

Addendum to Agenda Item #13

**Discussion of 2002 Water Quality Assessment Effort and Update of
303(d) List of Impaired Waterbodies**

December 13, 2001

*(Replacement pages for Board Package reflecting changes since the Board
Package was mailed.)*

Table 4-1. Summary of Proposed Changes to 303(d) List
(Reflects changes since Board Package was mailed.)

Watershed	New Listings		Delistings		Total changes to 303(d) List	Net change to 303(d) List
	Water column	Tissue/Sed	Water column	Tissue/Sed		
Ballona Creek	6	0	0	8	14	-2
Los Angeles River	9	4	0	4	17	9
San Gabriel River	7	0	1	2	10	4
Santa Clara River	12	0	0	1	13	11
Malibu Creek	3	0	0	6	9	-3
Ventura River	5	0	0	8	13	-3
Calleguas Creek	22	5	5	33	65	-11
LA County Coastal	2	14	0	12	28	4
Ventura County Coastal	7	8	0	4	19	11
Total	73	31	6	78	188	20

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Table 4-2: Draft New Listings for 2002 303(d) List - Water Chemistry, Water Column Toxicity and Bacterial Indicators
(Reflects changes since Board Package was mailed)

Watershed	Waterbody	Waterbody Type	Cause	Priority	Analytical Unit	Start Date	End Date
Ballona Creek	Ballona Creek	R	Aluminum		57	2002	2004
Ballona Creek	Ballona Creek	R	Copper, dissolved		57	2002	2004
Ballona Creek	Ballona Creek	R	Lead, dissolved		57	2002	2004
Ballona Creek	Ballona Creek	R	pH	L	none	2011	2013
Ballona Creek	Ballona Creek	R	Selenium		57	2002	2004
Ballona Creek	Ballona Creek	R	Zinc, dissolved		57	2002	2004
Calleguas Creek	All (except Conejo Ck.)	R	Sedimentation		5	2003	2005
Calleguas Creek	Arroyo Las Posas R1/R2 (Reach 6)	R	Fecal coliform	L	none	2011	20
Calleguas Creek	Arroyo Las Posas R1/R2 (Reach 6)	R	Nitrate as NO3		1	1997	Apr-02
Calleguas Creek	Arroyo Simi (Reach 7)	R	Water column toxicity		2	2003	2005
Calleguas Creek	Arroyo Simi R1 (Reach 7)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Calleguas Creek R1 (Reach 2)	R	Copper		6	2004	2006
Calleguas Creek	Calleguas Creek R1 (Reach 2)	R	DDT (in water column)		5	2003	2005
Calleguas Creek	Calleguas Creek R1 (Reach 2)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek (Reach 9B)	R	Unnatural foam/scum	L	none	2011	2013
Calleguas Creek	Conejo Creek R 1 (Reach 9A)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek R 2 (Reach 10)	R	Chloride		3	1998	Jan-02
Calleguas Creek	Conejo Creek R 2 (Reach 10)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek R 2 (Reach 10)	R	Nitrite as N		1	Jun-05	Apr-02
Calleguas Creek	Conejo Creek R 3 (Reach 11)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Conejo Creek R 3 (Reach 13)	R	Chloride		3	1998	Jan-02
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	NITRATE (AS NITROGEN)		1	1997	Apr-02
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	NITRATE (AS NO3)		1	1997	Apr-02
Calleguas Creek	Conejo Creek Reach 1 (Reach 9A)	R	NITRITE (AS NITROGEN)		1	1997	Apr-02
Calleguas Creek	Revolon Slough (Reach 4)	R	Boron		4	1998	2004
Calleguas Creek	Revolon Slough (Reach 4)	R	Chloride		3	1998	Jan-02
Calleguas Creek	Revolon Slough (Reach 4)	R	Fecal coliform	L	none	2011	2013
Calleguas Creek	Revolon Slough (Reach 4)	R	Nitrate as NO3		1	1997	Apr-02
Calleguas Creek	Revolon Slough (Reach 4)	R	Sulfate		4	1998	2004
Calleguas Creek	Revolon Slough (Reach 4)	R	Total Dissolved Solids		4	1998	2004
LA County Coastal	Avalon Beach	C	Beach postings	L	none	2011	2013
LA County Coastal	Castlerock Beach	C	Total Coliform		48	2000	2002
Los Angeles River	Dry Canyon Creek (LAR R 2)	R	Fecal Coliform		15	2000	Jun-02

*Changes since Board Package was mailed are in strikeout/underline.

