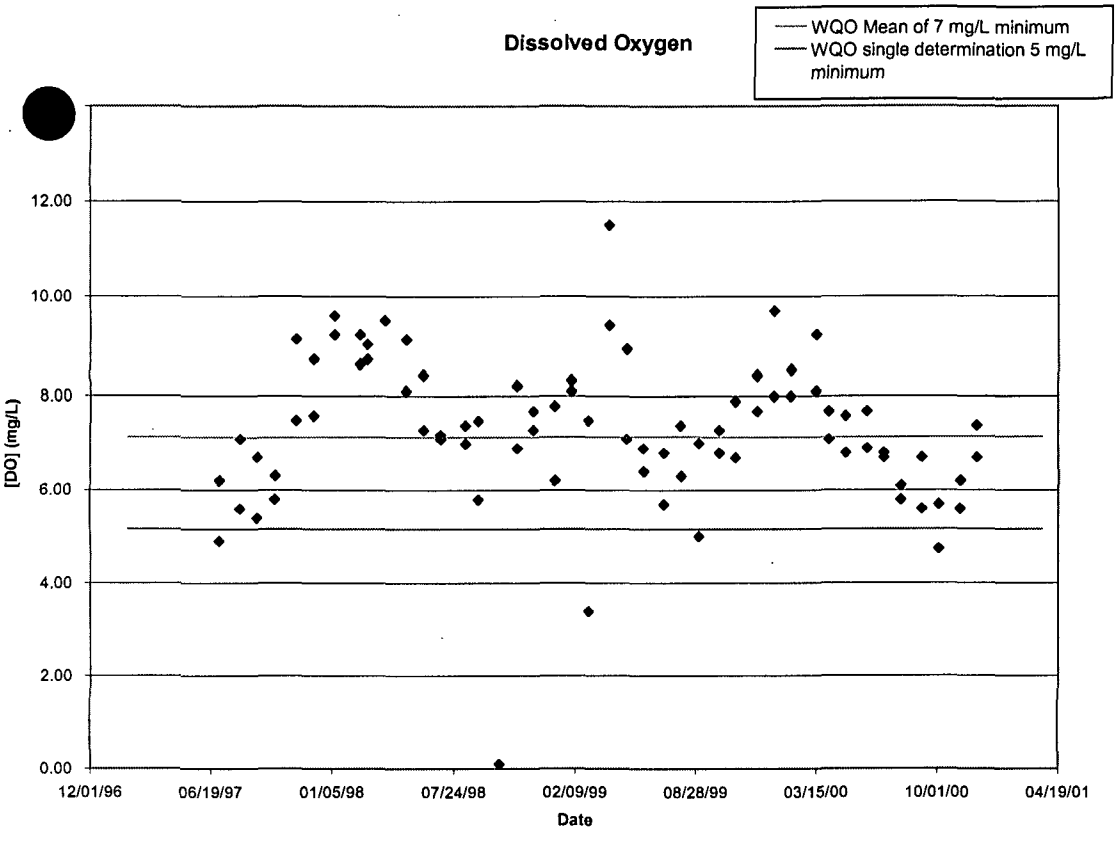
Beneficial Uses Affected

- Warm freshwater habitat

Data Assessment

Table 2. Summary of Dissolved Oxygen for Calleguas Creek Reach 12 - Conejo Creek North Fork.

Dates of Sampling	7/97-12/00
Number of Samples (n)	83
Minimum Data Value	0.1 mg/L
Maximum Data Value	11.5 mg/L
Median Data Value	7.3 mg/L
Arithmetic Mean Value	7.15 mg/L
Standard Deviation	1.74 mg/L
Number (Percent) above Objective	5 or 6% are less than 5 mg/L.



Potential Sources

NA

References

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

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 EDLs which no longer represent valid assessment guidelines.
- Delist copper in tissue since the listing was based on EDLs which no longer represent valid assessment guidelines.
- Delist lead in tissue since the listing was based on EDLs which no longer represent valid assessment guidelines.
- Delist DDT in sediment since sediment concentrations have dropped below sediment quality guidelines ERM and/or PEL 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

ERM and/or PEL
EDLs have been determined to be an insufficient basis for impairment determination.

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 (95-98): 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 %)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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

Mandalay Beach
Beach Closures - (Delisting)

Summary of Proposed Action

Mandalay Beach is a beach located just south of McGrath Beach State Park. Mandalay Beach is proposed to be **removed** from the 2002 303(d) list of water quality limited segments as it is no longer impaired for beach closures. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 305(b) Listing/TMDL Information

Waterbody Name	**Mandalay Beach**	**Pollutants/Stressors**	**Beach Closures**
Hydrologic Unit	403.11	**Source(s)**	NA
Total Waterbody Size	1.7 miles along the coast	**TMDL Priority**	Analytical Unit 23
Size Affected	1.7 miles along the coast	**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Entire beach	**TMDL End Date (Mo/Yr)**	2003

Watershed Characteristics

Mandalay Beach is a beach located just south of McGrath Beach State Park. It starts just south of the Reliant Mandalay Energy Generating Station outfall, where the water from the Edison Canal enters the ocean. It ends in the City of Oxnard at Almalfi Way.

Water Quality Objectives 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 Regional Board follows the U.S. EPA criteria which are:
- Fully Supporting - No beach closures in the previous three years
- Partially Supporting - averaging 1 beach closure per year, lasting less than one week long per closure.

Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Beach Closure Data for Mandalay Beach

Dates of Observance	5/99-6/02
Number (Percent) above or below Objective	No beach closures in last 3 years.

Potential Sources

NA

References

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

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.

REV 13-285

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

REV 13-286

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.

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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

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	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

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Draft 12/12/01

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

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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.

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References

Toxics Substances Monitoring Program database

REV 13-243

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 and fish consumption beneficial uses as previously listed in the 1996 Water Quality Assessment.

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**	57
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

There is no longer a tissue MTRL for this compound.

Beneficial Uses Affected

Aquatic Life, as previously listed in 1996 Water Quality Assessment
Fish Consumption, as previously listed in 1996 Water Quality Assessment

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	

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
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 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 EDLs which no longer represent valid assessment guidelines.
- Delist silver in tissue because the listing was based on EDLs which no longer represent valid assessment guidelines.
- Delist TBT in sediment because there is no valid assessment guideline for this compound.

These actions all affect the aquatic life beneficial uses, as previously listed in the 1996 Water Quality Assessment.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Ballona Creek	**Pollutants/Stressors**	**Delete**: As (Tissue); Cu (Tissue); Pb (Tissue); Ag (Tissue); TBT (Sediment)
Hydrologic Unit	405.13	**Source(s)**	
Total Waterbody Size	4.3	**TMDL Priority**	Metals: 57 TBT: 70
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

EDLs have been determined to be an insufficient basis for impairment determination.

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.

Data Assessment

No new data.

Potential Sources

N/A

References

N/A

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 fish consumption and aquatic life beneficial uses, as previously listed in the 1996 Water Quality Assessment.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Westlake Lake	**Pollutants/Stressors**	**Delete**: chlordane (Tissue); Cu (Tissue);
Hydrologic Unit	404.25	**Source(s)**	Unknown
Total Waterbody Size	186	**TMDL Priority**	Chlordane: 61 Copper: 68
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 Not Attained

EDLs have been determined to be an insufficient basis for impairment determination.

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.
Fish Consumption.

Data Assessment

No new data

Potential Sources

Unknown

References

N/A

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).

These actions all affect the fish consumption and aquatic life beneficial uses as previously listed in the 1996 Water Quality Assessment.

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 Not Attained

N/A

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.

Fish Consumption.

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	

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
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 as previously listed in the 1996 Water Quality Assessment.

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**	Copper: 68 Chlordane & PCBs: 61
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

EDLs have been determined to be an insufficient basis for impairment determination.

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.

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	

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
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 fish consumption and aquatic life beneficial uses as previously listed in the 1996 Water Quality Assessment.

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**	39
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

There is no longer a tissue MTRL for this compound.

Beneficial Uses Affected

Aquatic Life, as previously listed in the 1996 Water Quality Assessment.
Fish Consumption.

Data Assessment

No new data.

Potential Sources

N/A

References

N/A

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 Residue Levels (MTRLs).
- "Not Supporting" (Impaired) for toxaphene in tissue due to exceedances of MTRLs.

Proposed New Delistings

- Delist TBT in tissue and sediment because the listing was based on exceeding background levels rather than valid assessment guidelines. Delisting applies to LA Harbor Consolidated Slip (tissue only), Fish Harbor (sediment only), Inner Breakwater (sediment only) and Main Channel (sediment only).
- 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 and/or commercial and sport fishing 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

Beneficial Uses Affected

Aquatic Life
Commercial and Sport Fishing

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 1/6/93; 11/9/93 2/1/94; 2/8/94 1/31/95 1/18/96; 7/17/96 3/24/98
Number of Samples (n)	1992: 2 (sediment) 1993: 1 (sediment) + 1 (tissue) 1994: 3 (sediment) + 1 (tissue) 1995: 1 (tissue) 1996: 14 (sediment) + 1 (tissue) 1998: 2 (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 ppm 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 ppm 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 %)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

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
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 new Calleguas CreekReach 13 only.
- "Not Supporting" (Impaired) for dieldrin in tissue due to exceedances of MTRLs in new Calleguas Creek Reach 13 only.
- "Not Supporting" (Impaired) for HCH in tissue due to exceedances of MTRLs in new Calleguas Creek Reach 13 only.
- "Not Supporting" (Impaired) for PCBs in tissue due to exceedances of MTRLs in new Calleguas Creek Reach 13 only.

Proposed New Delistings

- Delist dacthal in tissue in old Calleguas Creek 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 old Calleguas Creek Reaches 1, 2 and 3 because the listings were based on EDLs which no longer represent valid assessment guidelines.
- Delist cadmium in tissue in old Calleguas Creek Reaches 1, 2 and 3 because the listings were based on EDLs which no longer represent valid assessment guidelines.
- Delist chromium in tissue in old Calleguas Creek Reaches 1, 2 and 3 because the listings were based on EDLs which no longer represent valid assessment guidelines.
- Delist nickel in tissue in old Calleguas Creek Reaches 1, 2 and 3 because the listings were based on EDLs which no longer represent valid assessment guidelines.

These actions all affect the downstream commercial and sport fishing 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:** 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
EDLs have been determined to be an insufficient basis for impairment determination.

Beneficial Uses Affected

Downstream commercial and sport fishing beneficial uses.

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 %)

This table may summarize additional data not relevant to this factsheet that supports a continued listing for this waterbody.

Potential Sources

Historical use of pesticides and lubricants.

References

Toxic Substances Monitoring Program database

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

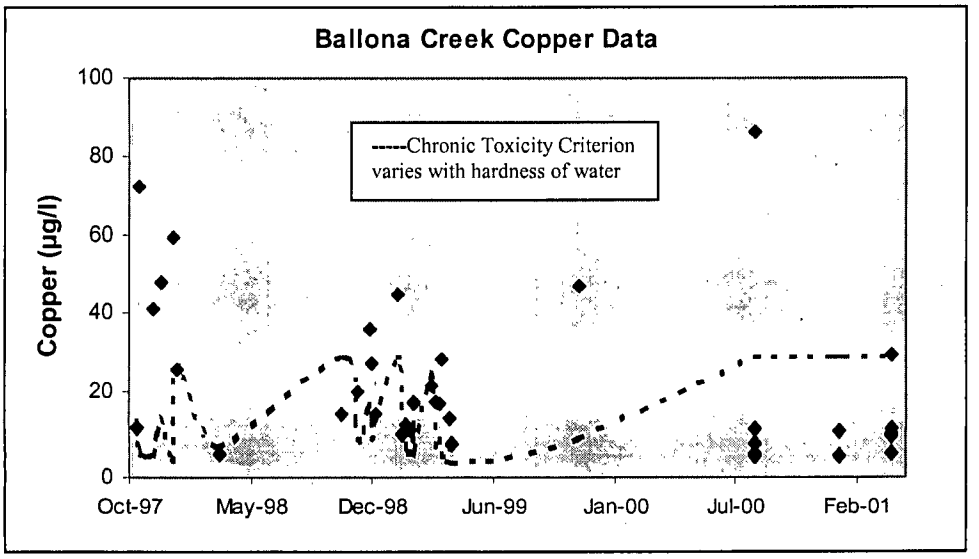


Table 2. Summary of Copper Data for Ballona Creek to Estuary

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 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

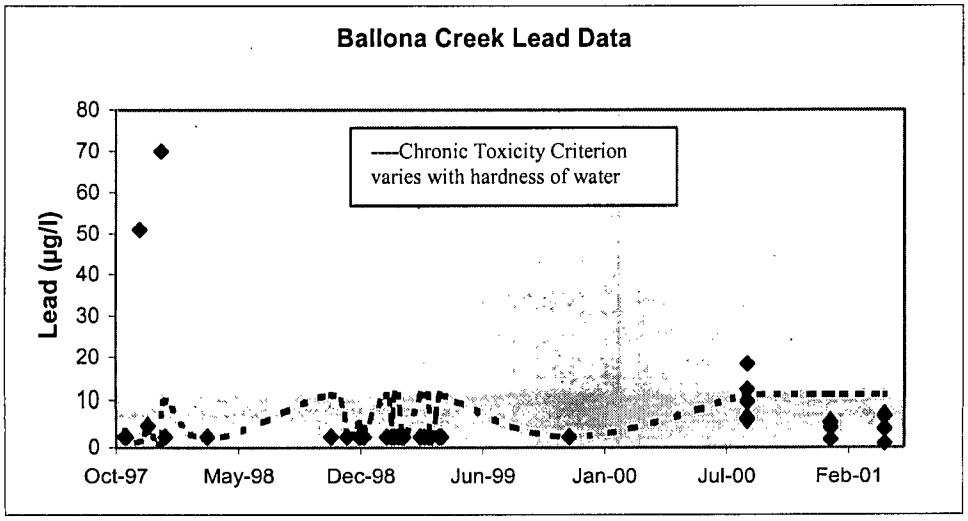


Table 2. Summary of Lead Data for Ballona Creek to Estuary

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

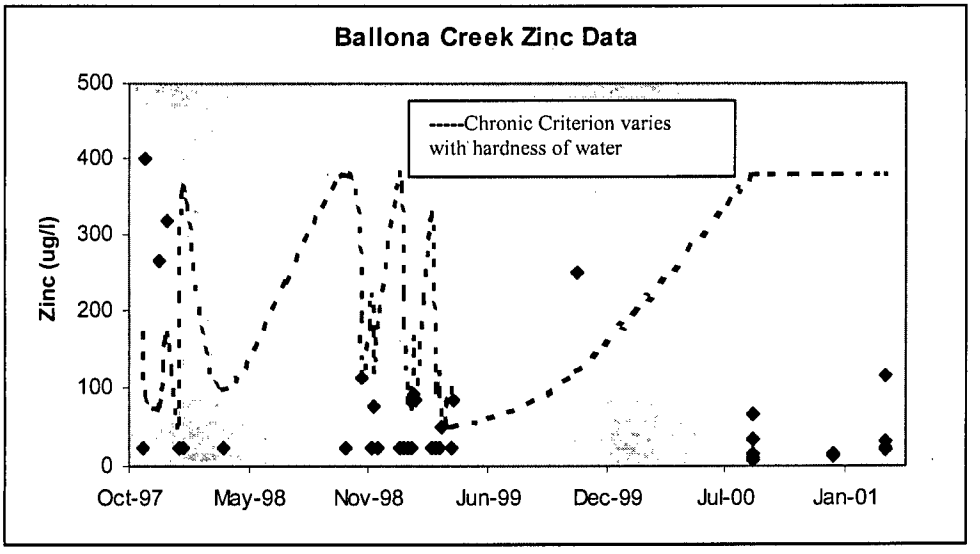


Table 2. Summary of Zinc Data for Ballona Creek to Estuary

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 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

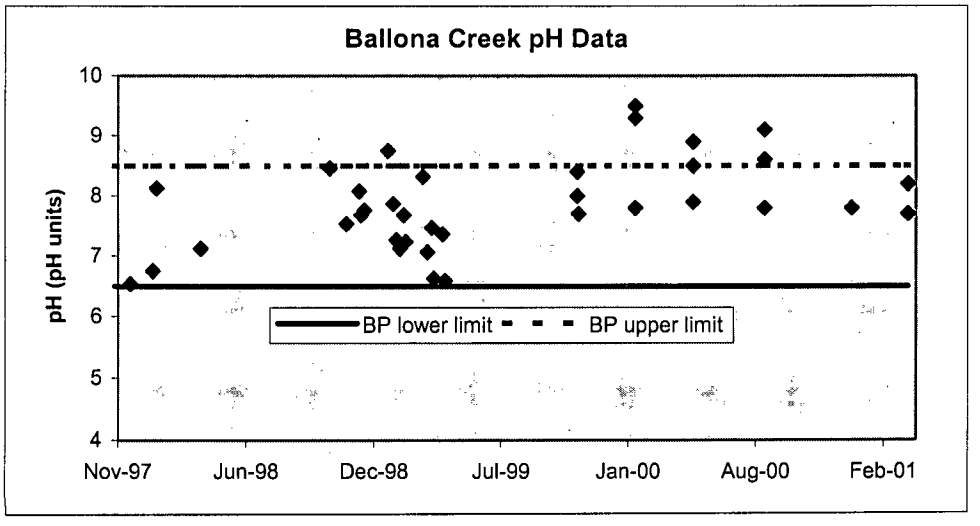


Table 2. Summary of pH Data for Ballona Creek to Estuary

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 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

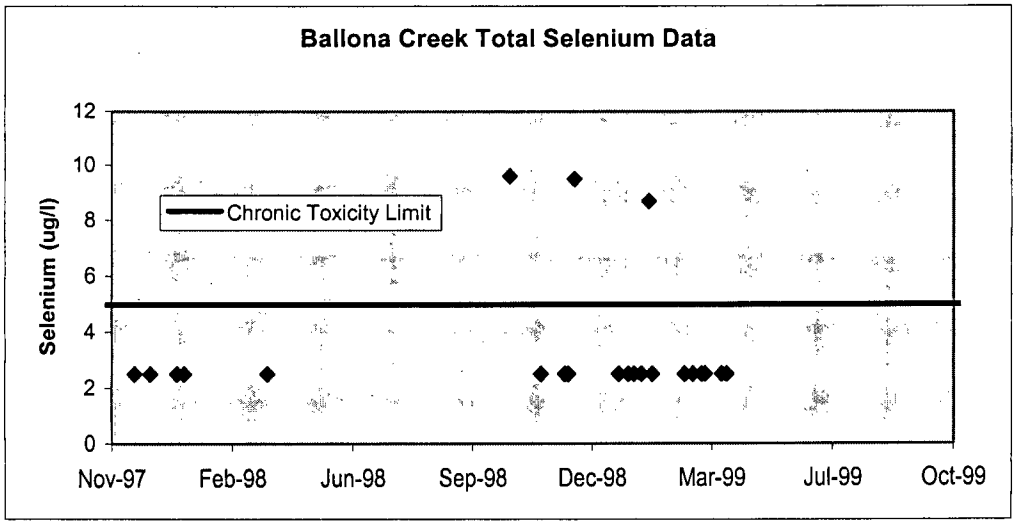


Table 2. Summary of Total Selenium Data for Ballona Creek to Estuary

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

Draft 2/28/02

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 2/28/02

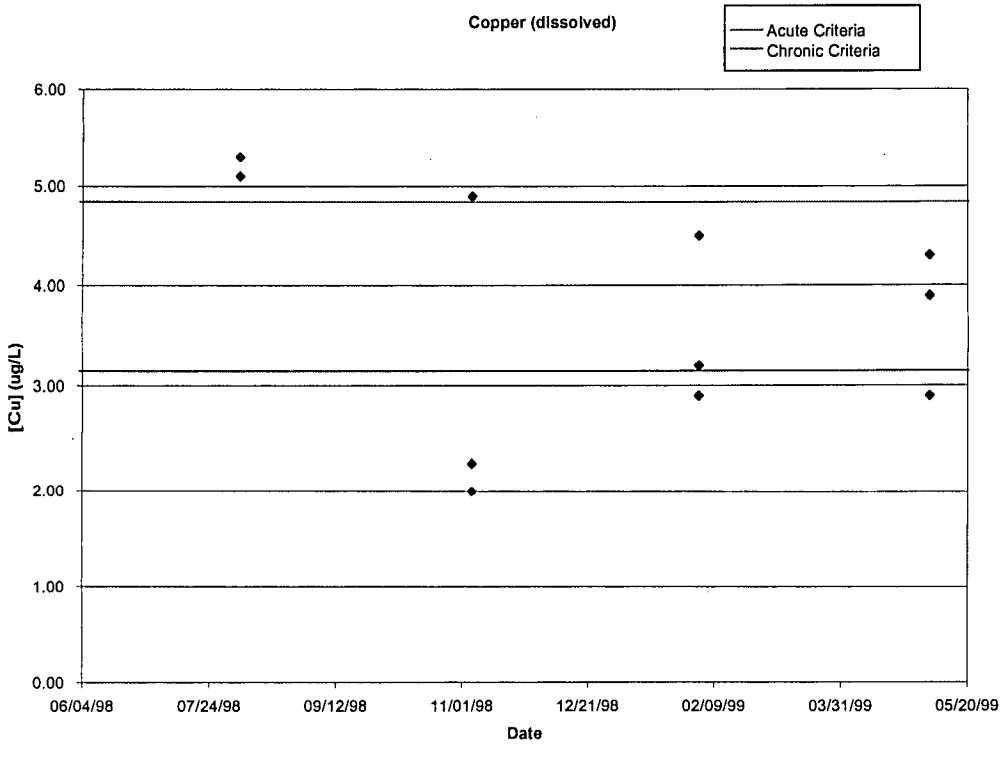
Beneficial Uses Affected

- 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 2/28/02

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 2/28/02

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

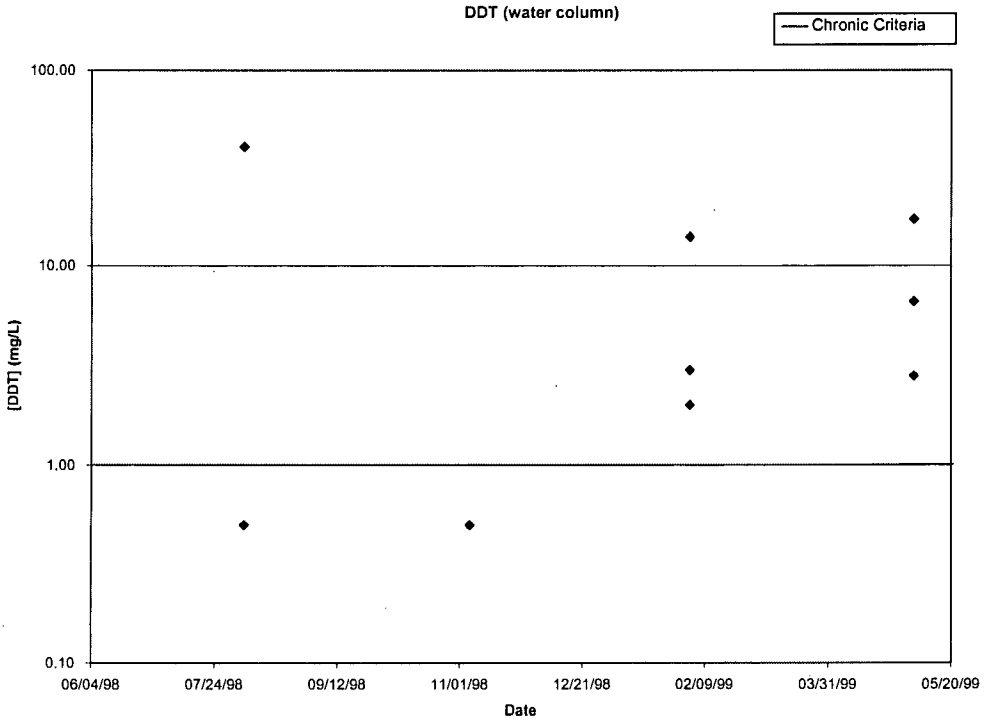
- Estuary
- Biological
- Rare
- Migration
- Spawning

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 2/28/02



Potential Sources

Non-point sources.

