San Diego River in Santee (907.110) – 303(d) Fact Sheet
San Diego Baykeeper - EnvironMatrix

This data does not lead to a listing recommendation.

Watershed Characteristics
The Lower San Diego River is a 6.0-mile waterway in the San Diego River Watershed of Region 9. It is classified inland surface water with the following beneficial uses: MUN, AGR, IND, PROC, REC1, REC2, WARM, COLD and WILD[1].

272

Water Quality Objectives not Obtained
TDS The Basin Plan objective is 1000 mg/L.

Evidence of Impairment
Sampling occurred at 4 locations along the San Diego River over 2 days. Baykeeper claims that total coliform, fecal coliform and total dissolved solids (TDS) were in excess of Basin Plan Standards[1].

Total Coliform Objectives for total coliform concentrations apply only where shellfish harvesting for human consumption is designated.

Fecal Coliform With only two samples, neither Basin Plan Objective for fecal coliform can be directly applied. However, the objective of 400 coliform forming units (CFU) / 100 mL can be used as a guide to the severity of the contamination. The two samples did not exceed this objective.

TDS All 3 samples were above the Basin Plan Objective of 1000 mg/L. Average and median values are not applied to samples from different sampling locations. Three samples are not enough to warrant 303(d) listing.

See Table 1 for a summary of their results and Basin Plan Standards[1].

Extent of Impairment
Sampling occurred at Friars Rd YMCA (furthest west location), Mission Valley Golf Course, Forrester Creek at Trolley Station and at Mission Dam at Mission Trails.

Potential Sources
Unknown

TMDL Priority
No TMDL is required at this time.

Information Sources
[1] Water Quality Control Plan for the San Diego Basin (9), 1994

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Table 1 - San Diego River (SD Baykeeper EnvironMatrix)

Constituent	Units	Basin Plan Std	Forrester Creek SDR30 8-May-01	Mission Dam @ Mission Trails SDR40 8-May-01	Linda Vista YMCA SDR10 9-May-01	Mission Valley Golf course SDR20 9-May-01
Hydrocarbon	(ug/L)		ND	ND	ND	ND
Nitrate-N	(mg/L)	10.0	1.5	ND	-	-
pH	pH units	6.5-8.5	-	7.8	-	-
TDS	(mg/L)	1000	-	1090	1310	1529
2,4-D			-	-	ND	-
2,4-DB			-	-	ND	-
2,4,5-T			-	-	ND	-
2,4,5-TP (Silvex)			-	-	ND	-
Dalapon			-	-	ND	-
Dicamba			-	-	ND	-
Dichloroprop			-	-	ND	-
Dinoseb			-	-	ND	-
MCPA			-	-	ND	-
MCPP			-	-	ND	-
Zinc	(mg/L)	5.00	-	-	-	0.038
Copper	(mg/L)		-	-	-	ND

ND = not detected or below detection limit
(-) = not sampled

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619

San Diego Baykeeper – San Diego River 303(d) Water Quality Data

Table 1. Environ Matrix Analytical lab results, showing exceedances in Bacteria and TDS levels based on the numerical criteria listed in the San Diego Regional Water Quality Control Board (SDRWQCB) Basin Plan (Pages 3-5 (REC-1) , 3-24) for four sites along the Sna Diego River.

Site ID	Location	Date Sampled	Lab Report	Parameter		std 1000
				Total coliform (MPN) 1000 5&6M	Fecal coliform (MPN) 400	TDS (mg/l)
SDR 10	Linda Vista 907.110 YMCA	5/9/01	5/22/01	10%	→ 400 10%	1310
SDR 20	Mission Valley Golf Course	5/9/01	5/22/01			1529
SDR 30	Forrester Creek at Trolley Station	5/8/01	5/18/01	240	240	
SDR 40	Mission Dam at Mission Trails Park	5/8/01	5/18/01	500	300	1090

Table 2. In-house bacteria analyses results. Bacteria analyses at BayKeeper were completed using the IDEXX Colilert-18 Method with Quantitray/2000.

Date	ID	Location	Replicate	Total Coliform MPN	Fecal Coliform MPN
		On Friars Rd			
10-May-01	SDR-10	Linda Vista YMCA	1	20	0
10-May-01	SDR-10	Linda Vista YMCA	2	31	0
10-May-01	SDR-10	Linda Vista YMCA	3	1211	0
10-May-01	SDR-10	Linda Vista YMCA	4	246	30
10-May-01	SDR-20	Mission Valley Golf Course	1	715	0
10-May-01	SDR-20	Mission Valley Golf Course	2	294	20
10-May-01	SDR-20	Mission Valley Golf Course	3	122	10
9-May-01	SDR-30	Forrester Creek at Trolley Station	1	1850	10
9-May-01	SDR-30	Forrester Creek at Trolley Station	2	959	0
9-May-01	SDR-30	Forrester Creek at Trolley Station	3	727	0
9-May-01	SDR-40	Mission Dam at Mission Trails	1	10	10
9-May-01	SDR-40	Mission Dam at Mission Trails	2	1607	31
9-May-01	SDR-40	Mission Dam at Mission Trails	3	2602	10

Attachment B

Prepared by Suzanne M. Michel, Ph.D. Water Resources Geography

273

Qualitative Data Submitted

- Bizarri, Tiza. 2000. MTBE and the Future of Clean Water in Lakeside, California. Senior Thesis. Department of Political Science. San Diego State University. May. Chapter 2, pages 5-9.
- California State of, Regional Water Quality Control Board, Region 9. 1007. Adoption of Order No. 97-63 "Waste Discharge Requirements for the U.S. Navy, Project P-338S, Pier 3, Dredging San Diego County" File: 05-0843.02
- Cohen, Moses. Engelhardt, Casey and Shawn Neville. Pollution in the San Diego River. Power Point Presentation. Presentation contains photos of potentially contaminating activities in the San Diego River Valley near Mission Ponds and Admiral Baker Field.
- Collingsworth, Van K. 2001. San Diego River Photographic Tour of a Polluted Watershed -- Santee Segment. Computer file e-mailed to RWQCB May 10, 2001.
- El Cajon, City of. Notice of release of Toxic Substances in Forrester Creek. Letter dated July 6, 2000 and San Diego County Notice dated May, 5 2001.
- San Diego, County of. 2001. San Diego River Watershed Management Plan.
- Rodgers, Terry. 2000. Sewer Line that Broke Had Failed Repeatedly. *San Diego Union Tribune*. March 14.
- York, Diane. Folder entitled: Lakeside a River Runs Through It. Media clippings and photos of conditions in the San Diego River, Lakeside CA.
- York, Diane. Videotape. Media Coverage of Lakeside Land Investigation, Bill Signs Trucking Permit Violation Observations, USDRIP Hearing, San Diego County Board of Supervisors, August 2000.