Table 4-2: Draft New Listings for 2002 303(d) List - Water Chemistry, Water Column Toxicity and Bacterial Indicators
(Reflects changes since Board Package was mailed)

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Watershed	Waterbody	Waterbody Type	Cause	Priority	Analytical Unit	Start Date	End Date
Los Angeles River	Dry Canyon Creek (LAR R 2)	R	Selenium		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Aluminum, total		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Cadmium, dissolved		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Copper, dissolved		13	2002	2004
Los Angeles River	Los Angeles River - Reach 1	R	Zinc, dissolved		13	2002	2004
Los Angeles River	McCoy Canyon Creek (LAR R 2)	R	Fecal Coliform		15	2000	Jun-02
Los Angeles River	McCoy Canyon Creek (LAR R 2)	R	Nitrate	L	none	2012	2014
Los Angeles River	McCoy Canyon Creek (LAR R 2)	R	Selenium		13	2002	2004
Malibu Creek	Cold Creek	R	Algae		50	1999	2003
Malibu Creek	Malibu Creek	R	Selenium, total		68	2006	2008
Malibu Creek	<u>Malibu Creek, Las Virgenes Creek, Triunfo Creek, Medea Creek</u>	R	<u>Sedimentation</u>	<u>L</u>		2012	2014
San Gabriel R	Coyote Creek	R	Copper, dissolved		39	2004	2006
San Gabriel R	Coyote Creek	R	Selenium, total		39	2004	2006
San Gabriel R	Coyote Creek	R	Zinc, dissolved		39	2004	2006
San Gabriel R	Reach 1	R	Nitrite as N		37	2001	2003
San Gabriel R	Reach 2	R	Copper, dissolved		39	2004	2006
San Gabriel R	Reach 2	R	Zinc, dissolved		39	2004	2006
San Gabriel R	San Gabriel River Estuary	R	Trash	L	none	2011	2012
Santa Clara R	Hopper Creek	R	Sulfate	L	none	2012	2014
Santa Clara R	Hopper Creek	R	TDS	L	none	2012	2014
Santa Clara R	Piru Creek	R	pH		32	2001	2003
Santa Clara R	Pole Creek	R	Sulfate	L	none	2012	2014
Santa Clara R	Pole Creek	R	TDS	L	none	2012	2014
Santa Clara R	Reach 3	R	Nitrate as N		32	2004	2006
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

*Changes since Board Package was mailed are in strikeout/underline.

Table 4-2: Draft New Listings for 2002 303(d) List - Water Chemistry, Water Column Toxicity and Bacterial Indicators
(Reflects changes since Board Package was mailed)

Watershed	Waterbody	Waterbody Type	Cause	Priority	Analytical Unit	Start Date	End Date
Ventura County Coastal	Ormond Beach (Industrial Drain - #43000)	C	Beach postings		23	2001	2003
Ventura County Coastal	Peninsula Beach (#23000)	C	Beach postings		23	2001	2003
Ventura County Coastal	Rincon Beach (Creek mouth - #1000)	C	Beach postings		23	2001	2003
Ventura County Coastal	Rincon Beach (Flagpole - #1050)	C	Beach postings		23	2001	2003
Ventura County Coastal	Rincon Creek	R	Fecal Coliform		23	2001	2003
Ventura County Coastal	Surfer's Point ("Stables" - #13000)	C	Beach postings		23	2001	2003
Ventura R	Canada Larga	R	Dissolved Oxygen		88	2003	2003
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 Nitrogeh		88	2003	2005

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*Changes since Board Package was mailed are in strikeout/underline.

Table 4-3: Draft New Listings for 2002 303(d) List - Sediment Chemistry and Toxicity, Tissue Chemistry and Benthic Community
 (Reflects changes since Board Package was mailed)