References

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

Draft 2/28/02

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.

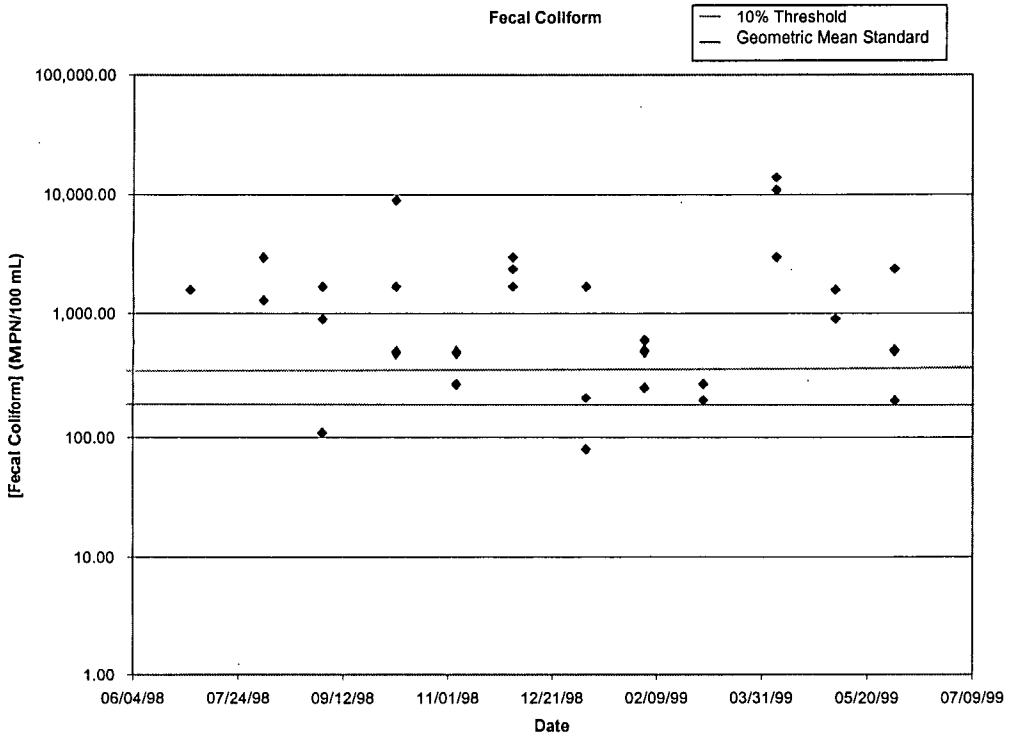
Beneficial Uses Affected

- 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.



Potential Sources

Point and non-point.

References

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

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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.

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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.

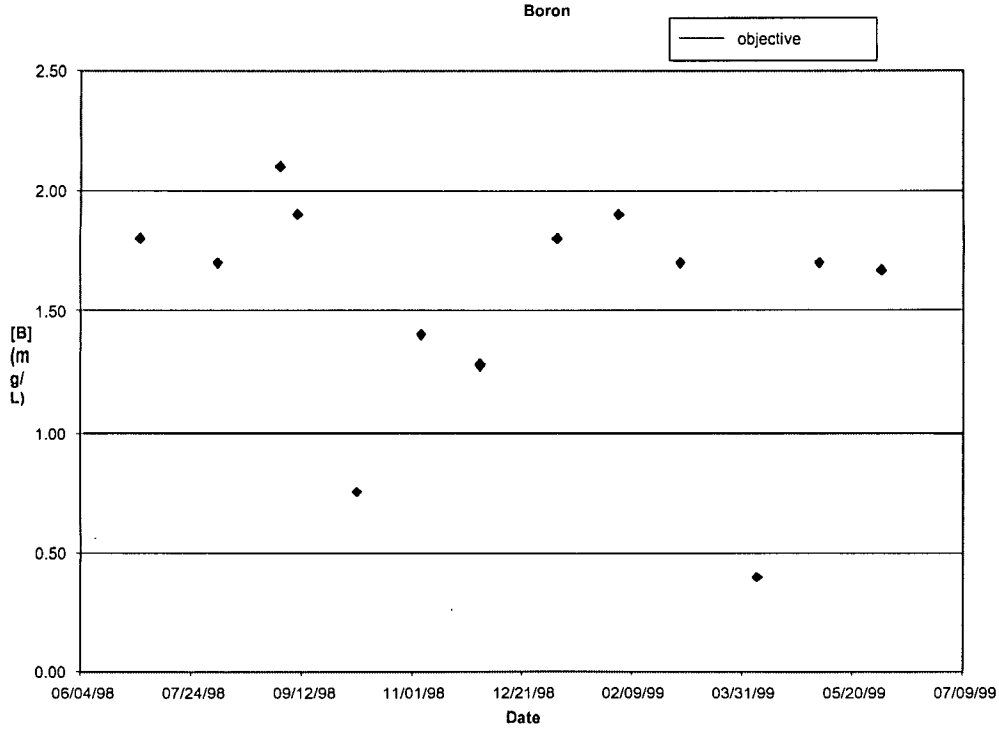
Beneficial Uses Affected

- 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 2/28/02

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.

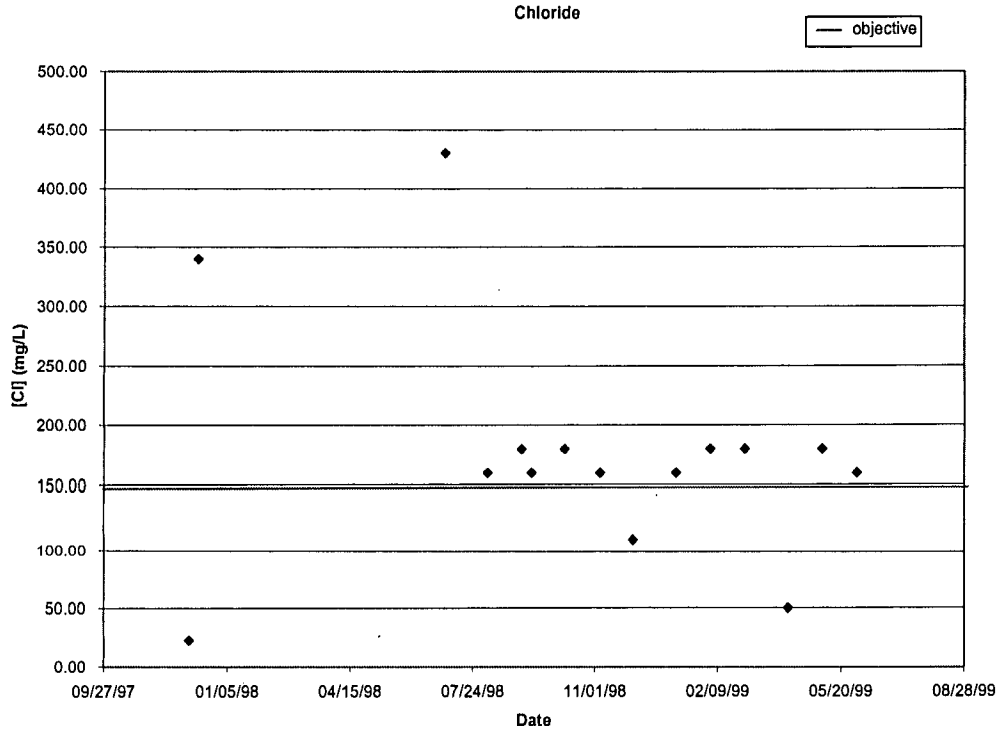
Beneficial Uses Affected

- 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.

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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 2/28/02

California Regional Water Quality Control Board, Los Angeles Region

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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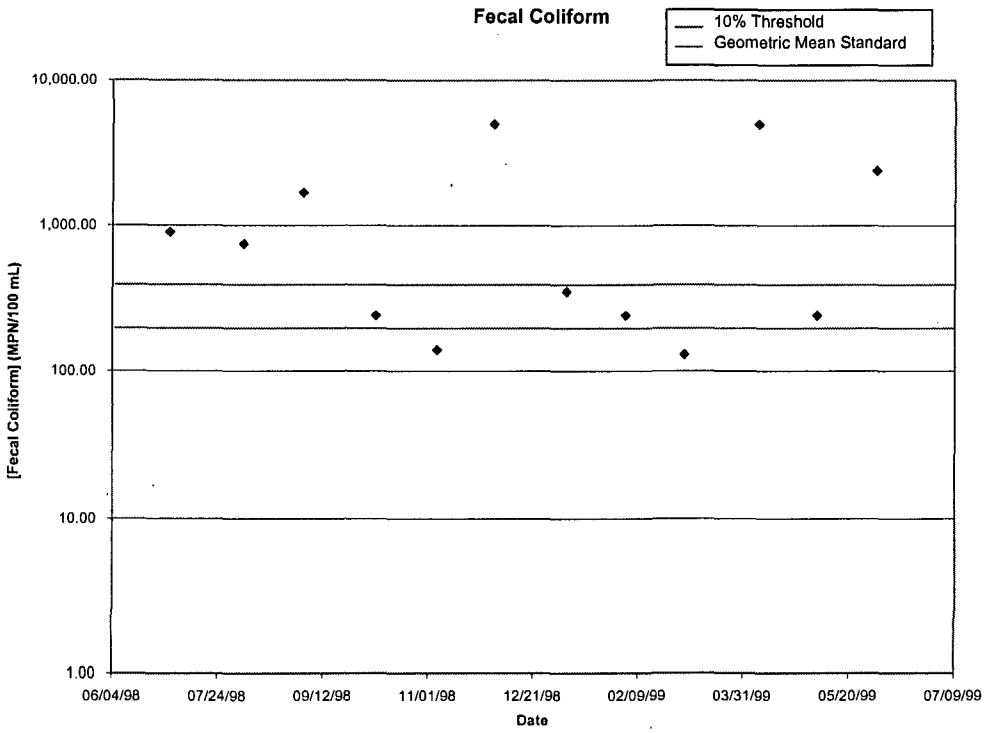

Potential Sources

Non-point sources.

References

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

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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%

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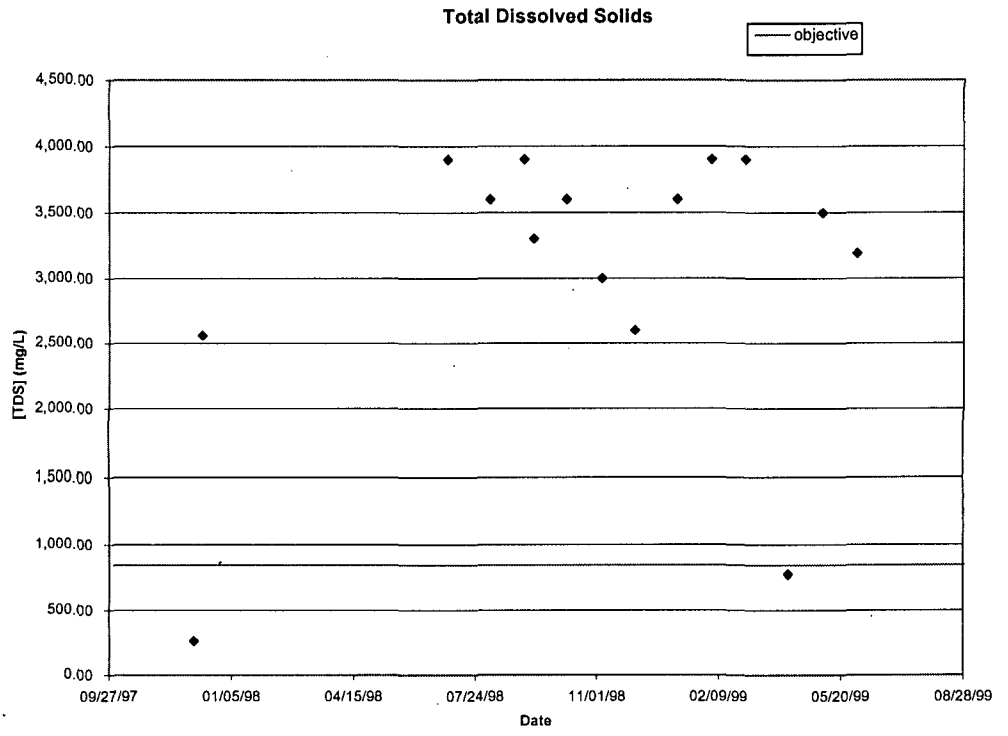

Potential Sources

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

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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.

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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.

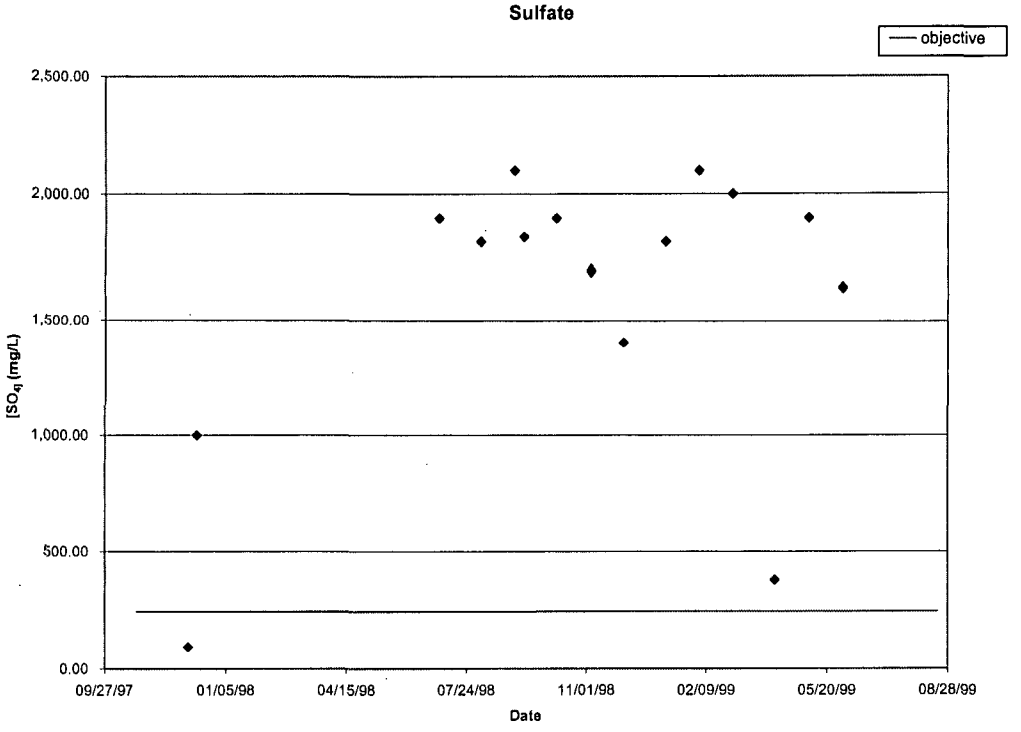
Beneficial Uses Affected

- 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%



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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

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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 not supporting (impaired) due to the median value exceeding the nitrate as NO3 objective. The beneficial use affected by this impairment is groundwater recharge.

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.

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Water Quality Objectives Not Attained

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

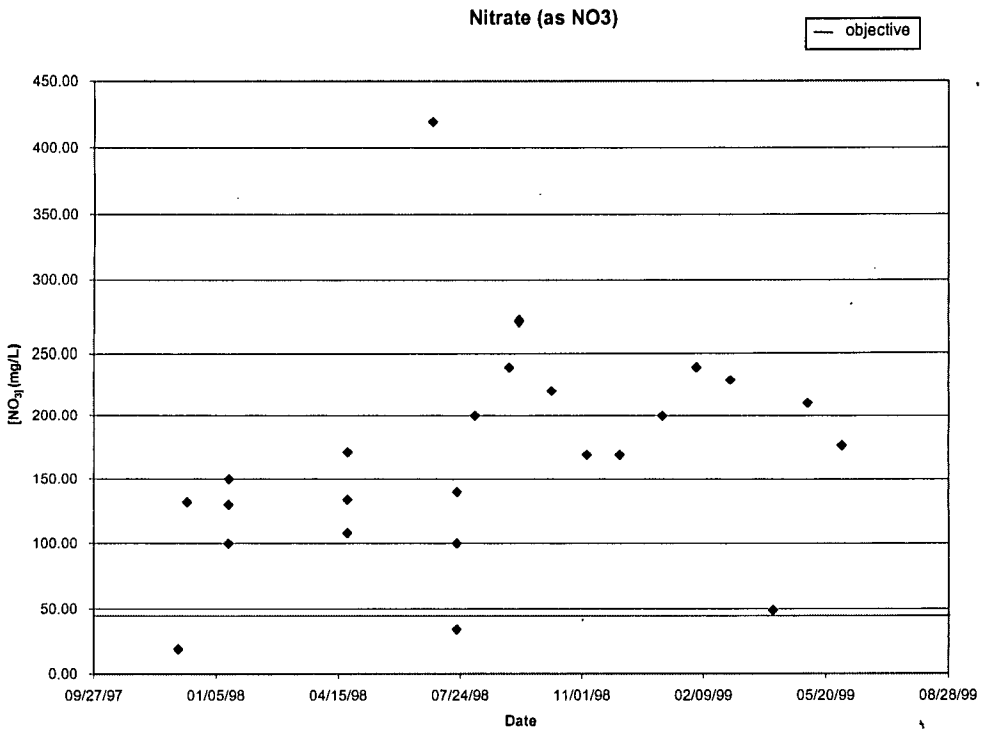
Beneficial Uses Affected

- Groundwater Recharge and associated MUN beneficial use of groundwater basin.

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%)



Potential Sources

Point and non-point sources.

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References

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

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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	15 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)	12
Minimum Data Value	70 MPN/100mL
Maximum Data Value	16000 MPN/100mL
Median Data Value	270 MPN/100mL
Arithmetic Mean Value	14335 MPN/100mL
Standard Deviation	45941 MPN/100mL
Number (Percent) above Objective	Geomean of 557 exceeds 200; 4 or 33 % exceed 400 standard.

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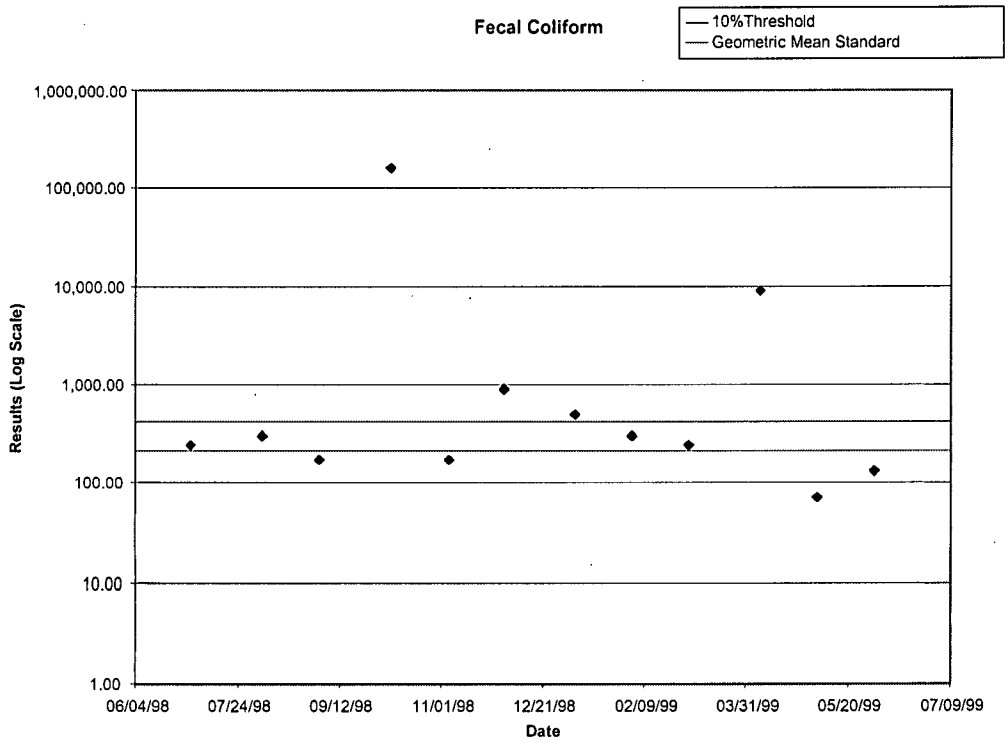


Potential Sources

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 2/28/02

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 partially supporting (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 groundwater recharge.