Analysis of Qualitative Data

Residents of East County have for years been aware of actions which degrade water quality and riparian habitat in the San Diego River. These actions have been both condoned by local governments, or have been conducted illegally, often at nighttime. Since water quality testing requires training and a substantial capital investment, local volunteers are submitting to the regional board qualitative data. Data has been obtained through document analysis of government and media documents, observations of illegal polluting activities in the river, interviews of informants or simply observing visual conditions of water quality impairment. In addition, the San Diego River Watershed Management Plan is submitted that describes the significant water quality problems present in the River Basin (see sections entitled Problems Being Addressed, Problem Statement, and Specific Water Quality Goals).

The Board should note that certain regions of the San Diego River are inaccessible due to actions of private property owners. In Lakeside for example much of the river is fenced off with signs saying "No Trespassing." Given this fact of inaccessibility any water quality testing would be impossible. Hence, the only data we were able to obtain was via videotaping or photographs on hills surrounding the River.

These observations demonstrate that even though the County and the Regional Board permit industrial activities, these activities continue to deposit pollutants into the River.

In one instance residents filmed truck washing in Lakeside. This violation of the storm water permit was reported to a Regional Board representative, and the Regional Board representative informed the permittee violator (Bill Sign's Trucking). Subsequently, a Bill Sign's Trucking representative threatened the two men who had conducted the videotaping verbally. This incident and other threatening activities by landowners in Lakeside has instilled an atmosphere of fear. It was very difficult to obtain information, since residents have been threatened and did not want their identities revealed. The Regional Board should investigate the incident concerning Bill Sign's Trucking (June 10, 2000), and establish protocol that if information is submitted one's identity is protected.

Besides videotapes, film data and document analysis, personal testimonies are submitted. The personal testimonies were recorded during the public hearing concerning water quality issues for the Upper San Diego River Improvement Project or USDRIP in Lakeside. This hearing was conducted by the San Diego County Board of Supervisors and indicates ethnographic data concerning degrading water and riparian habitat quality in the San Diego River. This hearing along with other media documents submitted in the "Lakeside a River Runs through It" folder indicates the very high level of concern Lakeside residents have at the status and future of the San Diego River and the Santee-El Monte groundwater basin beneath the River.

Below is an overview of qualitative data submitted indicating hotspots. In these hotspots the Regional Board should review their data and other data submitted. At these sites water quality does not support the following beneficial uses: contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat and rare or endangered species. In addition, since the Santee-El Monte Groundwater Basin (an unconfined groundwater basin beneath the San Diego River in East County), supports municipal drinking water sources and has been contaminated by above ground land uses, the Board should pay special attention to surface water conditions above the groundwater basin. In ALL areas, the Regional Board should set up monitoring sites

- **Lakeside:** The entire length of the San Diego River, especially areas within the Upper San Diego River Improvement District (USDRIP), areas zoned M52, M54 and M58 (to the base of San Vincente Dam) and Los Coches Creek. A portion of Lakeside's San Diego riverbed is owned by Lakeside Land, a company that is currently under investigation for illegal dumping of contaminants in the River and destruction of riparian habitat. In the enclosed videotape and notebook (Lakeside a River Runs Through It) we have compiled media coverage of California's Fish and Games raid upon the site.

  From document analysis and personal observation, residents (who desire to keep their identities unknown) revealed to us that sediment from Pier 3, Naval Station is being disposed of in the San Diego River by Lakeside Land. This disposal of San Diego Bay sediment is disturbing to Lakeside residents for many reasons. First, as indicated in the enclosed report (Cover Letter dated December 30, 1997) the material in the top layer of sediment "has a significant bioassay toxicity and is

not suitable either for use as beach replenishment material or for ocean discharge." Why is it suitable for disposal into the San Diego Riverbed, which supports recreational and aquatic habitat uses? The document also stipulates that sediment disposed of will be disposed of in a hydrologic basin, which is not designated as MUN. Surface water in the San Diego River is not designated, however groundwater directly beneath the disposal site is designated MUN. What assurances do Lakeside residents have that toxic substances in the sediment are not released into their drinking water supply, and do not affect the above listed beneficial uses? Finally, Lakeside Land Company is disposing the sediment, the very same company currently under **investigation for illegal dumping of pollutants in the San Diego River**. At the very least, RWQCB should release data of water monitoring at the site, conduct soil tests, and hold a public hearing to inform Lakeside residents. Lakeside residents will continue an investigation into this manner, by reviewing RWQCB and County of San Diego Department of Public Health documents.

Beneath the river lies the Santee-El Monte aquifer an unconfined groundwater basin. There is surface and groundwater interaction since the groundwater basin occurs in the alluvial fill of the San Diego River Valley composed of medium-grained, fairly well sorted, loosely packed sand (State of California, Department of Water Resources 1965, page 15). In certain areas where there has been sand mining groundwater flows have created lakes or ponds in the San Diego River bed (see videotape section on truck washing activities). Most of the water quality monitoring for this region has occurred in the monitoring of well sites. It is noted in the well data that most of the contamination of groundwater occurs due to land uses on the surface or leaking underground storage tanks. Quantitative data concerning contamination of these well sites is discussed in Attachment A. Riverview Water and Lakeside Water Districts have active wells near the riverbed. Concerning River Water District all wells have been shut down due to MTBE contamination from at least two gas stations (located at the intersection of Woodside and Wintergardens Ave.). Well testing data from Riverview Water District is included in the enclosed package. Soil and water tests on the gas station sites have revealed high levels of MTBE and Benzene contamination (Bizarri 2000).