Watershed	Waterbody	Waterbody Type	Cause	Priority	TMDL Analytical Unit	Start Date	End Date
Calleguas Creek	Arroyo Simi R1 (Calleguas Creek Reach 7)	R	Tissue (DDT)		5	2002	2005
Calleguas Creek	Arroyo Simi R1 (Calleguas Creek Reach 7)	R	Tissue (PCBs)		5	2002	2005
Calleguas Creek	Calleguas Creek R 1 (Calleguas Creek Reach 2)	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Calleguas Creek R 1 (Calleguas Creek Reach 2)	R	Tissue (HCH)		5	2002	2005
Calleguas Creek	Calleguas Creek R 2 (Calleguas Creek Reach 2)	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Calleguas Creek R 2 (Calleguas Creek Reach 2)	R	Tissue (HCH)		5	2002	2005
Calleguas Creek	Conejo Creek (Calleguas Creek Reach 13)	R	Tissue (chlordan)		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	Duck Pond Ag Drain/Mugu Drain/Oxnard Drain #2- (Calleguas Creek Reach 2)	R	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Duck Pond Ag Drain/Mugu Drain/Oxnard Drain #2- (Calleguas Creek Reach 2)	R	Tissue (HCB)		5	2002	2005
Calleguas Creek	Mugu Lagoon (Reach 1)	W	Benthic community degradation		5	2002	2005
Calleguas Creek	Mugu Lagoon (Reach 1)	W	Tissue (dieldrin)		5	2002	2005
Calleguas Creek	Mugu Lagoon (Reach 1)	W	Tissue (toxaphene)		5	2002	2005
Calleguas Creek	Rio de Santa Clara/Oxnard Drain #3 (Calleguas Creek Reach 2)	R	Tissue (dieldrin)		8	2006	2009
Dominguez Channel	Estuary	E	Sediment (chlordan)		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 (chlordan)	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 (chlordan)		73	2005	2008
LA River	Estuary (Queensway Bay)	E	Sediment (DDT)		73	2005	2008
LA River	Estuary (Queensway Bay)	E	Sediment (lead)		75	2004	2007
LA River	Estuary (Queensway Bay)	E	Sediment (PCBs)		73	2005	2008
Ventura County Coastal	McGrath Lake (Estuary)	E	Benthic community degradation		25	2004	2007

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*Changes since Board Package was mailed are in strikeout.

Table 4-3: Draft New Listings for 2002 303(d) List - Sediment Chemistry and Toxicity, Tissue Chemistry and Benthic Community
(Reflects changes since Board Package was mailed)

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

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*Changes since Board Package was mailed are in ~~strikeout~~.

California Regional Water Quality Control Board, Los Angeles Region

**Ballona Creek Watershed
Total Aluminum**

Summary of Proposed Action

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

Table 1. 303(d) Listing/TMDL Information

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

Watershed Characteristics

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

Water Quality Objectives Not Attained

Title 22 of the California Code of Regulations specifies maximum contaminant levels for drinking water supplies. These maximum contaminant levels (MCLs) are incorporated into the Basin Plan as water quality objectives to protect the MUN beneficial use. The objective for aluminum is 1 mg/l. Analysis of available data determined that this limit was exceeded in ~~15.8~~24% of the sampling events. The more recent data indicates compliance with criteria. If this trend continues, aluminum can be removed from the list in the next cycle.

Beneficial Uses Affected

- Potential Municipal and Domestic Supply

Data Assessment

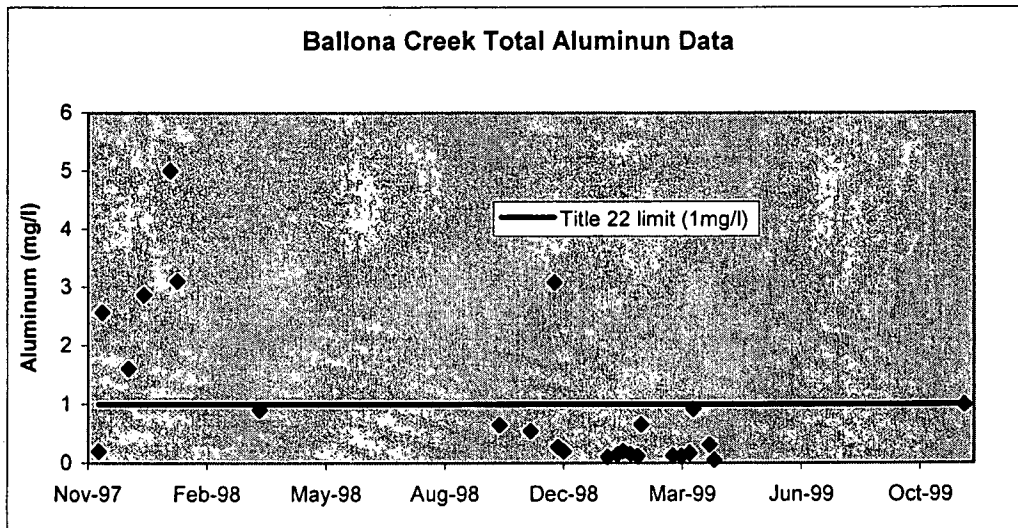


Table 2. Summary of Total Aluminum Data for Ballona Creek to Estuary

Dates of Sampling	11/97 - 4/011/99
Number of Samples (n)	38 25
Minimum Data Value	0.01-0.05mg/l
Maximum Data Value	5 mg/l
Median Data Value	0.15-0.31mg/l
Arithmetic Mean Value	0.68-1.0mg/l
Standard Deviation	1.1-1.3mg/l
Percent above Chronic Criterion	15.824%