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	15 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 with 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 of 45 mg/L.

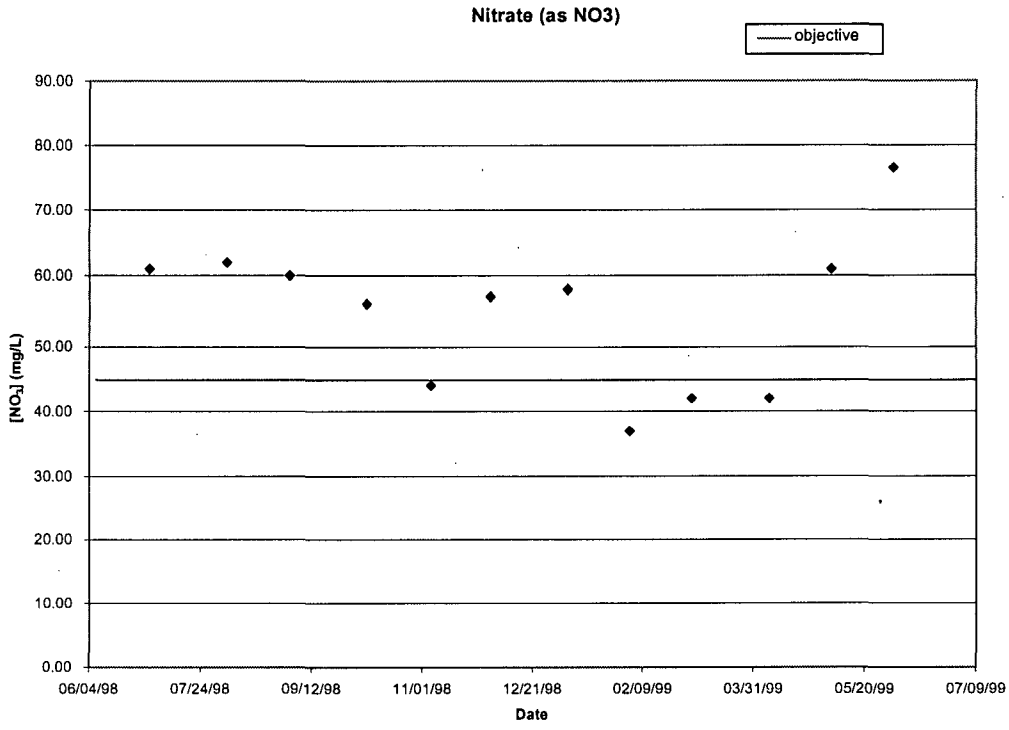
Beneficial Uses Affected

- Groundwater Recharge and associated MUN beneficial use of groundwater basin.

Data Assessment

Table 2. Summary of Nitrate as NO_3 for Calleguas Creek Reach 6 – Arroyo Las Posas

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	57.5 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.

Draft 2/28/02

References

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

Draft 2/28/02

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.

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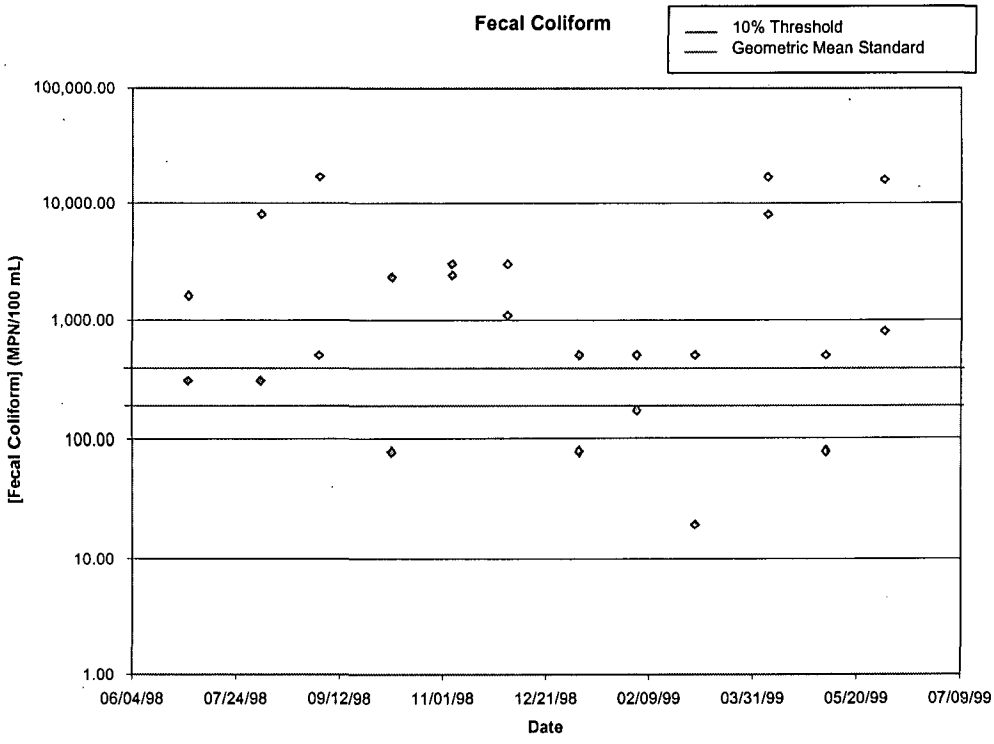


Potential Sources
Non-point sources.

References

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

Draft 2/28/02

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 WWTP 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

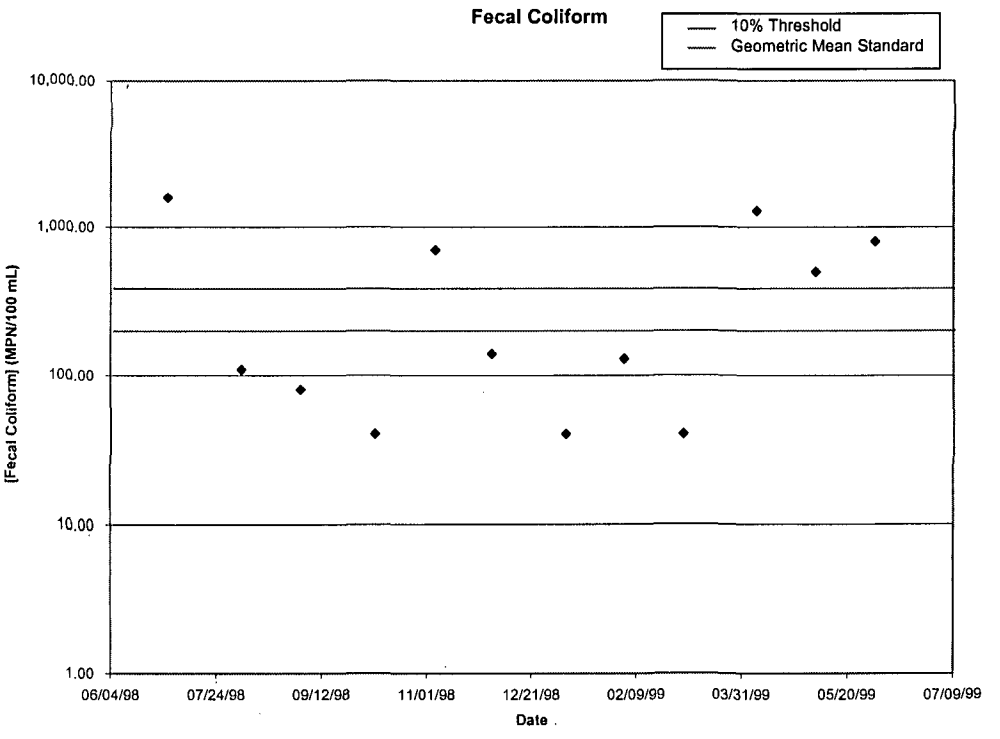
Water Contact Recreation (REC-1)

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 2/28/02



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 2/28/02

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 partially supporting (impaired) due to greater than 10 percent exceedance of the nitrate as nitrogen objective. The beneficial use affected by this impairment is groundwater recharge.

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.

Water Quality Objectives Not Attained

Basin Plan Objective for Nitrate as Nitrogen of 10 mg/L.

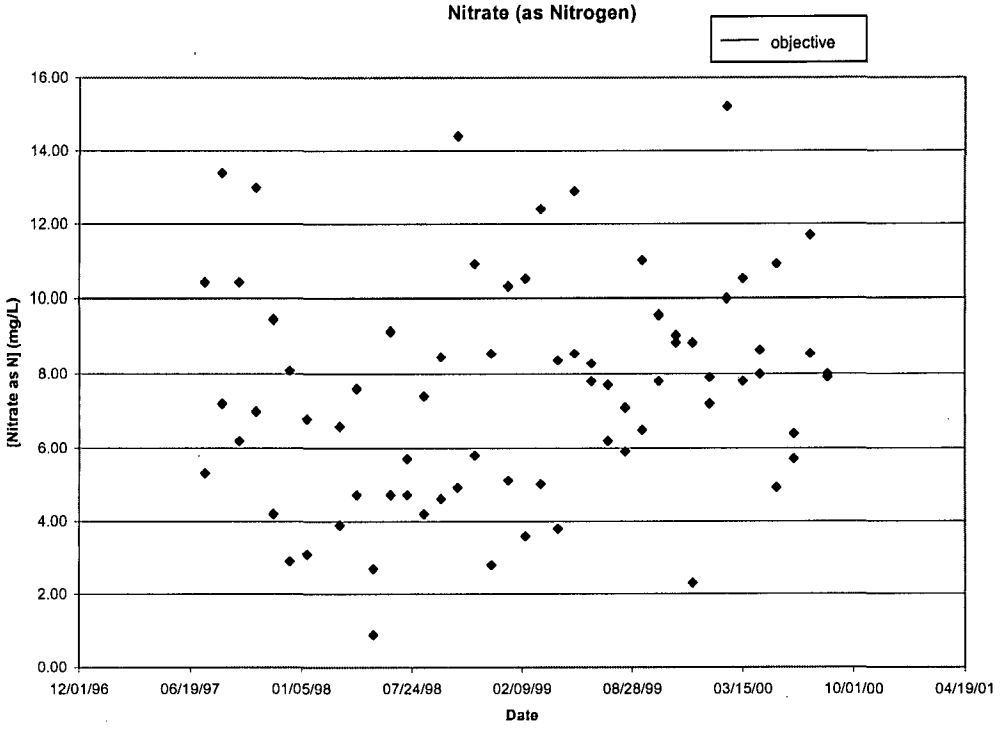
Beneficial Uses Affected

- Groundwater Recharge and associated MUN beneficial use of groundwater basin.

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%



Potential Sources

Point and non-point sources.

Draft 2/28/02

References

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

Draft 2/28/02

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 partially supporting (impaired) due to greater than 10 percent exceedance of the nitrate as NO_3 objective. The beneficial use affected by this impairment is groundwater recharge.

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. Camrosa WWTP discharges to percolation ponds near downstream.

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Water Quality Objectives Not Attained

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

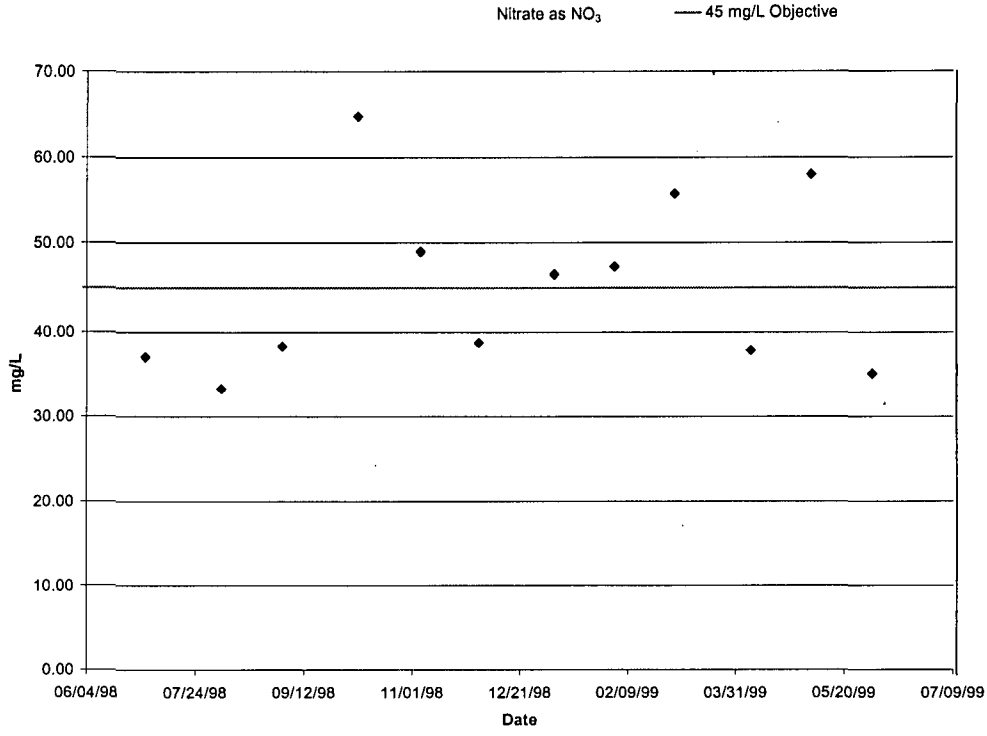
Beneficial Uses Affected

- Groundwater Recharge and associated MUN beneficial use of groundwater basin.

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)	12
Minimum Data Value	33.0 mg/L
Maximum Data Value	64.8 mg/L
Median Data Value	42.6 mg/L
Arithmetic Mean Value	45.1 mg/L
Standard Deviation	10.2 mg/L
Number (Percent) above Objective	6 (50%)



Potential Sources

Point and non-point sources.

Draft 2/28/02

References

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

Draft 2/28/02

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 partially supporting (impaired) due to greater than 10 percent exceedance of the nitrite as nitrogen objective. The beneficial use affected by this impairment is groundwater recharge.

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. Camrosa WWTP discharges to percolation ponds near downstream.

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Water Quality Objectives Not Attained

Basin Plan Objective for Nitrite as Nitrogen of 1.0 mg/L.

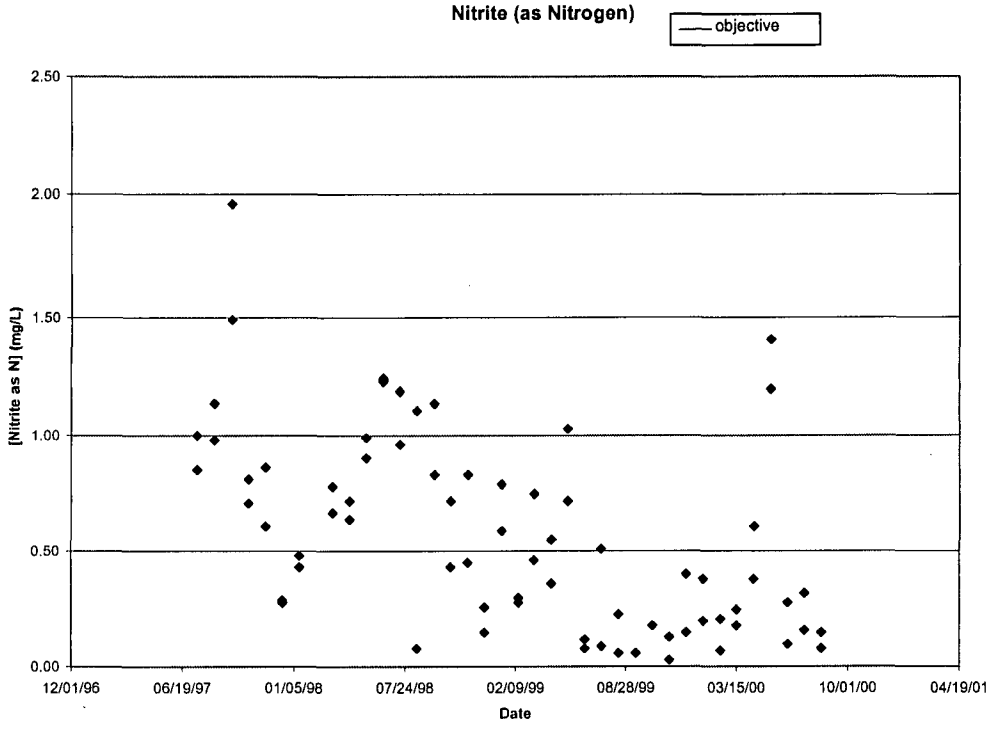
Beneficial Uses Affected

- Groundwater Recharge and associated MUN beneficial use of groundwater basin.

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%



Potential Sources

Point and non-point.

Draft 2/28/02

References

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

Draft 2/28/02

California Regional Water Quality Control Board, Los Angeles Region

Calleguas Creek Reach 9B, Conejo Creek Main Stem
Fecal Coliform

Summary of Proposed Action

Calleguas Creek Reach 9B, Conejo Creek Main Stem extends from the end of Calleguas Creek Reach 10, Hill Canyon to the beginning of Reach 9A, Camrosa Diversion. Calleguas Creek Reach 9B 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 9B - Arroyo Las Posas	Pollutants/Stressors	Fecal Coliform
Hydrologic Unit	403.64	**Source(s)**	Point and non-point
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 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 9B, Conejo Creek Main Stem extends from the end of Calleguas Creek Reach 10, Hill Canyon to the beginning of Reach 9A, Camrosa Diversion. There are no major point sources or new water sources in Reach 9B.

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

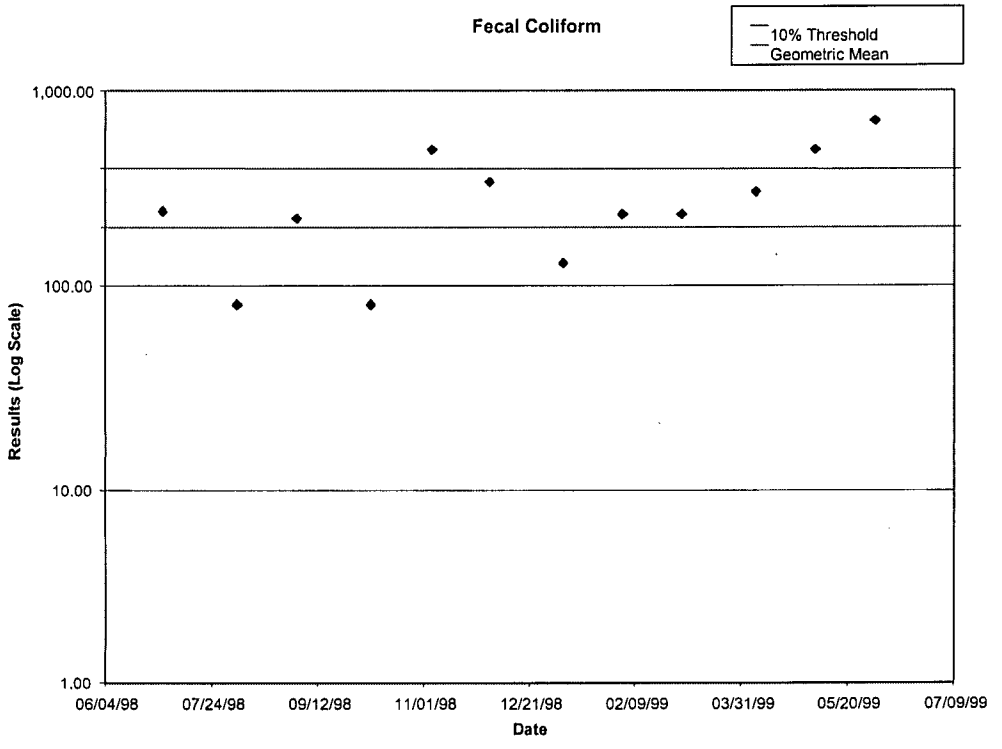
- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform for Calleguas Creek Reach 9B, Conejo Creek Main Stem.

Dates of Sampling	7/98-6/99
Number of Samples (n)	12
Minimum Data Value	80 MPN/100mL
Maximum Data Value	700 MPN/100mL
Median Data Value	235 MPN/100mL
Arithmetic Mean Value	296 MPN/100mL
Standard Deviation	188 MPN/100mL
Number (Percent) above Objective	Geomean of 243 exceeds 200; 3 or 25 % exceed 400 standard.

Draft 2/28/02



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 2/28/02

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

Draft 2/28/02

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.