In the folder entitled, "Lakeside A River Runs Through It" residents have compiled photos of illegal trash dumping in the river, oil leaks and stains, and storage facilities which are not implementing BMPs for storm water pollution.

Santee: The entire section of the San Diego River, Forrester Creek and Sycamore Creek. Visual observations reveal foam and algal blooms, foul river odors, trash dumping. Near particular storm drains (especially those with concrete channelization) City of Santee water quality tests reveal high levels of pH and/or significant concentrations of ammonia and detergents (see Attachment A). The enclosed analysis submitted by Van Collingsworth concludes that the River cannot support beneficial uses.

El Cajon: Forrester Creek. This creek no longer exists, it is a concrete channel surrounded by industrial activities. The Regional Board should conduct a trend analysis (examine its database concerning CWA violations on or near the Creek) over the past decade. Enclosed are two incidences of contaminating activities.

Mission Ponds, Mission Valley Terminals: Reviews of the RWQCB files indicate contamination in this region by petroleum hydrocarbons. Enclosed is a PowerPoint presentation by San Diego State university students containing photos of industrial activity in the area. As with Lakeside, these students (Moses Cohen, Casey Neville and Casey Engelhardt) found that access to the River in these industrial areas was not allowed, and hence photos were taken from surrounding hillsides. This area is also the site of sewage spills by San Diego's MWWD (see enclosed article of 34 million gallon spill)

Besides the submission of the enclosed qualitative data, trend analysis of Regional Board's files (or qualitative data) can reveal trends of water quality degradation. Below is a listing of analysis, which should be conducted. The parameters of the trend analysis should be geographic or the San Diego River watershed, time parameter 1990-2000. When possible these analysis can be conducted using geographical information systems:

- A listing of sewage spills, total gallons spilled each year, and total number of beach closures each year.
- A listing of leaking underground storage tanks spills, what chemicals and total amounts each year.
- A trend analysis of Padre Dam's monitoring data focusing on hot spots between 1997-2001
- A trend analysis of hazardous waste storage, use and release on or near the San Diego River.
- A trend analysis of storm water data over the past decade, storm water violations.
- A trend analysis of NPDES, WDR and storm water violations over the past decade.
- Loss of riparian habitat over the past decade due to channelization, urbanization or exotic plant invasion. Total acres of riparian habitat lost or gained.
- A trend analysis of concrete channelization, total acres of channelized rivers each year over the past twenty years.

Trend analysis of these records will determine if polluting activities are increasing or decreasing over time and if the river's water quality and habitat degrading. The regional board has indicated that most of the River has not been assessed, and we assume this assessment entails water quality testing. However, other types of assessment such as trend analysis can be done. This data will locate sources of pollution and coupled with water quality testing should detail geographic extent and longevity of the pollution. Our previous analysis of total/fecal coliform indicates spikes of numbers in dry weather

conditions. A trend analysis of sewage spills and/or permit violations could locate the sources of bacterial contamination demonstrated in water quality tests. It was noted also in Santee's storm water reports of high levels of ammonia at certain sites. Investigators attempted to test upstream to locate the source but had to end their efforts due to inability to access the water. Again trend analysis reports may have been useful to identify sources of contamination.

Citations for Attachements A & B

(Note: Due to the length of reports, not all reports are included in our data analysis).

Bondy, Bryan and David Huntley (Ph.D.). 2001. *Groundwater Management Planning Study Santee-El Monte Basin. Phase III. Report.* January. Copy available at the San Diego County Water Authority and the Lakeside Water District.

Bizarri, Tiza. 2000. MTBE and the Future of Clean Water in Lakeside, California. Senior Thesis. Department of Political Science. San Diego State University. May. (Relevant portions enclosed).

California, State of. Department of Water Resources. 1965. *Ground Water Conditions in the San Diego River Valley.* A Report to the San Diego Regional Water Pollution Control Board. September.

Hargis and Associates, Inc. 2000. *Groundwater Sampling Data Submittal. Santee-El Monte Monitoring Program. Santee, California.* December 20. Copies available at the San Diego County Water Authority and Lakeside Water District.

Harrington, James. 1999. San Diego Regional Water Quality Control Board. 1999. Biological Assessment Annual Report.

Santee, City of. 1997-2001. Dry Weather Field Screening Program. (Two volumes for every year, July and October). July 1997- October 2000. (Obtained from the Engineering Department in the City of Santee).

Analysis of Quantitative Data

In its 1998 Regional Board in 1998 305(b) report the Regional Board indicates that there has been no assessment of the San Diego River. After approximately one month of work we were able to locate several sources of quantitative water quality data going back as far as 1965, sources are listed below:

* Padre Dam Municipal Water District Receiving Water Sampling and Analyses
* City of El Cajon, Storm Water Monitoring
* City of Santee, Storm Water Monitoring
* Groundwater Sampling Data – Santee, El Monte Monitoring Program
* SDRWQCB 1999 Biological Assessment Annual Report
* Department of Water Resources – Ground Water Conditions in the San Diego River Valley
* San Diego BayKeeper Water Quality Monitoring Program

After reviewing surface water data for the San Diego River and having conducted testing of our own we have identified several areas of concern. Review of Padre Dam surface water monitoring data going back to 1997 and independent testing indicates that recurrent exceedances in total and fecal coliform are a problem. The Padre Dam monitoring program includes sites as far downstream as the San Diego River Estuary (near I-5). Along the San Diego River typical levels of total coliform range in the thousands, a condition that is in violation of the Clean Water Act considering the beneficial uses assigned to this water body. Preliminary analyses of these data indicate that peeks consistently occur both during wet and dry weather periods, with areas like Forester Creek in El Cajon and Old Mission Dam showing the highest levels (See attached data). Further comprehensive analyses of these microbiological data involving comparisons of bacteria with surface flow and known sewage events is necessary to determine the sources of contaminants.