Potential Sources

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

References

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

California Regional Water Quality Control Board, Los Angeles Region

**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 al. 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

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

Summary of Proposed Action

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

Table 1. 303(d) Listing/TMDL Information

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

Watershed Characteristics

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

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

Water Quality Objectives Not Attained

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

Beneficial Uses Affected

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

Data Assessment

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

	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

**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	Rincon	Surfer's Pt.
Dates of Sampling	2000	2000	2000	2000	2000
Location	Industrial Drain (#43000)	#23000	Creek mouth (#1000)	Flagpole (#1050)	"Stables" (#13000)
Number of Beach Postings (days)	60	50	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

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

Summary of Proposed Action

Proposed New Listings

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

Proposed New Delistings

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

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

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

Watershed Characteristics

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

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

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

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

Water Quality Objectives Not Attained

Tissue MTRLS

Beneficial Uses Affected

Aquatic Life

Data Assessment

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

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

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

Potential Sources

~~Historical use of pesticides and lubricants.~~

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

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

Summary of Proposed Action

Proposed New Listings

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

Proposed New Delistings

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

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

Table 1. 303(d) Listing/TMDL Information

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

Watershed Characteristics

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

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

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

Water Quality Objectives Not Attained

Tissue MTRLS

Beneficial Uses Affected

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

Data Assessment

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

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

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

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

Historical use of pesticides and lubricants.

References

Toxic Substances Monitoring Program database

REV 13-228

California Regional Water Quality Control Board, Los Angeles Region

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

Summary of Proposed Action

New Proposed Listings

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

New Proposed Delistings

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

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

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

Watershed Characteristics

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

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

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area

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

Water Quality Objectives Not Attained

~~Tissue MTRLS~~

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (94): chlordane, DDT, dieldrin, HCB, toxaphene (MTRL)

Table 2. Summary of Tissue Data for Duck Pong Ag Drain / Mugu Drain / Oxnard Drain #2 in Calleguas Creek Watershed

Dates of Sampling	6/21/94
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	Chlordane: 34.7 ppb p,p'-DDD: 88 ppb p,p'-DDE: 1100 ppb p,p'-DDT: 80 ppb Dieldrin: nd HCB: nd Toxaphene: 530 ppb
Maximum Data Value	Chlordane: 128 ppb p,p'-DDD: 260 ppb p,p'-DDE: 1200 ppb p,p'-DDT: 160 ppb Dieldrin: 19 ppb HCB: 15 ppb Toxaphene: 2000 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (100 %) p,p'-DDD: 2 (100 %) p,p'-DDE: 2 (100 %) p,p'-DDT: 2 (100 %) Dieldrin: 1 (50 %) HCB: 1 (50 %) Toxaphene: 2 (100 %)

Potential Sources

Historical use of pesticides.

References

Toxics Substances Monitoring Program database

REV 13-244

California Regional Water Quality Control Board, Los Angeles Region

**Tissue, Sediment and Benthic Infauna Data
Mugu Lagoon**

Summary of Proposed Action

New Proposed Listings

- “Not Supporting” (Impaired) for benthic community degradation due to community assessment.
- ~~“Not Supporting” (Impaired) for dieldrin in tissue due to exceedances of Maximum Tissue Residue Levels (MTRLs).~~
- ~~“Not Supporting” (Impaired) for toxaphene in tissue due to exceedances of MTRLs.~~

New Proposed Delistings

- Delist dacthal in tissue as there are no approved guidelines.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Mugu Lagoon	Pollutants/Stressors	See Above
Hydrologic Unit	403.11	Source(s)	Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from urban and agricultural areas.
Total Waterbody Size	505 ac	TMDL Priority	5
Size Affected		TMDL Start Date (Mo/Yr)	2002
Extent of Impairment		TMDL End Date (Mo/Yr)	2005

Watershed Characteristics

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

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

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

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon ground water for drinking.