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

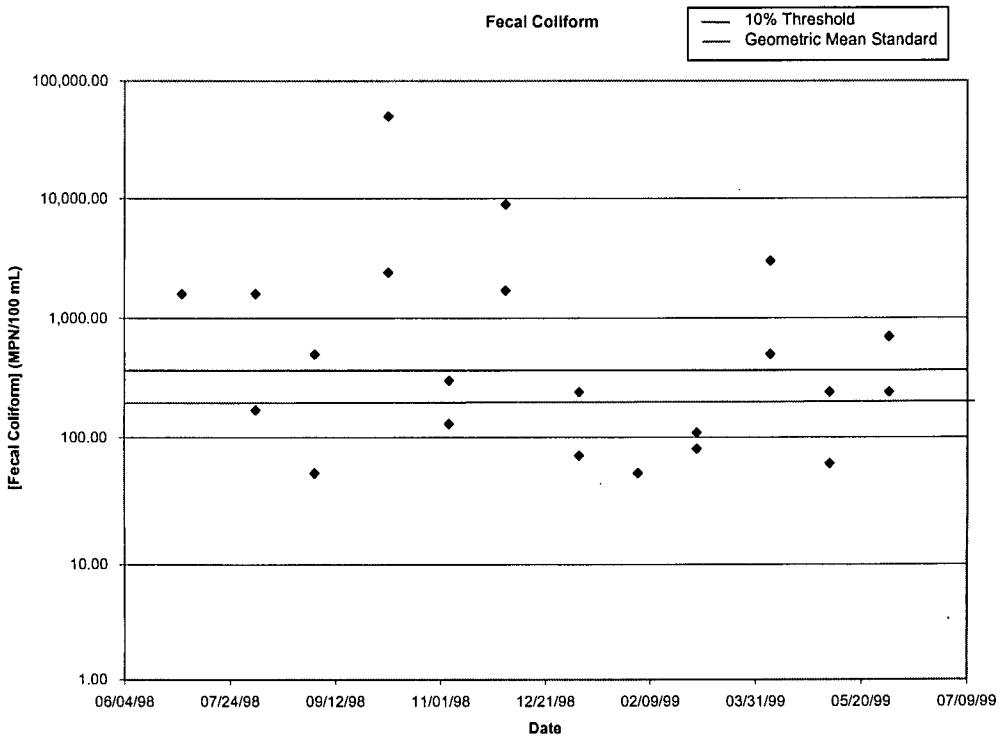
- Water Contact Recreation (REC-1)

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 2/28/02



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 2/28/02

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 partially supporting (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 groundwater recharge.

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.

Water Quality Objectives Not Attained

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

Beneficial Uses Affected

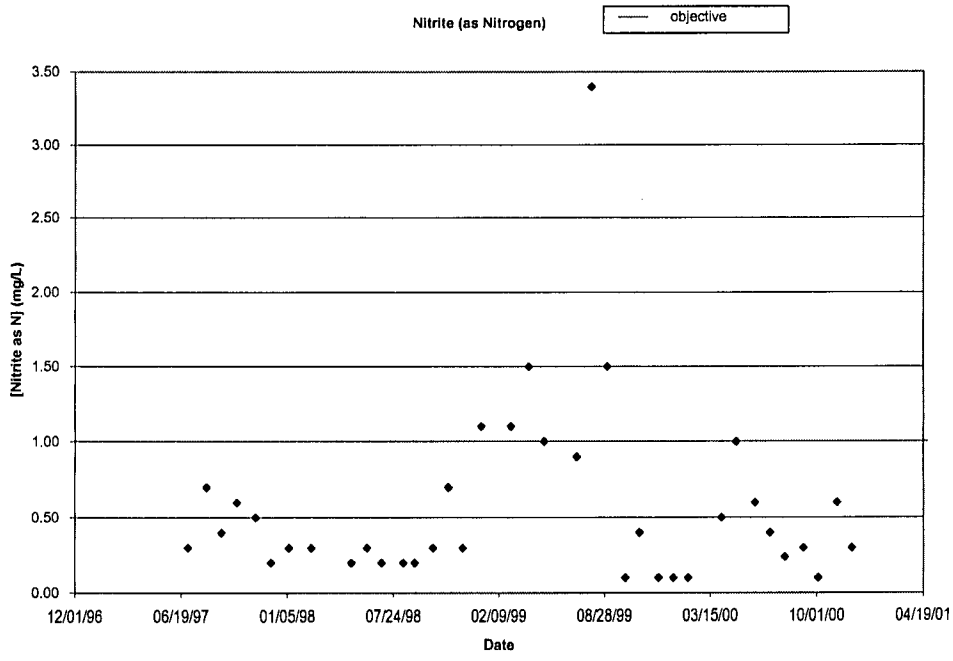
Groundwater Recharge and associated MUN beneficial use of groundwater basin.

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

Draft 2/28/02



The parameters used to determine listings require that this reach be listed for nitrite as nitrogen. However, it has been noted that all of the violations occurred before Hill Canyon WWTP completed the addition of nitrification/denitrification to its plant. This will be considered in the next listing cycle.

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 2/28/02

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

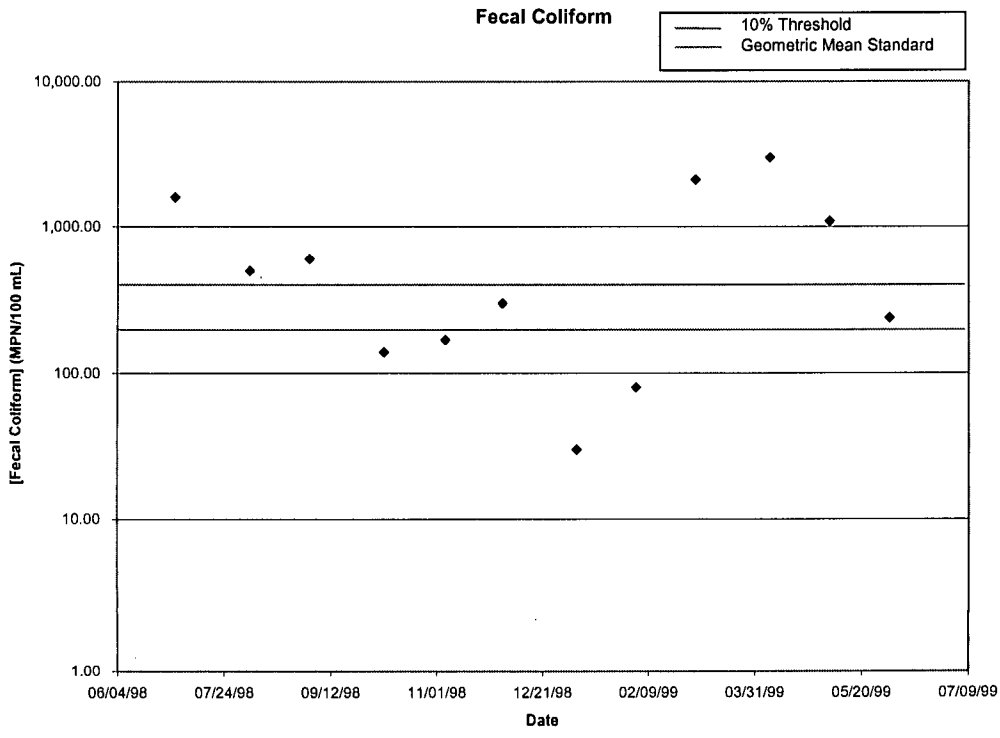
- Water Contact Recreation (REC-1)

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 2/28/02



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 2/28/02

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

Toxicity Data from study conducted by UC Davis entitled Calleguas Creek Toxicity Montoring Program 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.

Draft 2/28/02

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.

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

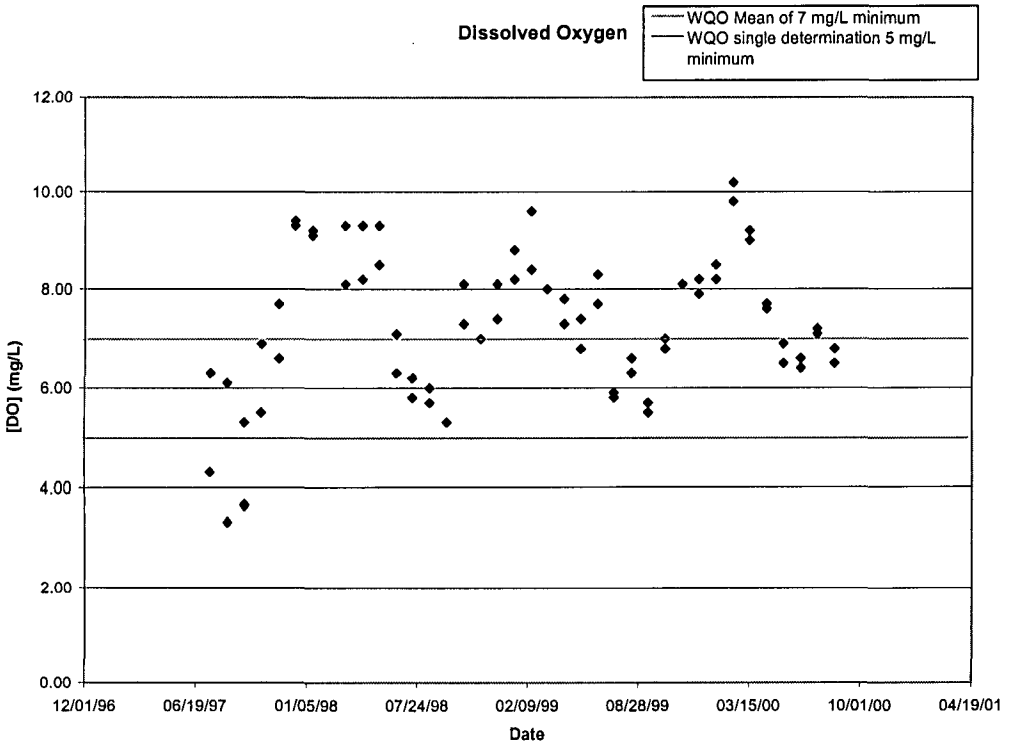
- Warm freshwater habitat

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.

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

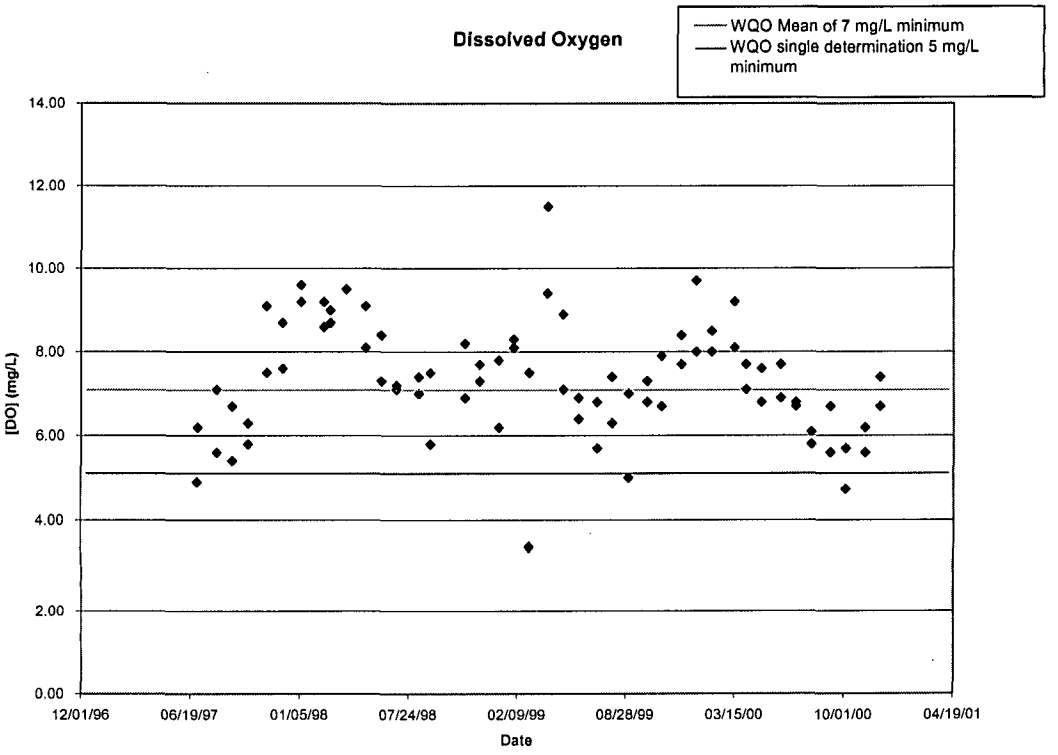
- Warm freshwater habitat.

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.

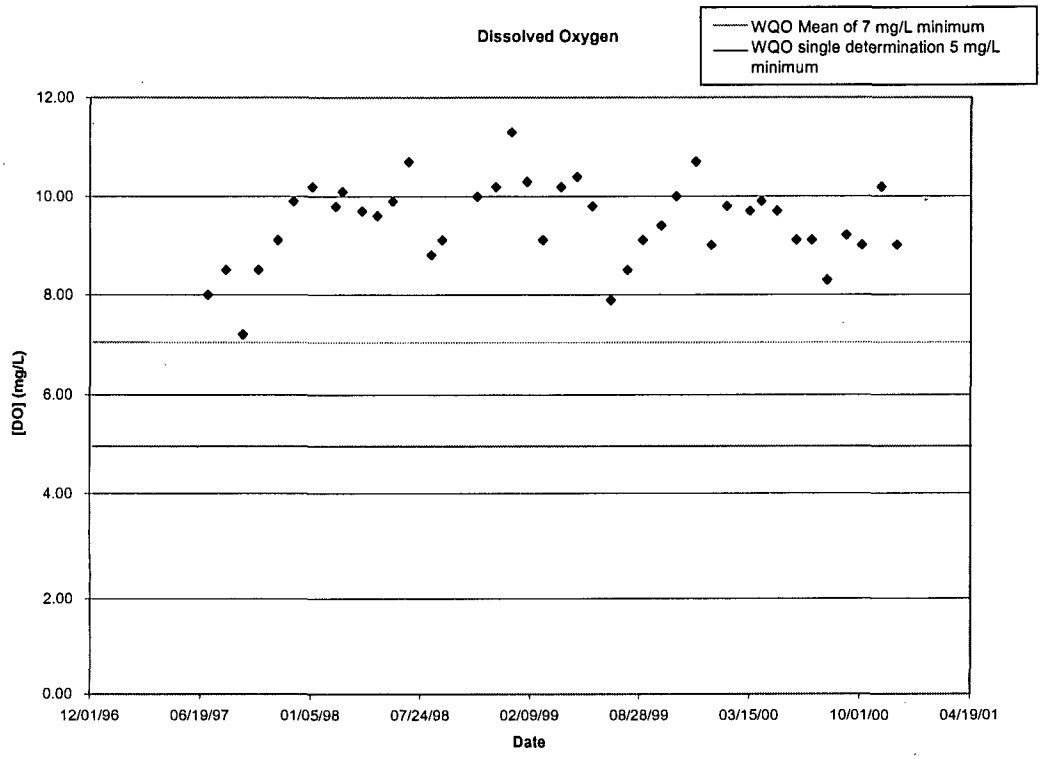
Beneficial Uses Affected

- 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%.



Potential Sources

NA.

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 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

Draft 12/03/01

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.

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

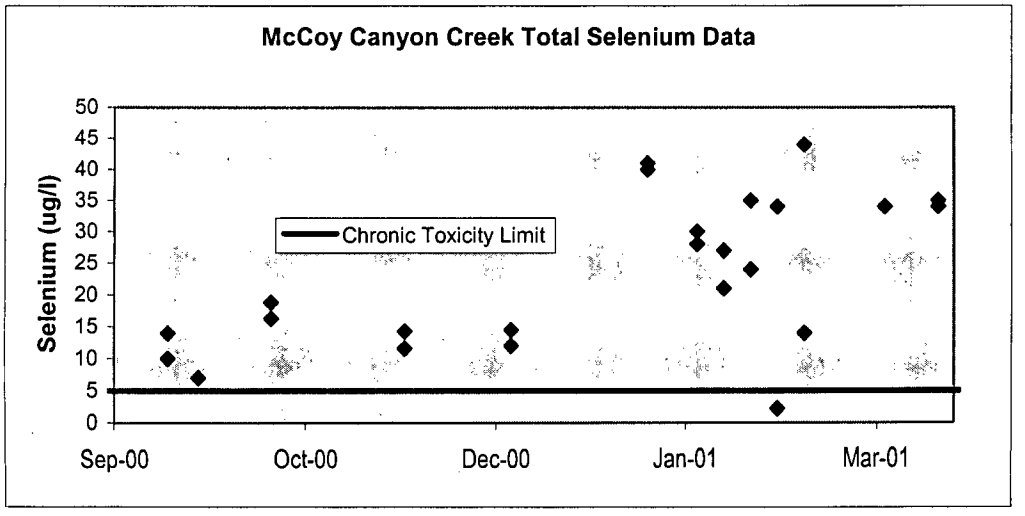


Table 2. Summary of Total Selenium Data for McCoy Canyon Creek

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

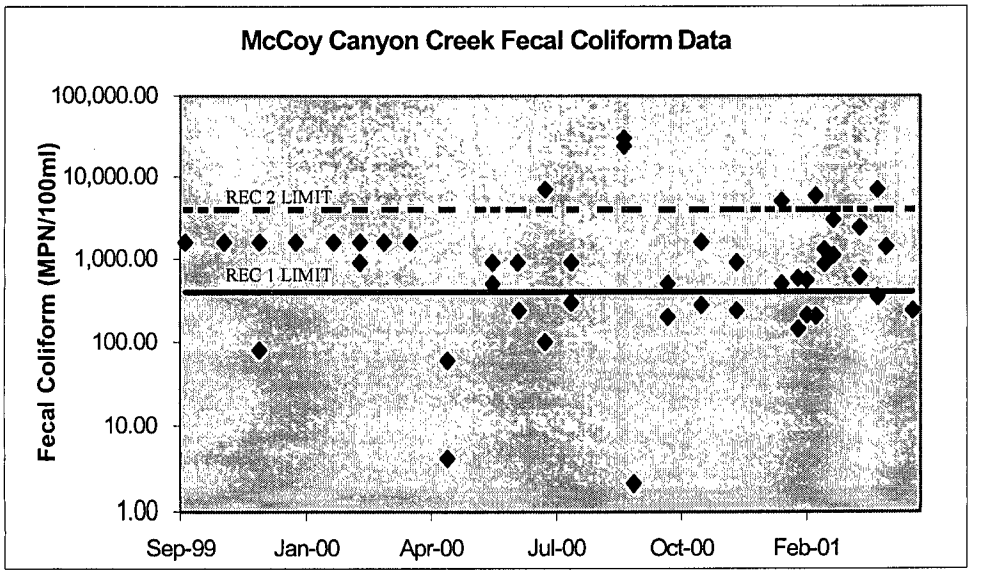


Table 2. Summary of Fecal Coliform Data for McCoy Canyon Creek

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 as Nitrogen

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 nitrate as nitrogen water quality objective. The beneficial use affected by this impairment is groundwater recharge.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	McCoy Canyon Creek	**Pollutants/Stressors**	Nitrate as Nitrogen
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

The Basin Plan objective for nitrate as nitrogen is 10 mg/l. Analysis of available data determined that this objective was exceeded in 37.3% of the sampling events.

Beneficial Uses Affected

- Groundwater Recharge and associated MUN beneficial use of underlying groundwater basin.

Data Assessment

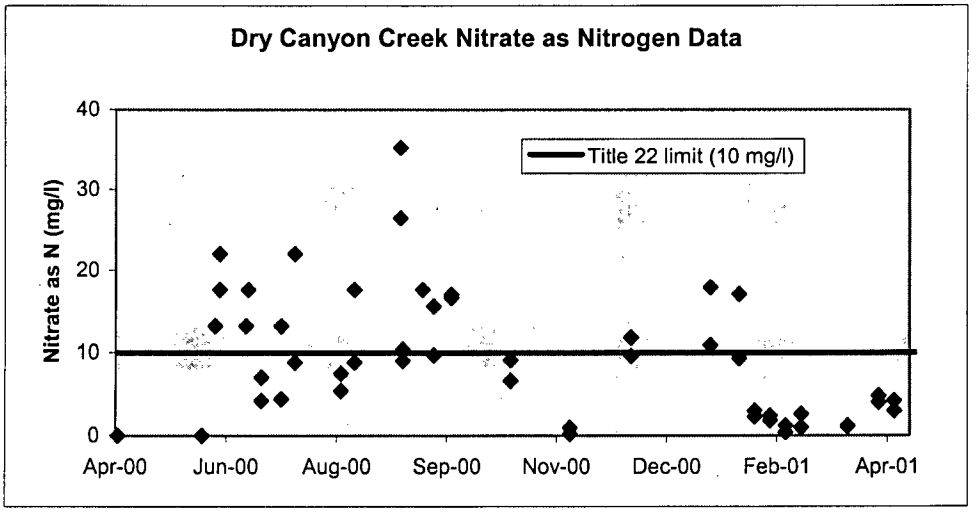


Table 2. Summary of Nitrate as Nitrogen Data for McCoy Canyon Creek

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

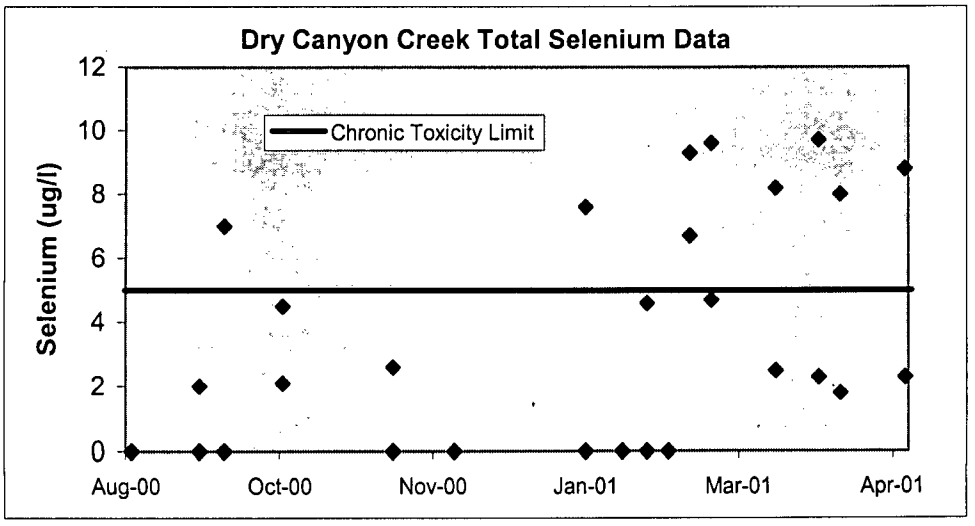


Table 2. Summary of Total Selenium Data for Dry Canyon Creek

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

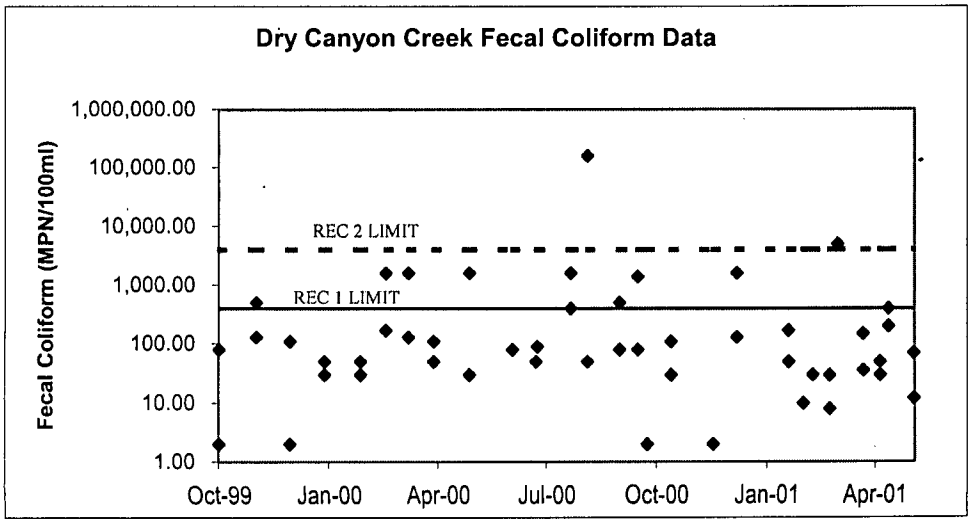


Table 2. Summary of Fecal Coliform Data for Dry Canyon Creek

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 partially supporting (impaired) due to greater than ten percent (10%) exceedance of the total aluminum water quality objective. The beneficial use affected by this impairment is groundwater recharge.