Also, while examining the same dataset and conducting independent testing we were able to observe recurrent exceedances in TDS, elevated levels of pH and significantly low concentrations of dissolved oxygen. The later is particularly true for areas like Forester Creek and Mission Ponds. Also City of Santee dry weather stormwater monitoring reports indicate the presence of extremely high levels of pH and in some cases elevated levels of ammonia and detergents at sites located south of River Park Place, south of Mast Blvd., near Chubb Lane, Forester Creek, south Bank of San Diego River, east of Fanita Drive. These constituents and contaminants are of crucial importance considering their impact on habitat integrity and the San Diego River's beneficial use as a wildlife and rare and endangered species habitat. Furthermore, other types of data also indicate that the habitats of the river show clear signs of impairment.

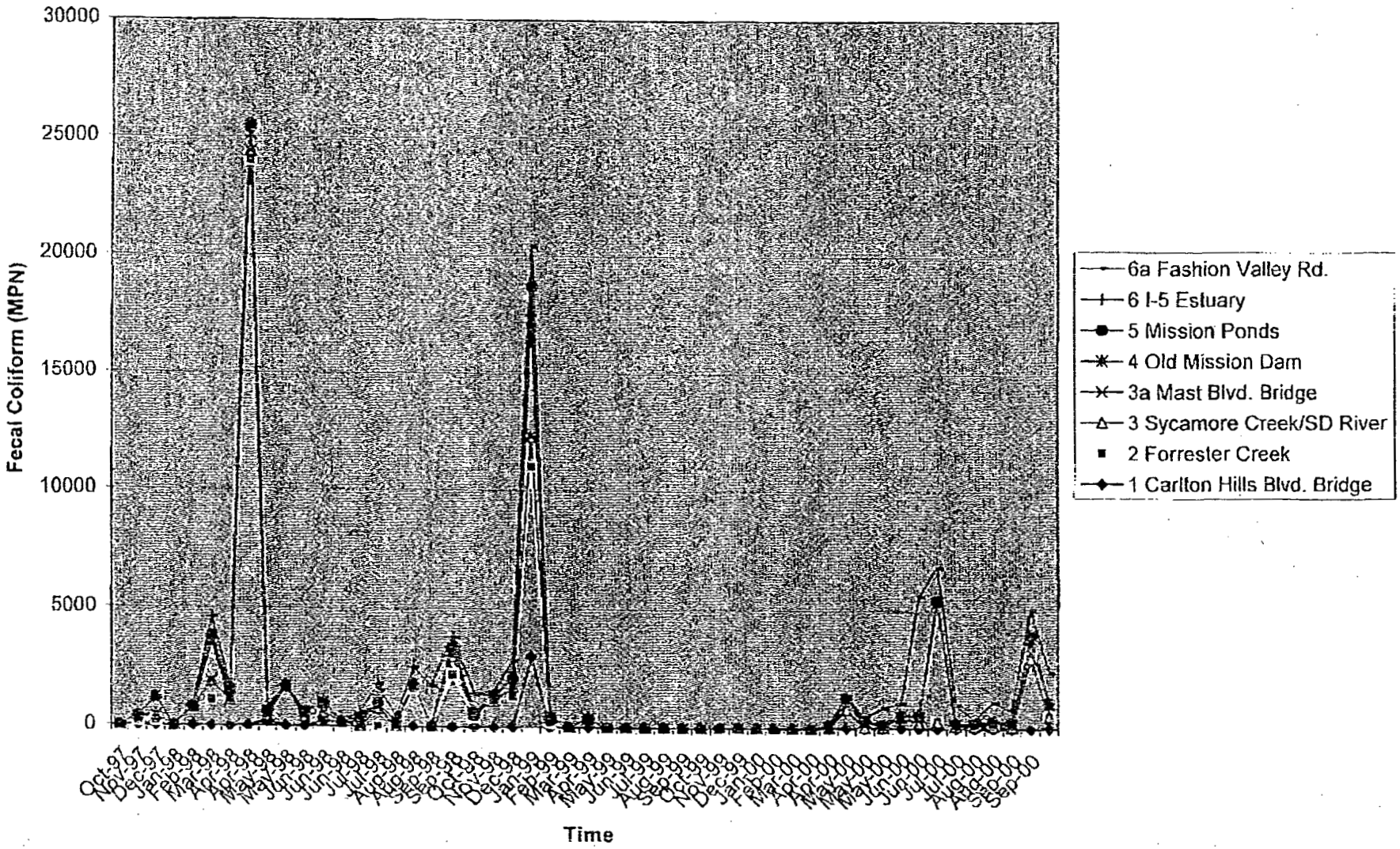
The 1999 biological Assessment Report indicates that in our county benthic communities in riparian habitats are dominated by pollution tolerant species, diversity is low, and sensitive species are rarely encountered, all of which are established indicators of impairment. The San Diego River sites in particular rank consistently below average with respect to the rest of the county. Among the San Diego River sites, the River Valley Golf Course is of particular concern. Considering that rankings where based on a

comparison between impacted sites, evaluation of these sites in comparison to better upstream reference sites will likely reveal a greater degree of impairment.

Another area of concern is groundwater contamination, given the interaction between the aquifers and the river contamination of groundwater is of serious concern. Groundwater testing data also shows elevated levels of Aluminum, Chromium, and several other organic compounds, including MTBE. These well water samples where taken from the same aquifer and even though some variability in levels is to be expected differences in levels in some cases are of two orders of magnitude or greater. Overview of these data clearly shows that some wells are in proximity to sources contamination. The heavy metals data should be reviewed carefully and evaluated in relation to historical data and known natural background. In terms of the organic compounds there is no question that these wells have been contaminated and given that this is an unconfined aquifer the risk of surface water contamination is great.

We believe that there is sufficient data available to indicate that the San Diego River is seriously impacted by contamination and that comprehensive analyses of these data will show that the impact is not confined to certain portions of the river but that the river as a whole shows significant signs of impairment. We also believe that trend analyses of these data that takes into account known events of contamination and NPDES discharge information will crucial in determining the sources of pollution. Moreover we see that there is a need for greater coordination between the different agencies conducting sampling, as well a need for review of current methodologies to determine levels of quality, comparability of data and standardization.