Water Quality Objectives Not Attained

MTRL, ERM/PEL, Benthic Community Index

Beneficial Uses Affected

Aquatic Life, Fish Consumption

Data Assessment

- Sediment toxicity (94)
- Sed chem (97): DDT, chlordane (ERM, PEL)
- Tissue (94): chlordane, ~~dielrin, 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 dielrin (tis): nd toxaphene (tis): nd
Maximum Data Value	Total chlordane (sed): 12.97 ppb Total DDT (sed): 276.8 ppb Total chlordane (tis): 28.5 ppb p,p'-DDD (tis): 54.6 ppb p,p'-DDE (tis): 325 ppb p,p'-DDT (tis): 120.9 ppb

	dieldrin (tis): 4.7 ppb toxaphene (tis): 468 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Sediment toxicity: 2 (67 %) Chlordane (sed): 6 (100 %) DDT (sed): 6 (100 %) Chlordane (tis): 1 (33 %) DDTs (tis): 5 (56 %) Dieldrin (tis): 1 (33 %) Toxaphene (tis): 1 (33 %)

Potential Sources

Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from urban and agricultural areas.

References

Bay Protection and Toxic Cleanup Program, Toxic Substances Monitoring Program, State Mussel Watch Program databases

REV 13-27a

California Regional Water Quality Control Board, Los Angeles Region

**Tissue, Sediment and Benthic Infauna Data
Rio de Santa Clara/Oxnard Drain #3**

Summary of Proposed Action**Proposed New Listings**

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

Proposed New Delistings

- Delist Chem A in tissue since the listing was based on NAS guidelines, which are outdated, and individual chemicals can be listed for exceedances of Maximum Tissue Residue Levels (MTRLs) as appropriate. This affects fish consumption as well.

These actions all affect the aquatic life beneficial uses.

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Rio de Santa Clara / Oxnard Drain #3	Pollutants/Stressors	See Above
Hydrologic Unit	403.11	Source(s)	Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.
Total Waterbody Size	2.48	TMDL Priority	8
Size Affected		TMDL Start Date (Mo/Yr)	2006
Extent of Impairment		TMDL End Date (Mo/Yr)	2009

Watershed Characteristics

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

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

Mugu Lagoon, located at the mouth of the watershed, is one of the few remaining significant saltwater wetland habitats in southern California. The Point Mugu Naval Air Base is located in the immediate area

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

Supplies of ground water are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon ground water for drinking.

Water Quality Objectives Not Attained

Tissue MTRLS

Beneficial Uses Affected

Aquatic Life; Fish Consumption

Data Assessment

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

Table 2. Summary of Tissue Data for Rio de Santa Claraa / Oxnard Drain # 3

Dates of Sampling	7/16/97
Number of Samples (n)	2 (fish tissue)
Minimum Data Value	Total chlordane: 265 ppb p,p'-DDD: 820 ppb p,p'-DDE: p,p'-DDT: 310 ppb Dieldrin: 25 ppb Total PCB: 99.1 ppb Toxaphene: 814 ppb
Maximum Data Value	Total chlordane: 282.8 ppb p,p'-DDD: 910 ppb p,p'-DDE: 3600 ppb p,p'-DDT: 330 ppb Dieldrin: 26 ppb Total PCB: 110.7 ppb Toxaphene: 1010 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (100 %) DDTs: 6 (100 %) Dieldrin: 2 (100 %) PCB: 2 (100 %) Toxaphene: 2 (100 %)

Potential Sources

Historical use of pesticides and lubricants, stormwater runoff and aerial deposition from agricultural fields.

References

Toxic Substances Monitoring Program database

California Regional Water Quality Control Board, Los Angeles Region

Tissue, Sediment and Benthic Infauna Data
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	FMDL Priority	Chlordane & HCH: 87 metals: 90
Size Affected	Reach 2 (4.64)	TMDL Start Date (Mo/Yr)	2003
Extent of Impairment		TMDL End Date (Mo/Yr)	2006

Watershed Characteristics

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

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

Water Quality Objectives Not Attained

~~Tissue MTRLS~~

Beneficial Uses Affected

Aquatic Life

Data Assessment

Tissue (93, 98): chlordane, HCH

Table 2. Summary of Tissue Data for the Ventura River Reaches 1 and 2

Dates of Sampling	6/21/93 6/26/98
Number of Samples (n)	3 (fish tissue)
Minimum Data Value	Total chlordane: 5.8 ppb Gamma-HCH: nd
Maximum Data Value	Total chlordane: 23.8 ppb Gamma-HCH: 5.8 ppb
Median Data Value	
Arithmetic Mean Value	
Standard Deviation	
Number (Percent) above Objective	Chlordane: 2 (67%) HCH: 2 (67%)

~~Tissue (98): chlordane, HCH (MTRL)~~

Potential Sources

Historical use of pesticides.