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.

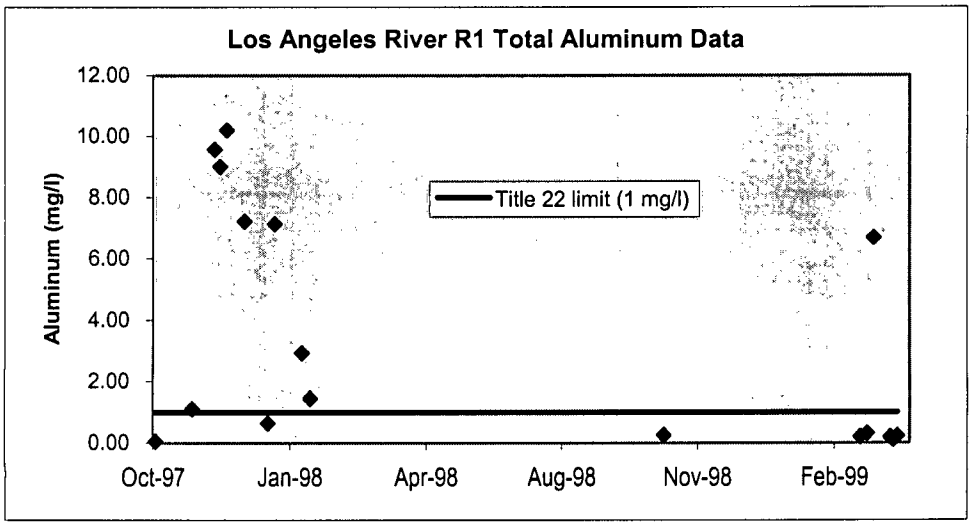
Water Quality Objectives Not Attained

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 of surface and ground waters. 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 the objective. If this trend continues, aluminum can be removed from the list in the next cycle.

Beneficial Uses Affected

- Groundwater Recharge and associated MUN beneficial use of underlying groundwater basin.

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

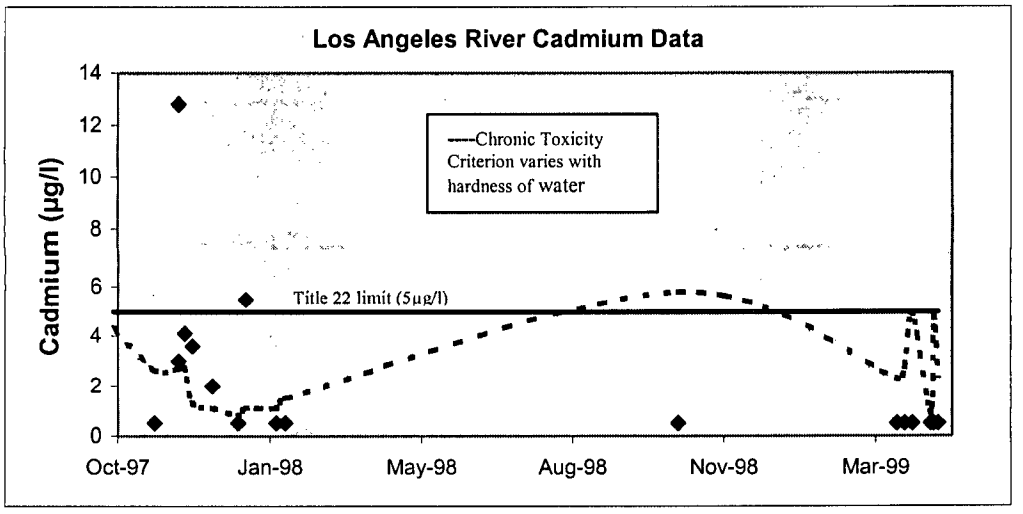


Table 2. Summary of Cadmium data for Reach 1 of the Los Angeles River

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

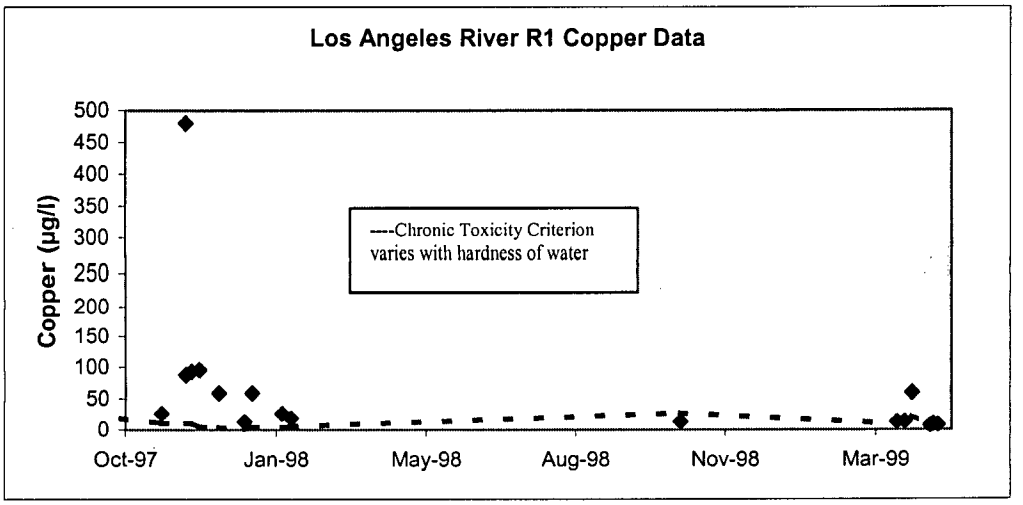


Table 2. Summary of Copper data for Reach 1 of the Los Angeles River

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

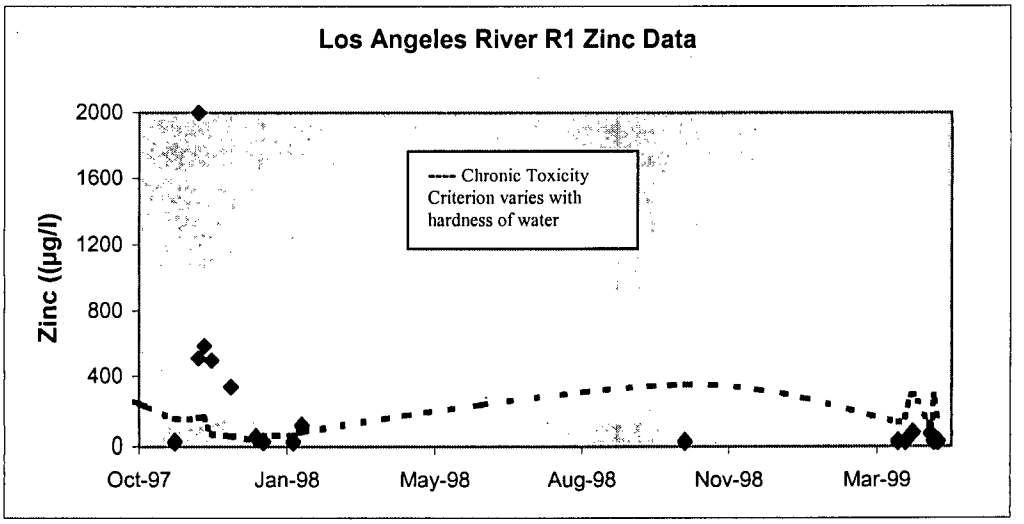


Table 2. Summary of zinc data for Reach 1 of the Los Angeles River

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

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

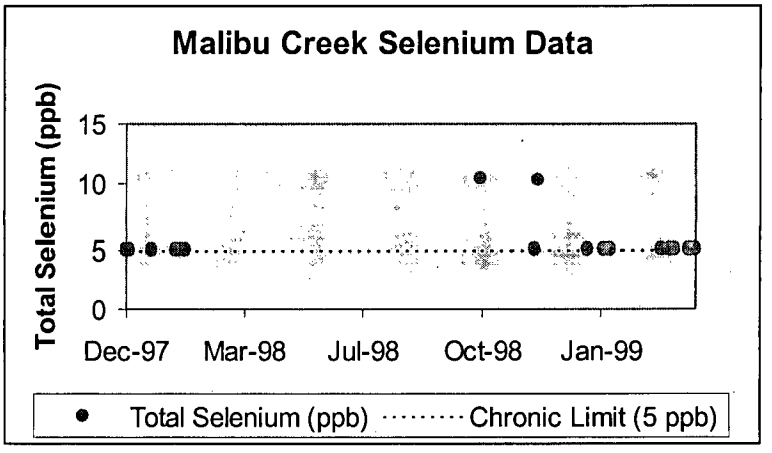
Through the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect fresh water aquatic life. The recommended Criteria Continuous Concentration for total selenium is 5 µg/l. This criterion range was exceeded in 10% of the sampling events.

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

Unknown

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.

California Regional Water Quality Control Board, Los Angeles Region

Malibu Creek Watershed – Malibu Lagoon
pH (high)

Summary of Proposed Action

Malibu Creek is proposed to be listed in the 2002 305(b) water quality assessment as "Not Supporting" (Impaired) due to pH exceedances of 8.5, which violates the Basin Plan water quality objective for pH.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Malibu Lagoon	**Pollutants/Stressors**	pH (elevated)
Hydrologic Unit	404.21	**Source(s)**	Unknown Sources
Total Waterbody Size	9.9	**TMDL Priority**	71
Size Affected	13 acres	**TMDL Start Date (Mo/Yr)**	2007
Extent of Impairment	Malibu Lagoon	**TMDL End Date (Mo/Yr)**	2010

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

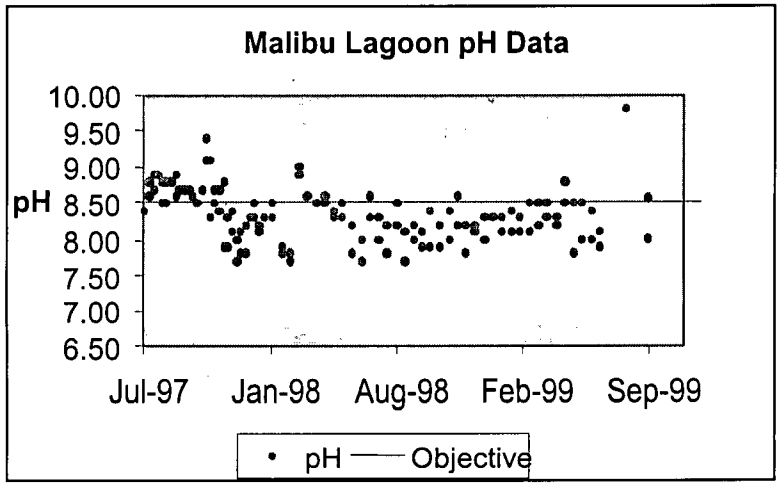
The Water Quality Control Plan for the Los Angeles Region (Basin Plan) states that, "The pH of bays or estuaries shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges." This objective was not attained in the estuary as indicated by the data assessment presented below.

Beneficial Uses Affected

- Basin Plan Objective
- Aquatic Life

Data Assessment

The chart below shows that during 1997-1999 the pH maximum of 8.5 was exceeded in 33 samples. The LARWQCB and the Tapia Water Reclamation Facility collected the data analyzed in the charts primarily during dry weather.



Summary Table for pH

	High pH value
Dates of Sampling	7/15/97- 11/29/99
Number of Samples (n)	138
Minimum Data Value	7.4
Maximum Data Value	9.79
Median Data Value	8.30
Arithmetic Mean Value	8.29
Standard Deviation	0.39
Percent above pH Objective (8.5)	24

Potential Sources

The sampling location for the pH data was at various monitoring stations within the lagoon. Several nonpoint sources discharge to the Lagoon, such as septic systems, storm drains, and birds.

References

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

California Regional Water Quality Control Board, Los Angeles Region

Malibu Creek Watershed
Sedimentation

Summary of Proposed Action

Malibu Creek Watershed, including Malibu Creek, Las Virgenes Creek, Triunfo Creek and Medea Creek, 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	Malibu Creek Watershed	**Pollutants/Stressors**	Sediment
Hydrologic Unit	404.21-404.25	**Source(s)**	Unknown
Total Waterbody Size		**TMDL Priority**	Low
Size Affected	35.46 miles	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Malibu Creek, Las Virgenes Creek, Triunfo Creek and Medea Creek	**TMDL End Date (Mo/Yr)**	2014

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. 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

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 (macroinvertebrates based on bioassessment and physical habitat data)

Data Assessment

Study results submitted by Heal the Bay and reviewed by the California Department of Fish and Game indicate that the Malibu Creek watershed, with the exception of Cold Creek, are impaired by sedimentation based on both the biological assessment of the macroinvertebrate stream community assemblage and the physical habitat data. The data set submitted by Heal the Bay was collected using the California Stream Bioassessment Procedure (CSBP), developed by the California Department of Fish and Game, to evaluate the benthic macroinvertebrate community of streams (Harrington 1996). The CSBP is a regional adaptation of the U.S. Environmental Protection Agency Rapid Bioassessment Protocols (Barbour et el. 1999) and is recognized by the EPA as California's standardized bioassessment procedure (Davis et al. 1996).

Regional Board staff, as well as James M. Harrington, Staff Environmental Scientist of California Department of Fish and Game, reviewed the data. A letter from Harrington dated December 6, 2001, states, "All of the monitoring sites within the Malibu Creek watershed (except for the upper reaches of Cold Creek) show typical signs of ecological impairment due primarily to sediment (and nutrient enrichment). 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 as a food source. 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 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 excessive sediment deposition (Waters 1995). Benthic macroinvertebrates can be killed directly by suffocation or affected indirectly through the loss of food sources and habitat (Johnson et al. 1993)." Harrington concludes that "it is my opinion that Malibu Creek is impaired by excessive sedimentation."

Potential Sources

Unknown

References

- Heal the Bay Bioassessment data from Spring and Fall 2000
- Harrington, James M., letter to Jonathon S. Bishop, December 6, 2001
- Measuring the Health of California Streams and Rivers: A Methods Manual for Water Resource Professionals, Citizen Monitors, and Natural Resources Students by Jim Harrington and Monique Born, 2nd Edition, Revision 4, 1999-2000
- Basin Plan (1994)

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.

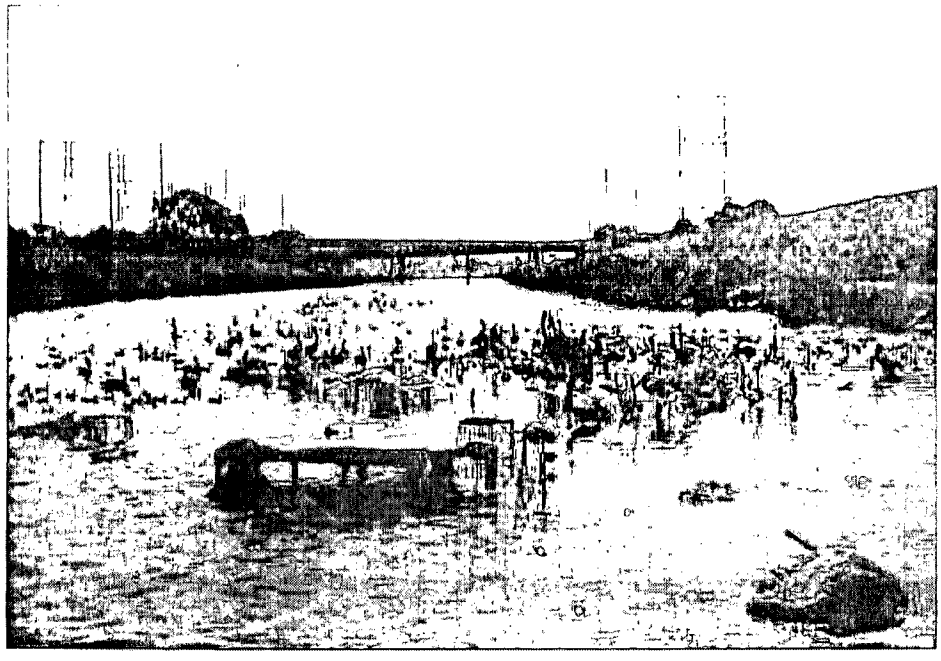


Figure 1:
Sample of Photographic Documentation of Gross Impairment due to Trash in the San Gabriel River Estuary

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 – 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

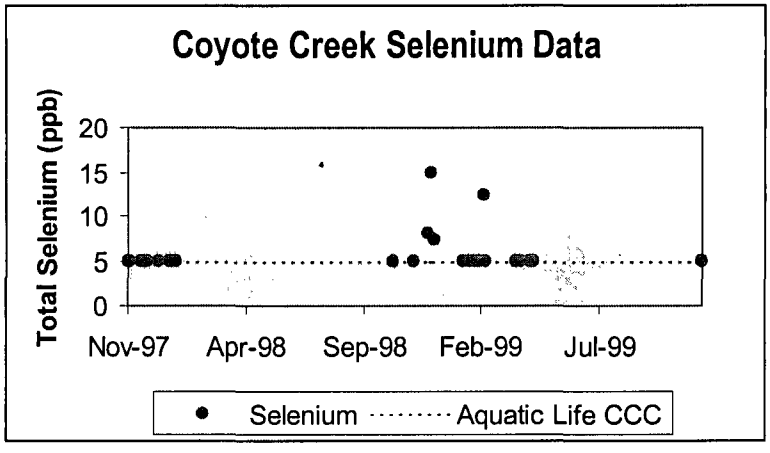
Through the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect fresh water aquatic life. The recommended Criteria Continuous Concentration for total selenium is 5 µg/l. This criterion range was exceeded in 19% of the sampling events.

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.

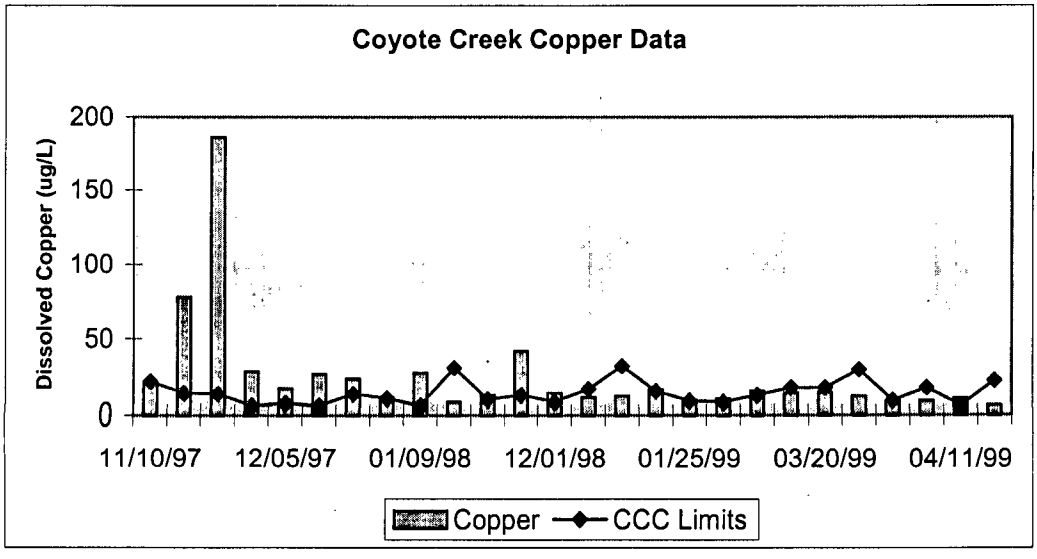
Beneficial Uses Affected

- 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.