Fecal Coliform per Site vs. Time



Kevin Heaton
619-338-2221
Message - 7/31/01

MTBE and the Future of Clean Water in Lakeside, California

by

Tisa Bizzarri

Senior Thesis

San Diego State University

May 18, 2000

Tried - Google
Yahoo
Phone Book
Dogpile
] No Tisa in Calif

Chapter 2

Contamination in Lakeside, California

Lakeside, a small town in Southern California, had continuously been provided inexpensive water drawn from its own private wells without a second thought. However in 1999, the Riverview Water District(RWD) had to undergo dramatic changes when MTBE had contaminated the Lakeside wells. Initially, there were three wells existing off of highway 67. The wells are aproximately 150 feet apart, and the water table is located twenty to twenty five feet below the ground surface. RWD had planned to add one more well in the same location, to make a total of four.

Before the addition well number four, the existing wells needed to be tested and analyzed. Upon sampling well number one on May 17, 1999, the presence of MTBE was detected at 13ppb. This was the first detection of MTBE ever in the well water in Lakeside. In order to confirm the test results done in May, a second test was necessary on well number one. The results from the second test on June 14, 1999 detected 11.8ppb of MTBE (Heaton Interview, 2000).[1]

[1]The variation between the results from the first and second tests is insignificant. There is a margin of error taken into account when MTBE is measured. Gasoline levels can be effected by temperature and other factors.

After the confirmed results, on July 13, 1999, a letter was sent from the State Health Department to notify the Regional Water Quality Control Board of the findings. On July 26,1999 San Diego County was notified, and Kevin Heaton, a hydrogeologist for San Diego was assigned to the case. Meanwhile, the tests for well numbers two and three indicated at least .6ppb of MTBE(Heaton interview, 2000). Just following these results, well number one was shut down, now with a measurement of 60ppb, and soon after wells number two and three were also shut down with levels significantly higher than previously indicated. Fortunately, well number four that had been installed during this time and now exists never went into operation. (See map of wells, Figures 1, 2, and 3).The most recent test from well number four showed 100ppb of MTBE(Heaton interview, 2000).

The advantage for Lakeside was its ability to use wells for a good portion of their water. RWD used approximately thirty two percent of their well water and augmented it with sixty eight percent imported water from the County Water Authority.[2] The water was then mixed and distributed to Lakeside residents for a cheaper rate. The price for local well water is approximately ninety dollars per acrefoot compared to $500 per acrefoot to import, which is a big difference for a small town.

[6]The San Diego Water Authority is one of twenty three member agencies that receives water from the Colorado River. San Diego County's 27 million residents rely on imported water from the municipal water district of Southern California for ninety percent of their total supply in one year.

Today, RWD imports all of its water and is not using the wells. (Hero interview, 2000).

The RWD has managed to provide water to its residents for the same price as before because DHS is providing the funds for the imported water. The money is drawn from a "Fund" created for situations such as this. According to Chuck Kish, General Manager of RWD, the responsible party will eventually be sued for collection. The fund is designed in such a way that requires the injured party to seek damages. Once awarded, RWD will reimburse DHS. The reimbursement process is graduated over a period of eight years.

So who is the responsible party? The Department of Environmental Health(DEH) has narrowed it down to one party. Initially however, it seemed as though there were two. The first, Lakeside Texaco, the determined responsible party, is located on the corner of Winter Gardens and Woodside Avenues. This site is still currently operating with three 12,000-gallon USTs containing gasoline and diesel fuel. In May of 1990, the DEH became aware of a soil contamination problem through an environmental investigation. Subsequent investigations identified significant soil and groundwater contamination due to a product line leak in 1989. The Texaco has not been shut down because the station's tank system has been upgraded to meet the 1998 upgrade requirements and it is legal for them to continue operating.As of yet, Texaco has not taken responsibility for the well contamination.

Among other contaminants on the Lakeside Texaco site, MTBE was measured at 11,000ppb that had dissolved. This dissolved amount does not account for the amount of free product present in the area of the dispenser island and the tanks. Free product is the portion of the gasoline that doesn't mix but floats on the surface of the water table. "Free product is usually present in bad releases", according to Hydrogeologist Kevin Heaton. It has in fact been determined by DEH that free product does exist at this site in monitoring wells shown on the Site Plan Map(See Figure 4) as numbers two, four, and five. Monitoring wells seven and nine had the highest concentrations without free product, at 19,000ppb and 8,800ppb of MTBE, respectively(Heaton interview, 2000).

In addition to high levels of MTBE, Benzene was also found at high levels. Benzene, one of the most highly monitored substances by the EPA, is a well known human carcinogen. One thimble full of Benzene in 10,000 gallons of water is considered hazardous(Greene, 14). Benzene was measured at 1,000ppb at Lakeside Texaco. The MCL for Benzene is 1.0ppb. Presently, the owners of the Texaco station have submitted a Corrective Action Plan(CAP) for the site and is finishing the public review phase. Heaton says that future conditions of approval will include further delineation of groundwater impacts with MTBE and Benzene. Off-site mitigation of impacts will be incorporated into the remediation program on "as needed" bases as well. In this case, DEH is responsible for overseeing the cleanup.

The second area that has a significant problem is the Thrifty/Arco station located on the opposite corner of Winter Gardens and Woodside Avenues. MTBE was found in concentrations as high as 24,000ppb, and Bezene as high as 15,000ppb. However, according to Heaton, the DEH has determined based on a joint investigation done by both stations that the soil and groundwater contamination at this site is "somewhat independent" of the contamination of the Lakeside wells. The responsible party for the release of gasoline in this case is Thrifty, but the responsibility is limited to the on-site damages only.

One more important determination that was made by DEH was the possible relationship of the utility lines that run underground close to or at the water table in the area. These lines have an effect on the mobility of the contaminants, and can facilitate their flow direction if they happen to fall into the utility trenches. The only possible utility line that goes down to the water table is the San Diego County Water Authority water line shown as number five on the Surface Utility Map(See Figure 5). The direction of the flow was not found to have been effected by it at all. Presently, the gasoline plume that contaminated the Lakeside wells is moving towards the San Diego River(See Figure 2). Chuck Kish stated that the samples taken from the river indicate the presence of MTBE at 15ppb. Kish says that there are other locations that could potentially be contributing to it, not only Texaco. No information has been given as to what actions are being taken to remediate it.