References

Toxic Substances Monitoring Program Database

Los Angeles County Coastal Features

Draft 303(d) Fact Sheets

12/11/01

REV 13-289

REV 13-290

California Regional Water Quality Control Board, Los Angeles Region

**Los Angeles County Coastal Features
Avalon Beach
Beach Postings and Closures**

Summary of Proposed Action

Avalon Beach is located on Santa Catalina Island in Los Angeles County. This beach is 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 and due to two beach closures due to the discharge of raw sewage in the year 2000. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Avalon Beach	Pollutants/Stressors	Beach Postings and Closures
Hydrologic Unit	406.40	Source(s)	Point and nonpoint sources
Total Waterbody Size	Unknown	TMDL Priority	Low
Size Affected	Unknown	TMDL Start Date (Mo/Yr)	2011
Extent of Impairment	Entire beach	TMDL End Date (Mo/Yr)	2013

Watershed Characteristics

The Channel Islands within the Region's boundaries are Anacapa, San Nicolas, Santa Barbara, Santa Catalina, and San Clemente Islands. Anacapa and Santa Barbara Islands are part of the Channel Islands National Park. The waters within six nautical miles of Anacapa and Santa Barbara Islands are designated a national marine sanctuary. The ocean waters adjacent to the islands (not the entire circumference of Santa Catalina however) were designated Areas of Special Biological Significance by the state of California. The west side of San Nicolas supports a large gull rookery and elephant seal breeding area. The U.S. Navy has facilities on San Nicolas (and a desalination plant) and San Clemente Islands with a small package treatment plant on the latter. The city of Avalon is located on Santa Catalina Island and also has a small treatment plant.

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.

The Regional Board also identifies a beach as impaired if there is more than one beach closure per year and if there is a beach closure of greater than one week's duration.

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). The Los Angeles County Department of Health Services (DHS) conducts routine surf zone sampling at five locations along Avalon Beach. These data and the beach posting decisions of the DHS were reviewed by the Regional Board and used to assess current condition of Avalon Beach.

Table 2. Summary of Data for Avalon Beach, Santa Catalina Island

	Closures	Postings
Dates of Sampling	2000	2000
Number of Days	1 (32 days); 1 (4 days)	67

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

**Castlerock Beach
Total Coliform**

Summary of Proposed Action

Castlerock Beach is located in Santa Monica Bay. This beach is proposed to be listed in the 2002 305(b) water quality assessment as not supporting (impaired) due to exceedance of the geometric mean and threshold objectives for total coliform. The beneficial use affected by this impairment is water contact recreation (REC-1).

Table 1. 303(d) Listing/TMDL Information

Waterbody Name	Castlerock Beach	Pollutants/Stressors	Total Coliform
Hydrologic Unit	405.13	Source(s)	Nonpoint source
Total Waterbody Size	Unknown	TMDL Priority	Analytical Unit 48
Size Affected	Unknown	TMDL Start Date (Mo/Yr)	2000
Extent of Impairment	Mixing zone	TMDL End Date (Mo/Yr)	2002

Watershed Characteristics

The Santa Monica Bay Watershed Management Area (WMA), which encompasses an area of 414 square miles, is quite diverse. The Santa Monica Bay watershed contains approximately 55 miles of shoreline and many sandy beaches. 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.

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 California Ocean Plan states that "samples of water from each sampling station shall have a density of total coliform organisms less than 1,000 per 100 ml; provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml, and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml."

Beneficial Uses Affected

- Water Contact Recreation (REC-1)

Data Assessment**Table 2. Summary of Coliform Data for Castlerock Beach (Mixing Zone)**

	Total Coliform
Dates of Sampling	4/00-9/00
Number of Samples (n)	17
Minimum Data Value (MPN/100 ml)	1,000
Maximum Data Value (MPN/100 ml)	200,000
Geometric Mean Data Value (MPN/100 ml)	30,818
Arithmetic Mean Value (MPN/100 ml)	62,941
Standard Deviation (MPN/100 ml)	68,694
Number (Percent) above Objective	13 (76%)

Potential Sources

Nonpoint sources.

References

Region 4 1994 Basin Plan

California Ocean Plan (1997)

Watershed Management Initiative Chapter (2000)

City of Los Angeles (2001) "Low Flow Diversion of Dry-Weather Runoff." Report to City Council dated January 11, 2001.