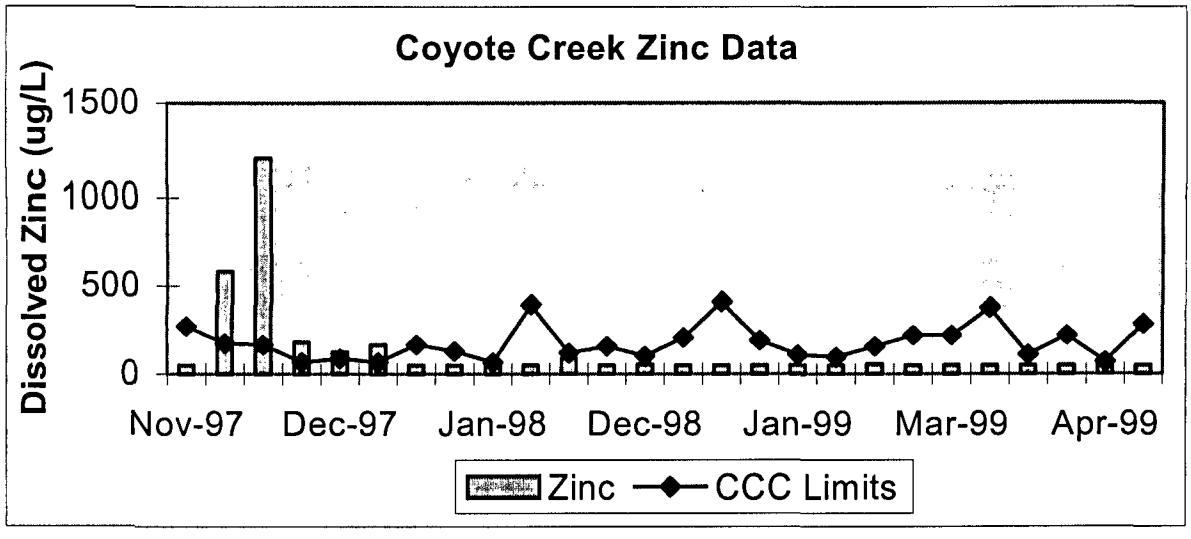
Beneficial Uses Affected

- 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.

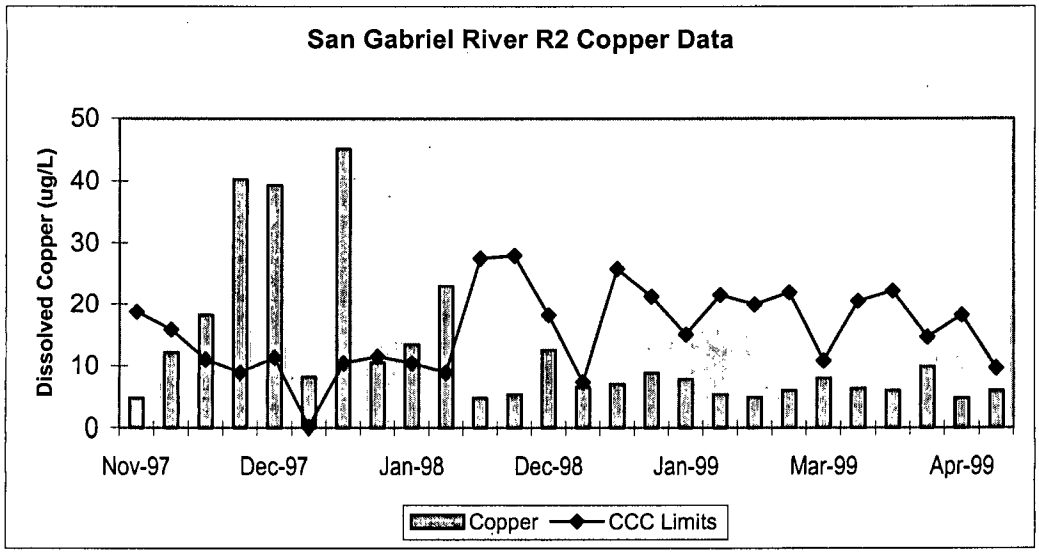
Beneficial Uses Affected

- 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

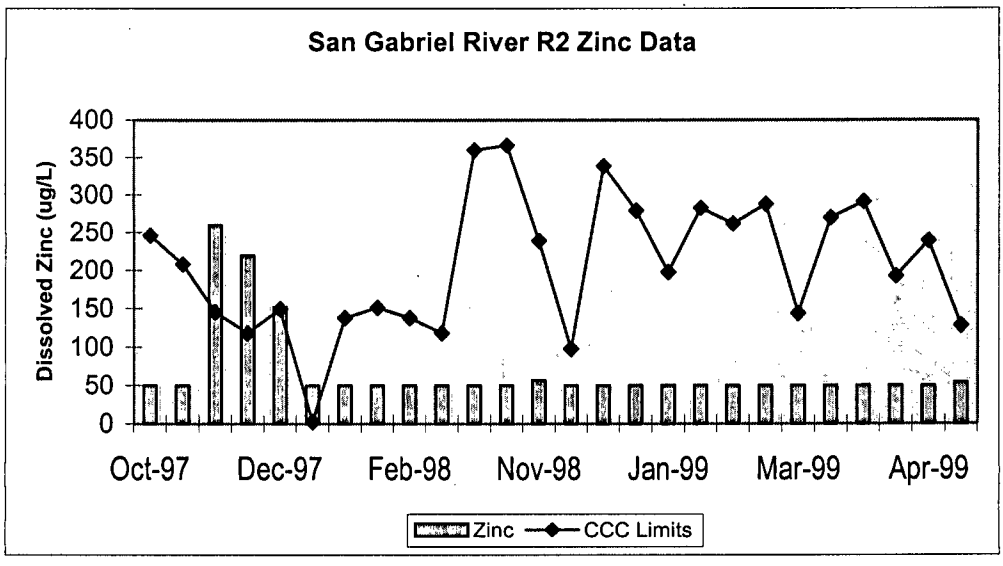
Beneficial Uses Affected

- 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 – Estuary
Ammonia as Nitrogen

Summary of Proposed Action

The San Gabriel River Estuary is proposed to be listed in the 2002 305(b) water quality assessment as "Not Supporting" (Impaired) due to non attainment of the ammonia aquatic life chronic criteria as described in the Basin Plan. The beneficial uses that are affected by this impairment relate to 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**	Ammonia as Nitrogen
Hydrologic Unit	405.15	**Source(s)**	Point Sources
Total Waterbody Size	41.5 miles	**TMDL Priority**	37
Size Affected	2.95 miles	**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Entire Estuary	**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.

Water Quality Objectives Not Attained

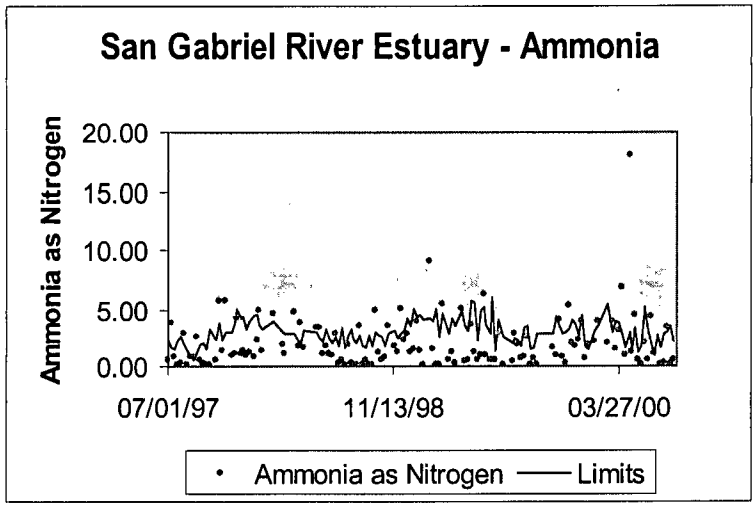
Though the California Toxic Rule, the United States Environmental Protection Agency promulgated water quality criteria to protect of fresh water aquatic life. The recommended Criteria Continuous Concentration (CCC) and Maximum Concentration (MC) for total ammonia nitrogen is dependent on pH and temperature of the water samples. After considering the event specific temperature and hardness values, the criterion ranges were exceeded in 29% of the sampling events for the CCC assessment and 2% for the MC assessment.

Beneficial Uses Affected

- estuarine habitat
- marine habitat
- wildlife habitat
- rare/endangered species
- spawning, reproduction, and/or early development

Data Assessment

The data reviewed for the assessment was collected by the County Sanitation Districts of Los Angeles County as part of the receiving water monitoring program for the San Jose Creek Water Reclamation plant.



Summary Table of Ammonia Nitrogen Data

	Ammonia-N (µg/l)
Dates of Sampling	11/10/97- 11/10/00
Number of Samples (n)	117
Minimum Data Value	0.1
Maximum Data Value	88.3
Median Data Value	1.9
Arithmetic Mean Value	3.5
Standard Deviation	5.69
Percent above CCC	29

Potential Sources

There are point sources discharges (POTWs) upstream of the estuary in addition to nonpoint source discharge from urban runoff. The data collected was primarily from dry weather sampling events. No stormwater data was available for the assessment, thus Board staff was unable to assess the concentrations which occurs during storms.

References

- Basin Plan, 1994
- California Toxics Rule, August 2000
- Watershed Management Initiative, 2000
- A compilation of Water Quality Goals, August 2000

San Gabriel River Watershed – San Jose Creek
pH (high)

Summary of Proposed Action

San Jose 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 exceedances of pH of above than 8.5, which violates the Basin Plan water quality objective for pH.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	San Jose Creek	**Pollutants/Stressors**	pH
Hydrologic Unit	405.15	**Source(s)**	Point and Nonpoint Sources
Total Waterbody Size	41.5 miles	**TMDL Priority**	37
Size Affected		**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Reach 1 and 2	**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 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

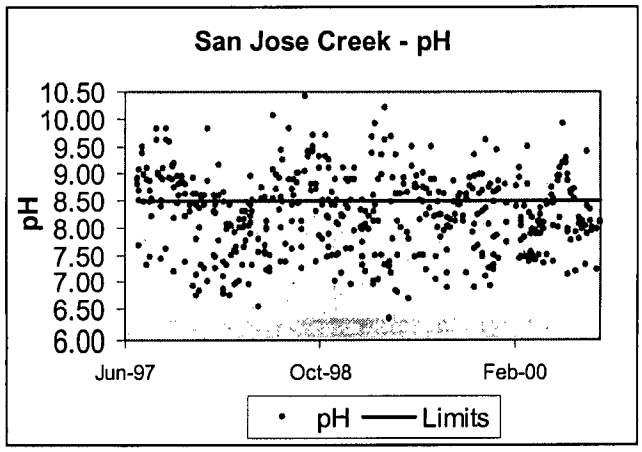
The Water Quality Control Plan for the Los Angeles Region (Basin Plan) states that, "The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges." This objective was not attained in Reach 2 of the San Gabriel River as indicated by the data assessment presented below.

Beneficial Uses Affected

- Basin Plan Objective
- Aquatic Life

Data Assessment

The chart below shows that during 1997- 2000 the pH maximum of 8.5 was exceeded in 33 samples. The LARWQCB and the San Jose Creek Water Reclamation Facility collected the data analyzed in the charts primarily during dry weather.



Summary Table of pH Data

	pH
Dates of Sampling	7/10/97- 9/10/00
Number of Samples (n)	474
Minimum Data Value	6.54
Maximum Data Value	10.4
Median Data Value	8.26
Arithmetic Mean Value	8.25
Standard Deviation	0.71
Percent above Limit of 8.5	38%

Potential Sources

There are point sources discharges (POTWs) upstream of San Jose Creek in addition to nonpoint source discharge from urban runoff. The data collected was primarily from dry weather sampling events. No stormwater data was available for the assessment, thus Board staff was unable to assess the concentrations which occurs during storms.

References

- Basin Plan, 1994
- Watershed Management Initiative, 2000
- California Toxics Rule, August 2000

California Regional Water Quality Control Board, Los Angeles Region

San Gabriel River Watershed – Coyote Creek
Dissolved Lead

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 exceedance of the dissolved lead 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 Lead
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 (CTR), the United States Environmental Protection Agency promulgated water quality criteria to protect fresh water aquatic life. The recommended Criteria Continuous Concentration for dissolved lead is dependent on the water hardness value. After considering the event specific hardness values, the range of CTR limits was determined to be 1.17 - 12.02 µg/l. This criterion range was exceeded in 69% of the sampling events.

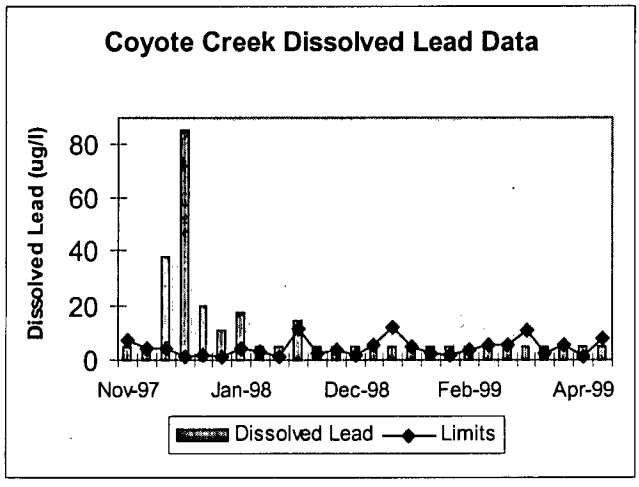
Beneficial Uses Affected

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

Data Assessment

In order to determine the concentration of dissolved lead 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 lead concentration. In general, the lower the hardness values the higher the dissolved lead limit.

The chart below shows a distinct trend in the concentration of dissolved lead. The data analyzed in the charts was collected from a storm water monitoring program. During the November and December 1997 storm events the concentration of dissolved lead shows increasing trend, and then decreases and stabilizes during the remaining events. Possible explanations may be related to the dilution by increased rainfall-related 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 Lead Data

	Dissolved Lead (µg/l)
Dates of Sampling	11/10/97- 11/10/99
Number of Samples (n)	27
Minimum Data Value	5.23
Maximum Data Value	85
Median Data Value	5
Arithmetic Mean Value	10.79
Standard Deviation	16.52
Percent above CCC	69%

Potential Sources

The sampling location for the dissolved lead 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 lead 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

Santa Clara River Reach 3 (Freeman Diversion to Fillmore Street A) 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 "Partially Supporting (Impaired)" for groundwater recharge.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Reach 3 (Below Fillmore at Santa Paula)	**Pollutants/Stressors**	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

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

Beneficial Uses Affected

Agriculture, Groundwater Recharge (and associated MUN beneficial use of underlying groundwater basin)

Data Assessment

Table 2. Summary of 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)

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

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)	Non-point 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."

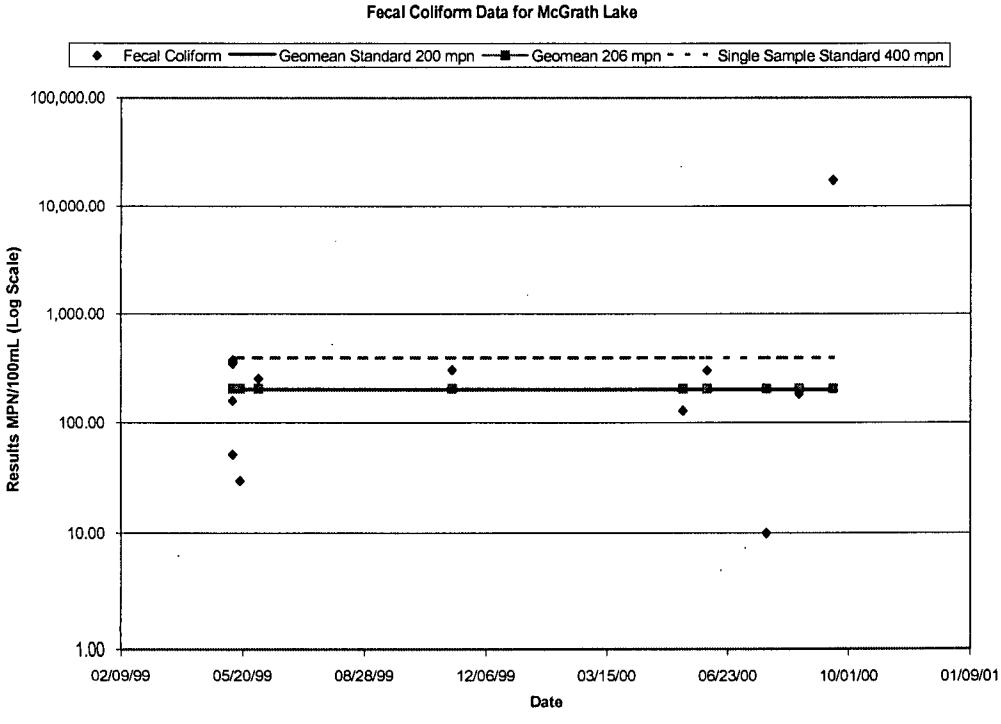
Beneficial Uses Affected

- 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/100 mL
Maximum Data Value	17329 MPN/100 mL
Median Data Value	256 MPN/100 mL
Arithmetic Mean Value	1528 MPN/100 mL
Standard Deviation	4749 MPN/100 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 non-point.

References

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

California Regional Water Quality Control Board, Los Angeles Region

Seaside Park
Total Coliform

Summary of Proposed Action

Seaside Park is a beach located just south of the Ventura River. Seaside Park is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the total coliform objective. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Seaside Park	Pollutants/Stressors	Total Coliform
Hydrologic Unit	403.11	**Source(s)**	Non point sources
Total Waterbody Size	0.5 miles	**TMDL Priority**	Low
Size Affected	0.5 miles	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire beach	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

Seaside Park is a beach located just south of the Ventura River. The beach is situated from Surfer's Point at the mouth of the Ventura River to the end of Promenade Park, at San Buenaventura State Beach. Seaside Park is located near the Ventura County Fairgrounds and next to Surfer's Point. The beach is in the City of San Buenaventura. The area near it is urban.

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 Ocean Plan total coliform limit of 20% of the samples at 1000 organisms/100 mL was exceeded.

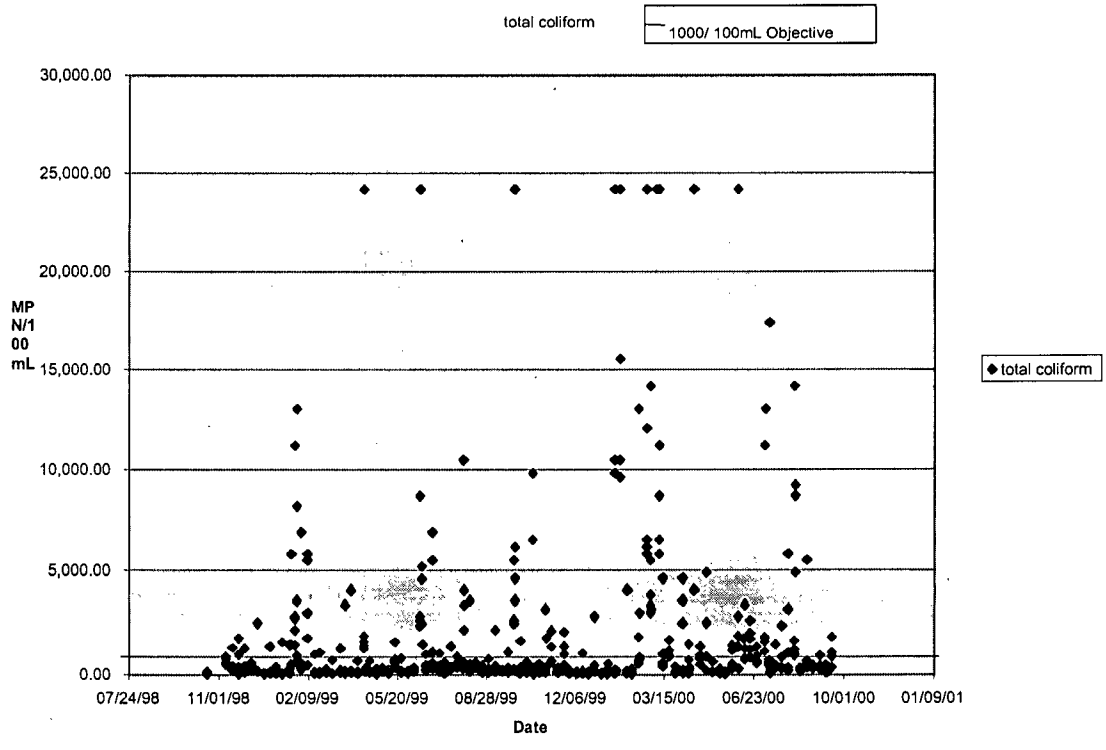
Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Total Coliform Data for Seaside Park

Dates of Sampling	10/98-9/00
Number of Samples (n)	567
Minimum Data Value	6 MPN/100 mL
Maximum Data Value	>24192 MPN/100 mL
Median Data Value	336 MPN/100 mL
Arithmetic Mean Value	2173MPN/100 mL
Standard Deviation	5061 MPN/100 mL
Percent above Objective	29% exceed 1000/100 mL



Potential Sources

Possible sources include non-point 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

Channel Islands Harbor Beach/Hobie Beach
Fecal Coliform

Summary of Proposed Action

Channel Islands Harbor Beach and Hobie Beach are adjacent beaches located on the south side near the entrance to Channel Islands Harbor in Port Hueneme. Channel Islands Harbor Beach and Hobie Beach are proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to greater than 10% 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	**Channel Islands Harbor Beach and Hobie Beach**	**Pollutants/Stressors**	**Fecal Coliform**
Hydrologic Unit	403.11	**Source(s)**	Non point sources
Total Waterbody Size	0.5 miles + harbor	**TMDL Priority**	Low
Size Affected	0.5 miles + harbor	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire harbor and beach	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

Channel Islands Harbor Beach and Hobie Beach are adjacent beaches located on the south side near the entrance to Channel Islands Harbor in Port Hueneme. Channel Islands Harbor is an urban harbor in Oxnard, next to Port Hueneme.

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 Ocean Plan fecal coliform limit of 10% of the samples at 400 MPN/100 mL was exceeded.