March 9, 2000 City SD Lab

San Diego River

From: "Van K. Collinsworth" <Van27@home.com>
To: <gibsd@rb9.swrcb.ca.gov>
Date: Tue, May 8, 2001 7:40 AM
Subject: Water Testing

Dear Mr. Gibson:

Mary Anne Pentis suggested that I contact you regarding water tests in our area.

I would like to see the San Diego River in Santee and Lakeside, Sycamore Creek and Forester Creek in Santee designated as"impaired." due to the poor water quality that impacts recreation and wildlife uses.

Water quality tests would be beneficial on:
Sycamore Creek near Carlton Oaks Boulevard and Pebble Beach Drive.
Forrester Creek anywhere in Santee and especially near the San Diego River floodplain (Mission Gorge Road and Fanita Drive or Carlton Hills Blvd.)
San Diego River below the Carlton Oaks Golf Course --West Hills Parkway and anywhere else accessible.

Please let me know if any tests are planned.

Thanks,
Van

Protect our quality of life and conserve Fanita Ranch!

Van K. Collinsworth
Van27@home.com
619-258-7929
http://members.home.net/van27/welcomepws.html

CC: <maryanne@pentis.com>

San Diego River
Photographic Tour of a Polluted Watershed – Santee Segment

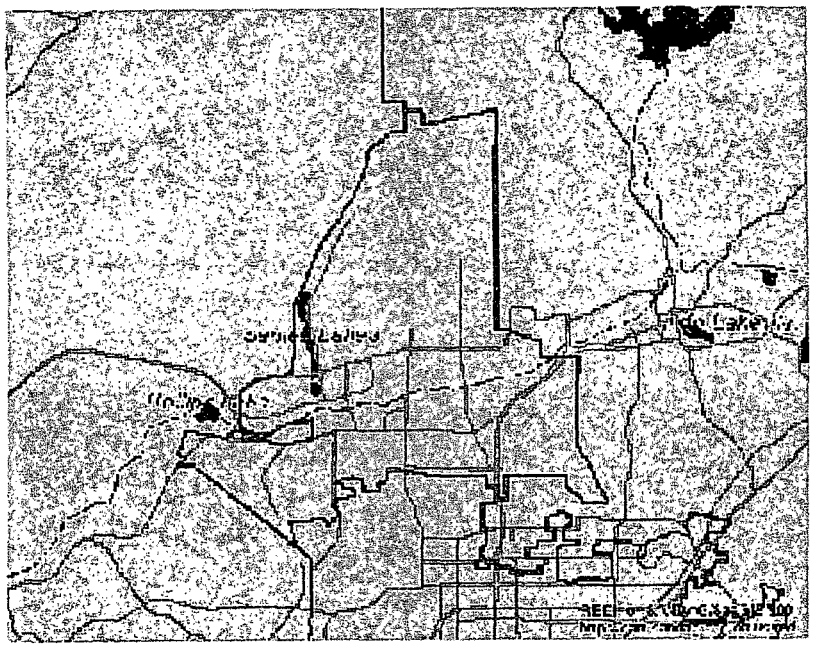
Submitted to:
California Regional Water Quality Control Board
San Diego Region
9771 Clairmont Mesa Boulevard, Suite A
San Diego, CA 92124-1324
Atn: Keri Cole
303dlist@rb9.swrcb.ca.gov

May 10, 2001

By Van K. Collinsworth

Qualifications:
M. A. Geography emphasis, Humboldt State University
B.A. Geography, Humboldt State University
Undergraduate courses in Natural Resource Planning include: Watershed Management, Ecosystems Analysis, Biology, Botany, Zoology, Physical Geography.
Work experience: Forestry Technician, USDA-Forest Service, seven seasons. Resource Analyst, Preserve Wild Santee, seven years.

San Diego River
Photographic Tour of a Polluted Watershed – Santee Segment
Photography by Van K. Collinsworth & Tom Abshire

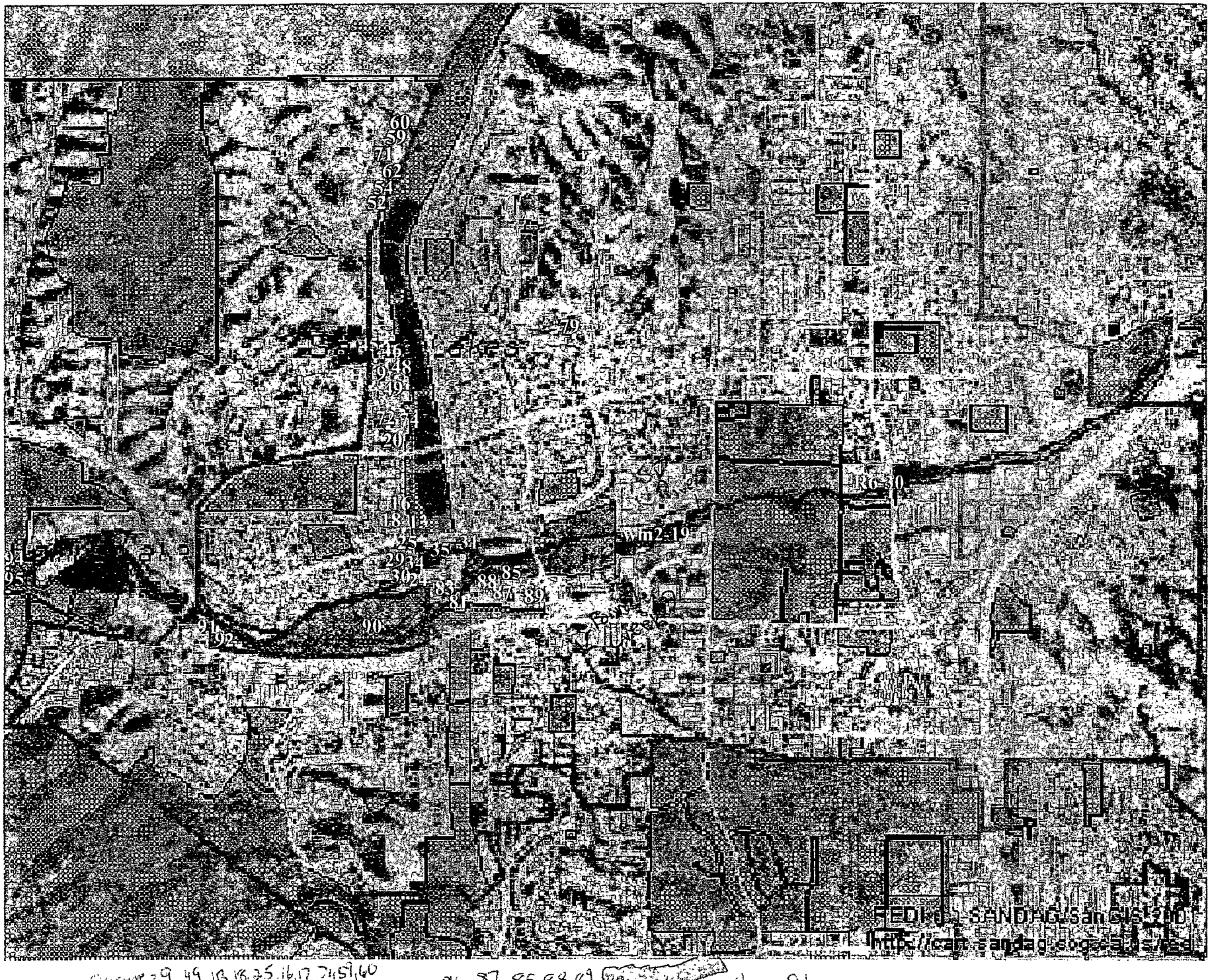


Conclusion:
The San Diego River, and its tributaries within Santee (Sycamore Creek and Forrester Creek) are impaired water bodies that should be added to the "303(d) list" under the Clean Water Act.

All three water bodies exhibited eutrophic conditions (algae blooms, algal mats, decomposing plant matter, offensive odors, stagnation). These conditions impair beneficial uses such as recreational swimming, fishing, and sensitive species habitat. Causes include nutrients from fertilizers, animal wastes, industrial wastes, and municipal wastes.

The San Diego River, Sycamore Creek, and Forrester Creek are all severely impaired by the invasion of exotic plants. These riparian areas provide habitat for sensitive and endangered species such as the least Bell's vireo. Giant reed (*Arundo donax*) and other invasive species are rapidly displacing the native habitat which native species depend upon.

Study Area:
The San Diego River watershed in the vicinity of Santee served as the focus area.
See Index Maps , San Diego River Watershed – Santee Segment



Sycamore - 9, 99, 13, 16, 25, 16, 17, 21, 59, 60

Fanita - 90, 87, 85, 88, 89

Fanita = 81

Inland Surface Waters			Hydrologic Unit Basin Number		BENEFICIAL USE														
					MUN	AGR	IND	PROC	GWR	FRSH	POW	REC1	REC2	BIOL	WARM	COLD	WILD	RARE	SPWN
San Diego River Watershed																			
	San Diego River		7.12	La Mesa, El Cajon	O		●					●	●		●	●	●	●	
		Lake Jennings	7.12	El Cajon	See Reservoirs & Lakes- Table 2-4														
		Quail Canyon	7.12	El Cajon, Alpine	O		●					●	●		●	●	●		
		Wildcat Canyon	7.12	El Cajon, San vicente Reservior	O		●					●	●		●	●	●		
		San Vicente Creek	7.22	San Vicente Reservoir, El Cajon Mtn.	●	●	●	●				●	●		●	●	●		
		Padre Barona Creek	7.12	San Vicente Reservoir	O		●					●	●		●	●	●		
		San Vicente Creek	7.12	El Cajon, San Vicente Reservoir	O		●					●	●		●	●	●		
		Slaughterhouse Canyon	7.12	San Vicente Reservoir	O		●					●	●		●	●	●		
		Los Coches Creek	7.12	El Cajon	O		●					●	●		●	●	●		
		Forrester Creek	7.12	La Mesa, El Cajon	O		●					●	●		●	●	●		
		Sycamore Canyon	7.12	La Mesa, Poway, San Vicente Reservo	+	●	●					●	●		●	●	●	●	
		unnamed tributary	7.12	La Mesa, Poway, San Vicente Reservo	+	●	●					●	●		●	●	●	●	
		Clark Canyon	7.12	San Vicente Reservoir	+	●	●					●	●		●	●	●	●	
		West Sycamore Canyon	7.12	Poway	+	●	●					●	●		●	●	●		
		Quail Canyon	7.12	La Mesa, Poway	+	●	●					●	●		●	●	●		
		Little Sycamore Canyon	7.12	La Mesa, Poway	+	●	●					●	●		●	●	●		
		Spring Canyon	7.12	La Mesa, Poway	+	●	●					●	●		●	●	●	●	
		Oak Canyon	7.12	La Mesa	+	●	●					●	●		●	●	●		