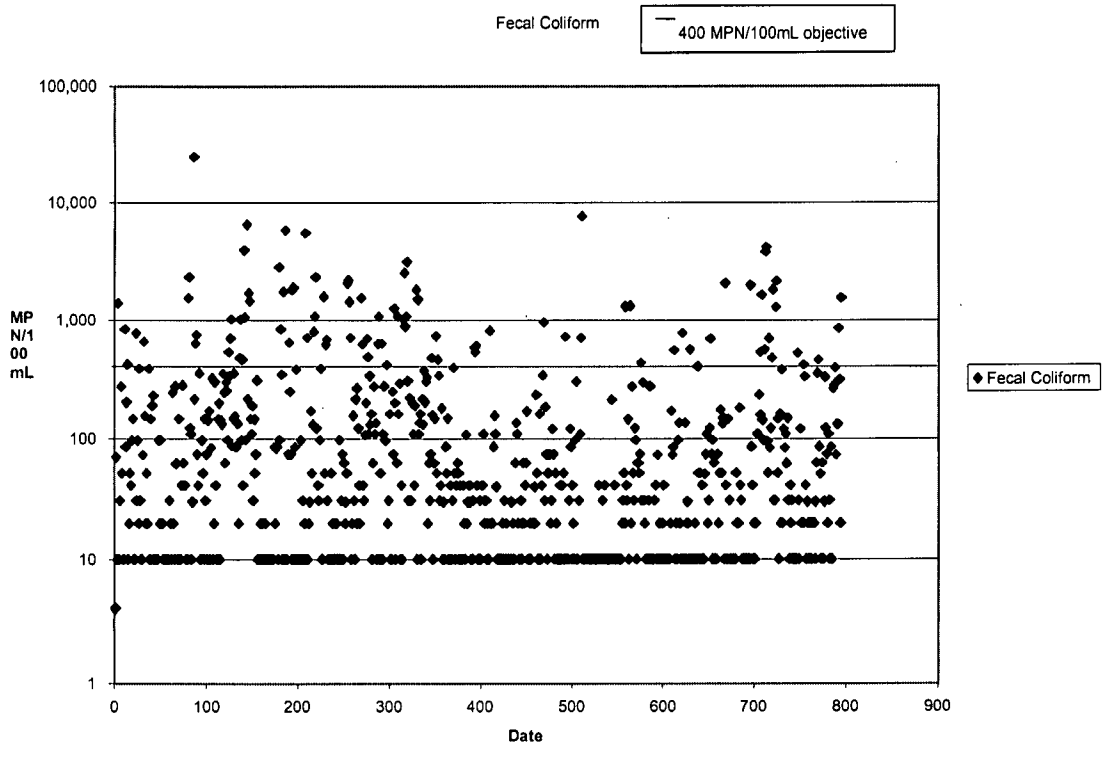
Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform Data for Channel Islands Harbor Beach and Hobie Beach

Dates of Sampling	10/98-9/00
Number of Samples (n)	795
Minimum Data Value	4 MPN/100 mL
Maximum Data Value	>24192 MPN/100 mL
Median Data Value	31.0 MPN/100 mL
Arithmetic Mean Value	248 MPN/100 mL
Standard Deviation	1056 MPN/100 mL
Number (Percent) above Objective	12% exceed 400/100 mL



Potential Sources

Possible sources include point and non-point 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

Ventura County Coastal Features
Ormond Beach, Peninsula Beach, Rincon Beach, Surfer's Point
Beach Postings

Summary of Proposed Action

Ormond Beach, Peninsula Beach, Rincon Beach and Surfer's Point are all coastal beaches in Ventura County. These beaches are proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to more than 10% of days per year having beach postings due to high bacterial indicator densities. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	**Ormond Beach, Peninsula Beach, Rincon Beach, Surfer's Point**	**Pollutants/Stressors**	**Beach Postings**
Hydrologic Unit	401.00, 402.10, 403.11	**Source(s)**	Point and nonpoint sources
Total Waterbody Size	Varies	**TMDL Priority**	Analytical Unit 23
Size Affected	Varies	**TMDL Start Date (Mo/Yr)**	2001
Extent of Impairment	Varies	**TMDL End Date (Mo/Yr)**	2003

Watershed Characteristics

A major feature of the coastline north of Mugu Lagoon is Ormond Beach and Ormond Beach Wetlands. There are a number of scenarios under consideration for restoration of this degraded yet valuable wetlands. Little is known of water quality in the Ormond Beach area. The Oxnard Treatment Plant discharges secondary effluent to the ocean off of Oxnard. The facility is currently investigating approaches to remove upstream brine dischargers in order to move toward water reclamation. Part of the reclaimed water is proposed for use in a seawater intrusion barrier project to protect the Oxnard Plain ground water basin. The ocean immediately off of the coast was part of Bight '98 and the 1994 Southern California Bight Pilot Project.

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 Regional Board has determined that if a beach monitoring location is posted by the local county health department due to high bacterial indicator densities more than 10% of days annually, the water contact recreation (REC-1) beneficial use is considered impaired.

Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Beginning in 1999, a new law requires public health officials in coastal counties to conduct weekly bacteriological testing for four bacterial indicators, between April 1 and October 31, at beaches visited annually by more than 50,000 people and at beaches with storm drains (including natural creeks, streams, and rivers that flow during the summer). Due to the popularity of Ventura County beaches for year-round activities, the Ventura County Board of Supervisors authorized the implementation of a program that expanded the monitoring program to all 12 months of the year. Ventura County Environmental Health Department conducts routine surf zone sampling at 52 beach locations. These data and the beach posting decisions of the County Environmental Health Department were reviewed by the Regional Board and used to assess current conditions of Ventura County beaches.

Table 2. Summary of Beach Posting Data for Selected Beaches in Ventura County

Beach Name	Ormond	Peninsula	Rincon	Surfer's Pt.
Dates of Sampling	2000	2000	2000	2000
Location	Industrial Drain (#43000)	#23000	Flagpole (#1050)	"Stables" (#13000)
Number of Beach Postings (days)	60	50	48	59

Potential Sources

Point and nonpoint sources.

References

Watershed Management Initiative Chapter (2000)
State Water Resources Control Board Beach Closure database (2000)

California Regional Water Quality Control Board, Los Angeles Region

Santa Clara River Estuary Beach/Surfer's Knoll
Fecal and Total Coliform (Delisting)

Summary of Proposed Action

Santa Clara River Estuary Beach/Surfer's Knoll is a beach on the Ventura County coastline that extends from McGrath Beach to Peninsula Beach on the north. Santa Clara River Estuary Beach/Surfer's Knoll is proposed to be **removed** from the 2002 305(b) water quality assessment as it is fully supporting (not impaired) as it meets the Ocean Plan objective for fecal and total coliforms. The beneficial use affected by this action is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Santa Clara River Estuary Beach/Surfer's Knoll	Pollutants/Stressors	Fecal and Total Coliforms
Hydrologic Unit	403.11	**Source(s)**	Non-point sources
Total Waterbody Size	0.25 miles	**TMDL Priority**	Analytical Unit 23
Size Affected	0.25 miles	**TMDL Start Date (Mo/Yr)**	NA
Extent of Impairment	Entire beach	**TMDL End Date (Mo/Yr)**	NA

Watershed Characteristics

Santa Clara River Estuary Beach/Surfer's Knoll is a beach on the Ventura County coastline that extends from the McGrath Beach to Peninsula Beach on the north. It is on the ocean side of the sand or beach. The east side of the beach is the Santa Clara River Estuary. Santa Clara River Estuary Beach/Surfer's Knoll is south of the Ventura Harbor, in an urban watershed area, the city of San Buenaventura.

Water Quality Objectives Now 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 Ocean Plan fecal coliform limit of 10% of the samples at 400 organisms/100 mL and total coliform limit of 20% of the samples at 1000 organisms/100 mL were met.

Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Fecal Coliform for Santa Clara River Estuary Beach/Surfer's Knoll.

Dates of Sampling	7/98-10/00
Number of Samples (n)	102
Minimum Data Value	2 /100 mL
Maximum Data Value	231 /100 mL
Median Data Value	10 /100 mL
Arithmetic Mean Value	25 /100 mL
Standard Deviation	36 /100 mL
Percent above Objective	0% exceed 400/100 mL

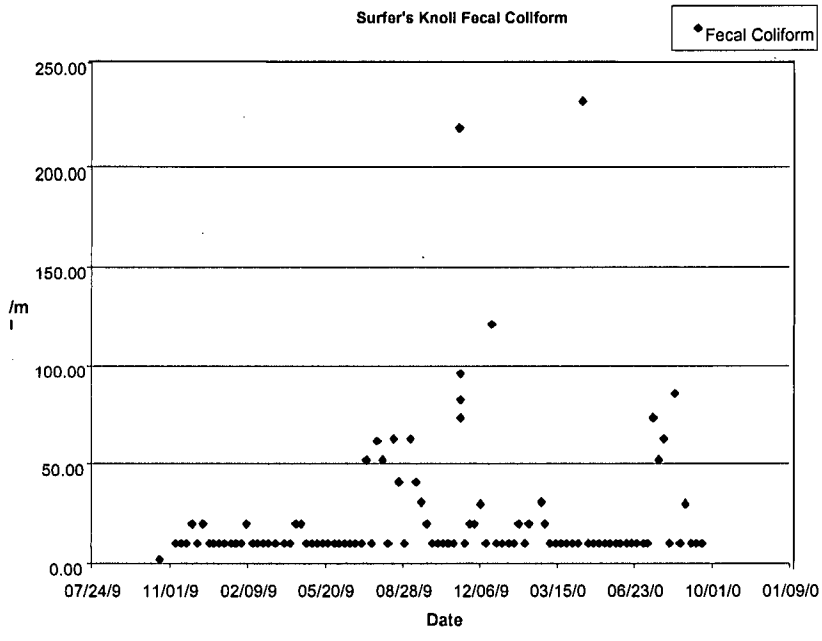
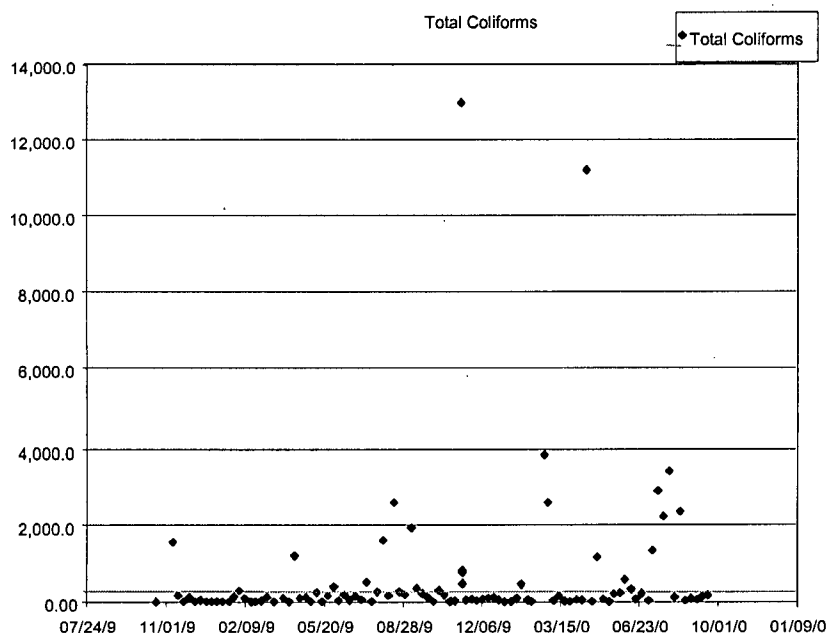


Table 3. Summary of Total Coliform for Santa Clara River Estuary Beach/Surfer's Knoll.

Dates of Sampling	7/98-10/00
Number of Samples (n)	102
Minimum Data Value	5 MPN/100 mL
Maximum Data Value	12997 MPN/100 mL
Median Data Value	115 MPN/100 mL
Arithmetic Mean Value	639 MPN/100 mL
Standard Deviation	1806 MPN/100 mL
Percent above Objective	15% exceed 1000/100 mL



Potential Sources

NA

References

Basin Plan 1994
Ocean Plan 1997
Ventura County Environmental Health Division

California Regional Water Quality Control Board, Los Angeles Region

San Buenaventura Beach
Total Coliform

Summary of Proposed Action

San Buenaventura Beach is located just south of Seaside Park, and the Ventura River. San Buenaventura Beach is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the total coliform objective. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	San Buenaventura Beach	Pollutants/Stressors	Total Coliform
Hydrologic Unit	403.11	**Source(s)**	Non point sources
Total Waterbody Size	2 miles	**TMDL Priority**	Low
Size Affected	2 miles	**TMDL Start Date (Mo/Yr)**	2012
Extent of Impairment	Entire beach	**TMDL End Date (Mo/Yr)**	2014

Watershed Characteristics

San Buenaventura Beach is located just south of Seaside Park and the Ventura River. The beach extends from Seaside Park at the end of Promenade Park to Marina Beach. The beach is in the City of San Buenaventura. The area near it is urban.

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 Ocean Plan total coliform limit of 20% of the samples above 1000 organisms/100 mL was exceeded.

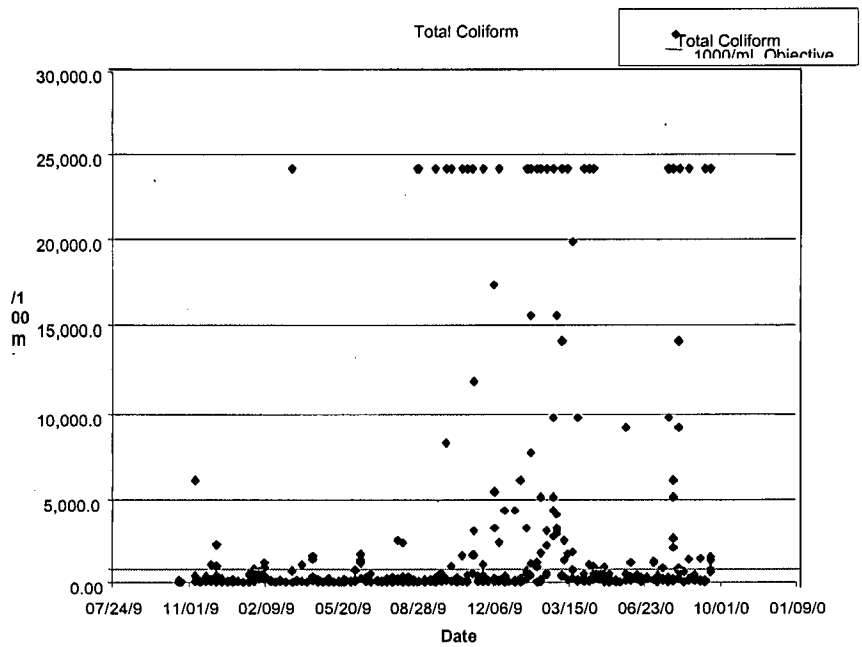
Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment

Table 2. Summary of Total Coliform Data for San Buenaventura Beach

Dates of Sampling	10/98-9/00
Number of Samples (n)	466
Minimum Data Value	10 /100 mL
Maximum Data Value	>24192 /100 mL
Median Data Value	157 /100 mL
Arithmetic Mean Value	27 /100 mL
Standard Deviation	6724 /100 mL
Percent above Objective	22.7% exceed 1000/100 mL



Potential Sources

Possible sources include non-point sources.

References

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

Draft Staff Report

2002 Update:

Clean Water Act Section 305(b) Report and Section 303(d) List of Impaired Waters

Los Angeles Region

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

January 29, 2002

TABLE OF CONTENTS

1 Introduction

Each of California's nine Regional Water Quality Control Boards has been asked to assist the State Board in preparing a statewide water quality assessment as required by section 305(b) of the Clean Water Act and updating the State's Clean Water Act section 303(d) list (SWRCB, 2001). The statewide water quality assessment (or 305(b) Report) summarizes the extent to which beneficial uses of waterbodies in the state are being supported. The 303(d) list is a subset of waterbodies assessed in the 305(b) Report, which have been identified as not supporting one or more of the beneficial uses designated for the waterbody. In other words, 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; major NPDES dischargers and particularly Publicly Owned Treatment Works (POTWs) submitted the majority of these. See section 5 for a list of reports, information and data used in the 2002 water quality assessment and update of the 303(d) list.

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 presented 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 Residue Levels (MTRLs) for protection of human health and National Academy of Science (NAS) guidelines for predator protection.

2.2 Delisting Factors

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

1. The original listing was based on exceeding EDLs (Elevated Data Levels) or other assessment guidelines not considered sufficient for determining water quality impairments.
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 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 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	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
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 Ground water recharge	Title 22 Primary MCLs; nitrogen species
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 A for a description and map of 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 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 human health and/or predator risk thresholds.
Partially supporting	No guideline

Assessment Designation	Assessment Guidelines
Not supporting	Data indicates fish tissue concentrations above human health and/or predator risk thresholds.
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 US 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 US Army Corps of Engineers, Los Angeles District by MEC Analytical Systems, 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 (the last comprehensive, region-wide 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. Sediment concentrations that exceed the "probable effects level" are usually associated with toxicity.

Two different "probable effects level" measures (see Table 3-3) 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 concentrations based on samples of fish filets or whole mussels were compared to maximum tissue residue levels (MTRLs). See Table 3-3. MTRLs are objectives developed to protect human health from consumption of fish or shellfish that contain substances at levels which could result in significant human health problems. MTRLs were developed by State Water Resources Control Board staff 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.

Tissue concentrations based on whole body samples of fish were compared to National Academy of Sciences (NAS) guidelines, which represent objectives to protect the organisms that contain the toxic substances, as well as the species that consume these contaminated organisms. See Table 3-3. These guidelines have not been updated since they were published in 1973; consequently, the recommended maximum concentrations for toxic substances are considered to be too high to be protective for all waterbodies in the region, but they can be used to identify highly contaminated areas.

Previous water quality assessments utilized the "elevated data level" (EDL) approach to identify impaired waterbodies. However, State Board, Regional Board and US EPA staff agree that the EDL is not a sufficient assessment guideline alone for determining impairment, therefore listings of impairment based solely on EDL exceedances have been dropped from the current water quality assessment. EDLs are not water quality standards; they simply represent a statistical comparison measure that ranks a given concentration of a particular substance with previous data collected for a specified monitoring program. State Board has used EDL calculations (usually EDL 85 or EDL 95, representing the 85^{th} or 95^{th} percentile of the entire set of measurements in the database) to describe unusually high chemical concentrations found within its State Mussel Watch, Toxic Substances Monitoring and Bay Protection and Toxic Cleanup Programs, and to compare findings in a particular area or region with the larger database of findings from all over the state. However, as State Board has indicated in the data reports for these programs, EDLs are not directly related to potentially adverse human or animal health effects; they do not assess adverse impacts, nor do they necessarily represent concentrations that may be damaging to organisms or to a human consuming these species. In addition, there is no direct relationship to MTRL levels or NAS guidelines.

Assessment of Impairment. Beneficial uses have been listed as impaired based upon exceedances of the thresholds or guidelines described above. 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 (in some cases, two different types of samples may have been collected during the same sampling event). For these data types, 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 insufficient for determining impairment (e.g.,

Elevated Data Levels calculated from the BPTCP, SMW or TSM databases; Median International Standards (MIS) based on a 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 EDL 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 chemistry and bioaccumulation data

Constituent	*Sediment ERM*	*Sediment PEL*	*Tissue MTRL (inland)*	*Tissue MTRL (bay/estuary)*	*Tissue MTRL (ocean) (ppb)*	*NAS guidelines (ppb)*
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		500
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	100 [1]
Total chlordane	6 ppb	4.79 ppb	8.0 ppb	8.3 ppb	0.32	100 [1]
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	
Total DDT	45.1 ppb	51.7 ppb				1000
Dieldrin			0.65 ppb	0.7 ppb	0.2	100 [1]
Endosulfan I			29700 ppb	64800 ppb		
Endosulfan II			29700 ppb	64800 ppb		
Endosulfan sulfate			29700 ppb	64800 ppb		
Endosulfan						100 [1]
Endrin	45 ppb		3020 ppb	3020 ppb		100 [1]
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		
Hexachloro-cyclohexane						100 [1]
Heptachlor			2.4 ppb	2.3 ppb	8.1	100 [1]
Heptachlor epoxide			1.1 ppb	1.2 ppb		100 [1]
HCB			6.5 ppb	6.7 ppb	2.0	100
Total PCB	180 ppb	188.8 ppb	5.3 ppb	5.3 ppb	0.6	500
Toxaphene			9.6 ppb	9.8 ppb	2.75	100 [1]
Total PAH	44792 ppb	16771 ppb				

[1] Individually or in combination. Chemicals in this group are referred to collectively as Chemical Group A.

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 177 changes to the 1998 303(d) list are proposed; 104 new listings are proposed and 73 de-listings are proposed. The net change to the 1998 303(d) list is the addition of 31 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, 77 are related to water chemistry, water column toxicity and bacterial indicators (see Table 4-2), while 27 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 (23); metals (18); nitrogen and its effects (13); chloride, TDS, sulfate, boron (12); pH (5); sedimentation (2); organics (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 (6); sediment chemistry (17); benthic community degradation (2); and sediment toxicity (2). 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 67 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 bacterial indicators (1). The tissue, sediment and benthic community de-listings are broken down as follows: tissue (57); sediment (9); 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 (SWRCB 1997).

The proposed de-listings would eliminate 11 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. See Table 4-6. The proposed new listings would add twelve 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;
- Peninsula Beach beach postings;
- Ormond Beach beach postings;
- Channel Islands Harbor Beach and Hobie Beach bacteria;
- Surfer's Point, Seaside Park and San Buenaventura Beach bacteria and beach postings; 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.

5 Data Relied Upon

5.1 Reports and Information

Aquatic Bioassay and Consulting Laboratories. The Marine Environment of Marina del Rey Harbor, Reports to the Department of Beaches and Harbors, County of Los Angeles, July 1995-June 1996; July 1996-June 1997; July 1997-June 1998; July 1998-June 1999.

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Jones, Howard M. Letter with photographs from Howard M. Jones, Trustee, Lena Jones Trust, to Melinda Becker, Los Angeles Regional Water Quality Control Board, dated April 26, 2001.

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US Army Corps of Engineers, Los Angeles District. 1997. Final Environmental Assessment for Los Angeles River Estuary Maintenance Dredging, Long Beach, California (July 1997).

US Department of Agriculture, Natural Resources Conservation Service. 1995. Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon, Ventura and Los Angeles Counties, California (May 1995).

5.2 External Data by Organization

Camarillo Sanitary District. Receiving water data.

Casitas Municipal Water District

City of Calabasas. Adopt-A-Creek water quality data.

City of Los Angeles. L.A.-Glendale and Tillman Water Reclamation Plants' receiving water data.

City of San Buenaventura

City of Thousand Oaks. Conejo Creek supplemental data.

City of Thousand Oaks. Hill Canyon and Olsen Road WWRPs' receiving water data.

County of Los Angeles, Department of Public Works. Stormwater monitoring data.

California Department of Water Resources, Southern District.

Heal the Bay. Bioassessment and physical habitat assessment data for Malibu Creek watershed.

Las Virgenes Municipal Water District. Tapia Water Reclamation Facility receiving water data.

Los Angeles County Sanitation Districts. Long Beach, Los Coyotes, Pomona, San Jose Creek, Saugus, Valencia and Whittier Narrows Water Reclamation Plants' receiving water data.

Ojai Valley Sanitation District.

Santa Barbara ChannelKeeper. Ventura River Watershed Monitoring Program.

Santa Monica BayKeeper. BeachKeeper Program: Citizen Water Quality Monitoring Data (January 1996-May 2001). Volumes I & II.

State Water Resources Control Board. Bay Protection and Toxic Cleanup Program.

State Water Resources Control Board. Beach Closure Report.

State Water Resources Control Board. Calleguas Creek toxicity monitoring data.

State Water Resources Control Board. State Mussel Watch Program.

State Water Resources Control Board. Toxic Substances Monitoring Program.

United Water Conservation District.

Ventura County Department of Health Services. Shoreline bacteriological data.

6 References

California Department of Fish and Game. 1998. 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, August 1998.

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Harrington, James M. 2001. Letter from James M. Harrington, California Department of Fish and Game, to Jonathan S. Bishop, Los Angeles Regional Water Quality Control Board, dated December 6, 2001.

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State Water Resources Control Board. 1997b. Toxic Substances Monitoring Program 1994-95 Data Report (October 1997).

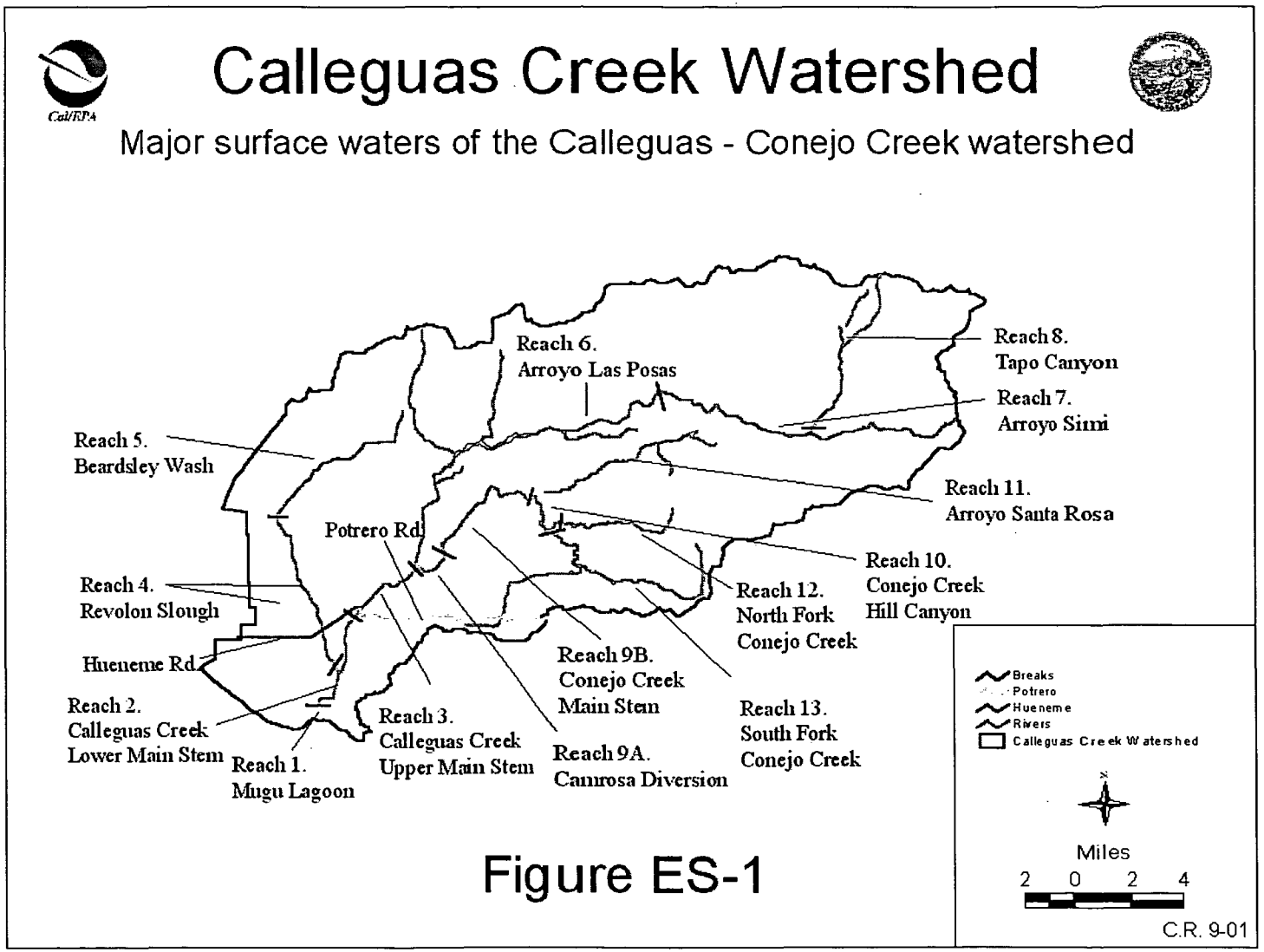
United States Environmental Protection Agency. 1997. *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement.*

APPENDIX A: Calleguas Creek Reach Descriptions

Reach No.	Reach Name	Geographic Description	1998 303(d) List Reach Name	Basin Plan Reach Name
1	Mugu Lagoon	Lagoon fed by Calleguas Creek	Mugu Lagoon Rio de Santa Clara/Oxnard Drain # 3 (tributaries)	Mugu Lagoon 403.11
2	Calleguas Creek South	Downstream (south) of Potrero Road	Calleguas Creek Reach 1 Duck Pond Ag Drain/Mugu Drain /Oxnard Dr. (tributaries)	Calleguas Creek Estuary 403.11 Calleguas Creek 403.11
3	Calleguas Creek North	Potrero Road upstream to confluence Conejo Creek	Calleguas Creek Reach 3	Calleguas Creek 403.11
4	Revolon Slough	Revolon Slough from confluence with Calleguas Creek Estuary to Central Avenue	Revolon Slough	Revolon Slough 403.11
5	Beardsley Wash	Revolon Slough upstream of Central Avenue	Beardsley Channel	Beardsley Wash 403.61
6	Arroyo Las Posas	Confluence with Conejo Creek to Hitch Road	Arroyo Las Posas Reaches 1 and 2 Fox Barranca (tributary)	Calleguas Creek 403.12 Arroyo Las Posas 403.12; 403.62
7	Arroyo Simi	End of Arroyo Las Posas (Hitch Rd) to headwaters in Simi Valley	Arroyo Simi Reaches 1and 2	Arroyo Simi 403.62; 403.67
8	Tapo Canyon	Confluence with Arroyo Simi up Tapo Canyon to headwaters	Tapo Canyon Reach 1	Tapo Canyon Creek 403.66; 403.67; Gillibrand Canyon Creek 403.66; 403.67
9A	Conejo Creek	Extends from the confluence with Calleguas Creek to the Camrosa Diversion	Conejo Creek Reach 1	403.12 Arroyo Conejo 403.64
9B	Conejo Creek main stem	Extends from Camrosa Diversion to the Confluence with Arroyo Santa Rosa	Conejo Creek Reaches 1 and 2	Arroyo Conejo 403.64
10	Hill Canyon reach of	Confluence with Arroyo Santa Rosa to	Conejo Creek Reach 2	Arroyo Conejo 403.64

Reach No.	Reach Name	Geographic Description	1998 303(d) List Reach Name	Basin Plan Reach Name
	Conejo Creek	confluence with N. Fork; and N. Fork to just above Hill Canyon WWTF	Conejo Creek Reach 3 Conejo Creek/ Arroyo Conejo North Fork	
11	Arroyo Santa Rosa	Just upstream from the confluence with Conejo Creek to headwaters	Arroyo Santa Rosa	Arroyo Santa Rosa 403.63; 403.65
12	North Fork Conejo Creek	From just above Hill Canyon WWTF to headwaters of the North Fork	Conejo Creek North Fork	North Fork Arroyo Conejo 403.64
13	South Fork Conejo Creek	Confluence with N. Fork to headwaters of the South Fork—two channels	Conejo Creek Reaches 3 and 4 Conejo Creek South Fork	Arroyo Conejo 403.68

Map of Calleguas Creek Watershed Stream Reaches used in 2002 Water Quality Assessment



APPENDIX B: 2002 Revisions to 1998 303(d) List

(Revisions to 1998 303(d) list shown in underline/strikeout)

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
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

Table 4-5: 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	Sediment (TBT)	70	no guideline
Ballona Creek	Ballona Creek	R	Tissue (arsenic)	57	no MTRL
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 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 (dacthal)	5	based on EDL
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	Mugu Lagoon	E	Tissue (Dacthal)	5	no defensible guideline
Calleguas Creek	Revolon Slough Main Branch	R	Sediment (dacthal)	5	no defensible guideline
LA County Coastal	Colorado Lagoon	T	Tissue (Lead)	83	based on EDL
LA County Coastal	LA Fish Harbor	B	Sediment (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	Sediment (TBT)	79	no guideline
LA County Coastal	LA Harbor Main Channel	B	Sediment (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 (Lead)	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	did not exceed NAS guideline in 1992
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

Table 4-5: 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
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
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 4-4: Draft De-listings for 2002 303(d) List - Water Chemistry and Water Column Toxicity

Waterbody	Waterbody Type	Cause	TMDL Analytical Unit
Calleguas Creek R1 (Reach 2)	R	Water column toxicity	2
Conejo Creek Reach 1 (Reach 9A)	R	Org. enrich/low DO	1
Conejo Creek Reach 1 (Reach 9A)	R	Water column toxicity	2
Conejo Creek Reach 2 (Reach 10)	R	Org. enrich/low DO	1
Conejo Creek Reach 3 (Reach 11)	R	Org. enrich/low DO	1
Santa Clara River Estuary Beach/Surfer's Knoll	C	Total and fecal coliform	23

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

Watershed	Waterbody	Waterbody Type	Cause	Priority	TMDL Analytical Unit	Start Date	End Date
Calleguas Creek	Conejo Creek (Calleguas Creek Reach 13)	R	Tissue (chlordane)		5	2002	2005
Calleguas Creek	Conejo Creek (Calleguas Creek Reach 13)	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Conejo Creek (Calleguas Creek Reach 13)	R	Tissue (HCH)		5	2002	2005
Calleguas Creek	Conejo Creek (Calleguas Creek Reach 13)	R	Tissue (PCBs)		5	2002	2005
Calleguas Creek	Mugu Lagoon (Reach 1)	W	Benthic community degradation		5	2002	2005
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
LA River	Estuary (Queensway Bay)	E	Sediment (zinc)		75	2004	2007
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

Table 4-2: 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	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, total		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, dissolved		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	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	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek R 2 (Reach 10)	R	Nitrite as Nitrogen		1	Jun-05	Apr-02
Calleguas Creek	Conejo Creek R 3 (Reach 11)	R	Fecal coliform	L	none	2011	2013
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 & closures	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, total		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Aluminum, total		13	2002	2004

Table 4-2: 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 as Nitrogen	L	none	2012	2014
Los Angeles River	McCoy Canyon Creek (LAR R 2)	R	Selenium, total		13	2002	2004
Malibu Creek	Cold Creek	R	Algae		50	1999	2002
Malibu Creek	Malibu Creek	R	Selenium, total		68	2006	2008
Malibu Creek	Malibu Creek, Las Virgenes Creek, Triunfo Creek, Medea Creek	R	Sedimentation	L		2012	2014
Malibu Creek	Malibu Lagoon	W	pH		71	2007	2010
San Gabriel R	Coyote Creek	R	Copper, dissolved		39	2004	2006
San Gabriel R	Coyote Creek	R	Lead, 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 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	Ammonia as Nitrogen		37	2001	2003
San Gabriel R	San Gabriel River Estuary	R	Trash	L	none	2011	2012
San Gabriel R	San Jose Creek	R	pH		37	2001	2003
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	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

Table 4-2: 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 County Coastal	Ormond Beach (Industrial Drain - #43000)	C	Beach postings	L	none	2012	2014
Ventura County Coastal	Peninsula Beach (#23000)	C	Beach postings	L	none	2012	2014
Ventura County Coastal	San Buenaventura Beach	C	Total Coliform	L	none	2012	2014
Ventura County Coastal	Rincon Beach (Flagpole - #1050)	C	Beach postings	L	none	2012	2014
Ventura County Coastal	Surfer's Point ("Stables" - #13000)	C	Beach postings	L	none	2012	2014
Ventura County Coastal	Seaside Park	C	Total Coliform	L	none	2012	2014
Ventura County Coastal	Channel Islands Harbor Beach & Hobie Beach	C	Fecal Coliform	L	none	2012	2014
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 Reach 4)	R	Total Nitrogen		88	2003	2005

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	5	0	0	7	12	-2
Los Angeles River	9	5	0	4	18	10
San Gabriel River	9	0	0	2	11	7
Santa Clara River	12	0	0	0	12	12
Malibu Creek	4	0	0	6	10	-2
Ventura River	5	0	0	8	13	-3
Calleguas Creek	23	5	5	24	57	-1
LA County Coastal	2	14	0	12	28	4
Ventura County Coastal	8	3	1	4	16	6
Total	77	27	6	67	177	31

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	5	0	0	7	12	-2
Los Angeles River	9	5	0	4	18	10
San Gabriel River	9	0	0	2	11	7
Santa Clara River	12	0	0	0	12	12
Malibu Creek	4	0	0	6	10	-2
Ventura River	5	0	0	8	13	-3
Calleguas Creek	23	5	5	24	57	-1
LA County Coastal	2	14	0	12	28	4
Ventura County Coastal	8	3	1	4	16	6
Total	77	27	6	67	177	31

From: Renee DeShazo
To: Wilson, Craig J.
Date: 9/12/02 9:17AM
Subject: Re: Thanks for Answers

Correct.

Renee DeShazo
Environmental Scientist
Los Angeles Regional Water Quality Control Board
(213) 576-6783
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The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption.
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at: http://www.swrcb.ca.gov/news/echallenge.html ***

>>> Craig J. Wilson 09/12/02 07:10AM >>>
Hi Renee,

Thanks for the quick response to my questions. Here's my understanding now:

1. East Fork San Gabriel River = Upper San Gabriel River
2. The LA River Trash TMDL covers listings for:
   - LA River Reaches 1, 2, 3, 4, and 5
   - Echo Park Lake
   - Peck Road Park Lake
   - Lincoln Park Lake
3. The Ballona Creek Trash TMDL covers listings for:
   - Ballona Creek
   - Ballona Creek Estuary (Wetland)

Thanks...

CJWilson
916.341.5560

From: Elizabeth Erickson
To: Craig J. Wilson; Renee DeShazo; Samuel Unger
Date: 9/19/02 4:05PM
Subject: Santa Clara nutrient reassessment Reach 6 (EPA reach 8)

For your comments, the reassessment of santa clara reach 6 with all the new data added from RWQCB and CSDLA. I am cleaning up the data table s to send on Monday.

Recommendation:
list for nitrite-nitrogen
retain listing for organic enrichment/DO
delist for nitratenitrogen+nitrite nitrogen

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
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The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
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http://www.swrcb.ca.gov/news/echallenge.html ***

CC: Jonathan Bishop; Melinda Becker; Tracy Vergets

Water Body	Santa Clara River Reach 6 (EPA Reach 8)
Stressor/Media/Beneficial Use	Dissolved Oxygen
Data quality assessment. Extent to which data quality requirements met.	Poor overall
Linkage between measurement endpoint and beneficial use or standard	Poor overall, aquatic life stressor is in evening and samples taken during mid-day.
Utility of measure for judging if standards or uses are not attained	Poor
Water Body-specific Information	Water Quality changes rapidly due to rising groundwater, tributaries and POTW discharge
Data used to assess water quality	144 observations
Spatial representation	Poor location spread as only 1 spot sampled
Temporal Representation	Poor daily spread as expect DO Diurnal cycle and all samples taken 9am-2 pm when DO should be elevated, Good seasonal spread as every month sampled equally, Poor annual spread as all data were collected 1999-2001
Data Type	Dissolved oxygen meter
Use of standard method	Impairment <5 mg/L as per basin plan
Potential Source(s) of Pollutant	Point Source, Non point source
Alternative Enforceable Program	None: Ammonia program does not specify DO limits
Number of samples not in compliance	2
% not in compliance	1.3%
RWQCB Recommendation	Do not delist due to poor data distribution
SWRCB Staff Recommendation	

Water Body	Santa Clara River Reach 6 (EPA Reach 8)
Stressor/Media/Beneficial Use	Organic Enrichment
Data quality assessment. Extent to which data quality requirements met.	Examined Algae % cover: Poor overall
Linkage between measurement endpoint and beneficial use or standard	Algae % cover and aquatic life beneficial use: Poor overall
Utility of measure for judging if standards or uses are not attained	Algae % cover: Poor
Water Body-specific Information	Water Quality changes rapidly due to rising groundwater, tributaries and POTW discharge
Data used to assess water quality	10 observations
Spatial representation	Poor location spread as 2 spots sampled
Temporal Representation	Fair seasonal spread as summer and fall measured, poor annual spread as all data were collected in 2001-2002
Data Type	% cover floating algae
Use of standard method	Impairment>30% cover as per literature value (See RWQCB recommendation on Malibu for algae)
Potential Source(s) of Pollutant	Point Source, Non point source
Alternative Enforceable Program	None: Ammonia program does not specify algae limits
Number of samples not in compliance	2
% not in compliance	20%
RWQCB Recommendation	Do not delist due to poor data quality and number of samples not in compliance
SWRCB Staff Recommendation	

Water Body	Santa Clara River Reach 6 (EPA Reach 8)
Stressor/Media/Beneficial Use	Nitrite-nitrogen
Data quality assessment. Extent to which data quality requirements met.	Good, quarterly NPDES samples
Linkage between measurement endpoint and beneficial use or standard	Average to Good for human health beneficial use requirements
Utility of measure for judging if standards or uses are not attained	Average to Good
Water Body-specific Information	Water Quality changes rapidly due to rising groundwater, tributaries and POTW discharge
Data used to assess water quality	36 observations
Spatial representation	Poor location spread as only 2 spots sampled
Temporal Representation	Good seasonal spread as at least quarterly samples, Good annual spread as all data were collected 1997-2002
Data Type	Mg/L
Use of standard method	Impairment>1 mg/L as per basin plan
Potential Source(s) of Pollutant	Point Source, Non point source
Alternative Enforceable Program	None: Ammonia programs do not specify nitrite levels
Number of samples not in compliance	15
% not in compliance	42%
RWQCB Recommendation	List
SWRCB Staff Recommendation	

Water Body	Santa Clara River Reach 6 (EPA Reach 8)
Stressor/Media/Beneficial Use	Nitrate nitrogen + nitrite-nitrogen
Data quality assessment. Extent to which data quality requirements met.	Average to Good
Linkage between measurement endpoint and beneficial use or standard	Average to Good
Utility of measure for judging if standards or uses are not attained	Average to Good, NPDES Quarterly Sampling
Water Body-specific Information	Water Quality changes rapidly due to rising groundwater, tributaries and POTW discharge
Data used to assess water quality	44 observations
Spatial representation	Poor location spread as only 3 spots sampled
Temporal Representation	Good seasonal spread as at least quarterly samples, Good annual spread as all data were collected 1997-2002
Data Type	Mg/L
Use of standard method	Impairment>10 mg/L as per basin plan
Potential Source(s) of Pollutant	Point Source, Non point source
Alternative Enforceable Program	None: Ammonia program does not include Nitrate-nitrogen+Nirtrite-nitrogen limits
Number of samples not in compliance	1
% not in compliance	2.3%
RWQCB Recommendation	Delist
SWRCB Staff Recommendation	

From: Elizabeth Erickson
To: Samuel Unger
Date: 9/11/02 9:10AM
Subject: 303(d) santa clara

Craig Wilson called me this morning and asked me to review new DO data for the upper Santa Clara River which I received on August 23. Please advise.

Background:
LACSD asked to delist reach 6 (EPA Reach 8) for DO and provided a summary of about 200 data points collected between 1999 and 2001 before the deadline for submission. Renee forwarded me this summary and we agreed that I couldn;t evaluate it without looking at the individual data points. I was speaking with Sharon Landau on another issue and mentioned that I did not have the individual data points. She had them sent to me after the date for data submission.

I saw Sharon Landau at the Santa Clara nutrient meeting on Monday and appologized if I misled her, but that I couldn;t evaluate the data since it was not in the original package. I explained that I had tried to get Regional Board data included which arrived at Craig;s office the day after the closing date and was told this data would not be included.

Today Craig called to say he had heard from Sharon Green, who wanted to know why we had not evaluated the data.

My recommendation is that we extend the work I began for Renee and Melenee which looked at all the nutrient listings for Reach 6 (EPA Reach 8), including the new DO data and all the Regional Board data. The result will likely be 1) new listing for nitrite, 2) delist for DO and nitrate-nitrite, 3)maintain listing for organic enrichment, 4) maintain listing for ammonia and 5) Notice of Violation for nitrite.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
***For a list of simple ways to reduce demand and cut your energy costs, see the tips at:
http://www.swrcb.ca.gov/news/echallenge.html ***

CC: Craig J. Wilson; Jonathan Bishop; Melenee Emanuel; Melinda Becker; Renee DeShazo