● Existing Beneficial Use

O Potential Beneficial Use

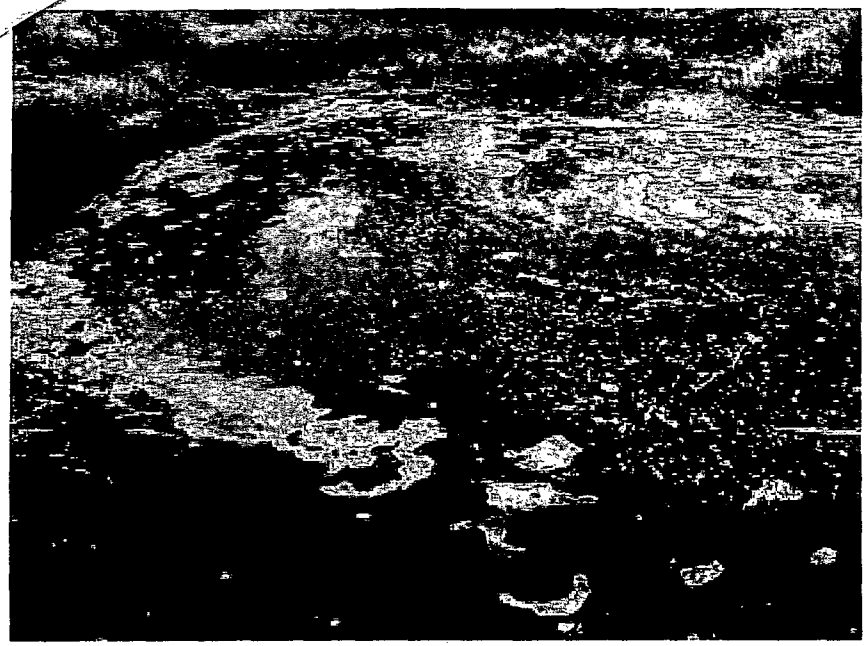
\+ Excepted From MUN (See Text)

● Photos demonstrate beneficial uses are impaired

Waterbodies are listed multiple times if they cross hydrologic area or sub area boundaries.

Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.

MUN	beneficial use of municipal and domestic supply
AGR	beneficial use of agricultural supply
IND	beneficial use of industrial service supply
REC-1	beneficial use of contact water recreation
REC-2	beneficial use of non-contact water recreation
WARM	beneficial use of warm freshwater habitat
COLD	beneficial use of cold freshwater habitat
WILD	beneficial use of wildlife habitat
RARE	beneficial use of rare, threatened or endangered species

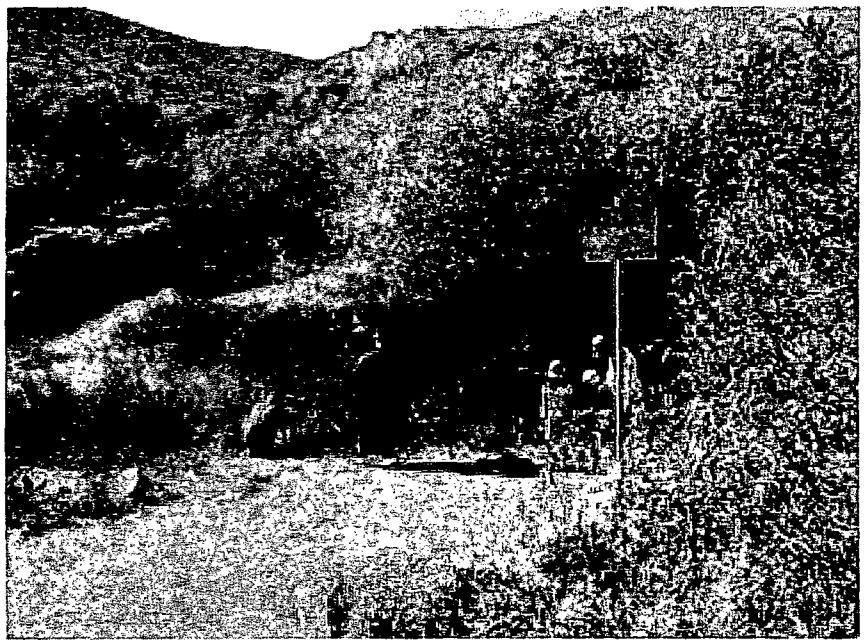


Photographs:

San Diego River

095_5-4-2001.jpg
5/4/2001

Mission Trails Park Recreation Area: Foam and algae bloom. Bottom of river layered with algal mats and garbage. Recreators often swim and fish in the river despite the health risks.



094_5-4-2001.jpg
5/4/2001

Fisherman obtain polluted water for crayfish harvested from San Diego River at Mission Dam, Mission Trails Regional Park, City of San Diego. An adjacent picnic area is impacted by river odors.

035_5-3-2001.jpg

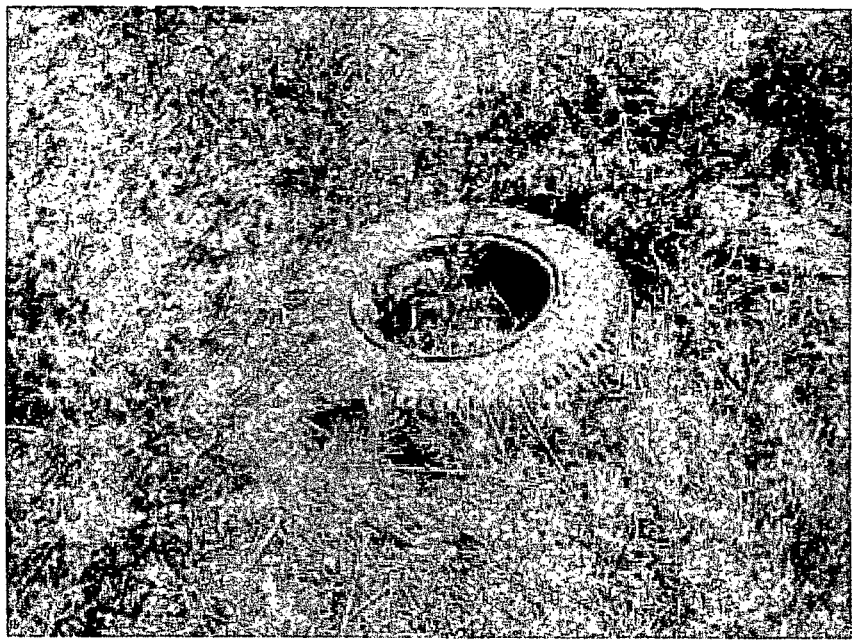
Invasive species in the San Diego River floodplain ; Peruvian Peppertree (*Schinus molle)* and palm.

031_5-3-2001.jpg

Fields of invasive Giant Reed (*Arundo donax)* in S.D. River floodplain east of Carlton Oaks Golf Course.

029_5-3-2001.jpg
030_5-3-2001.jpg
034_5-3-2001.jpg

Dump at Carlton Oaks Golf Course in the San Diego River Floodplain. Golf course is also a source of fertilizer runoff. Old tires in dump site.

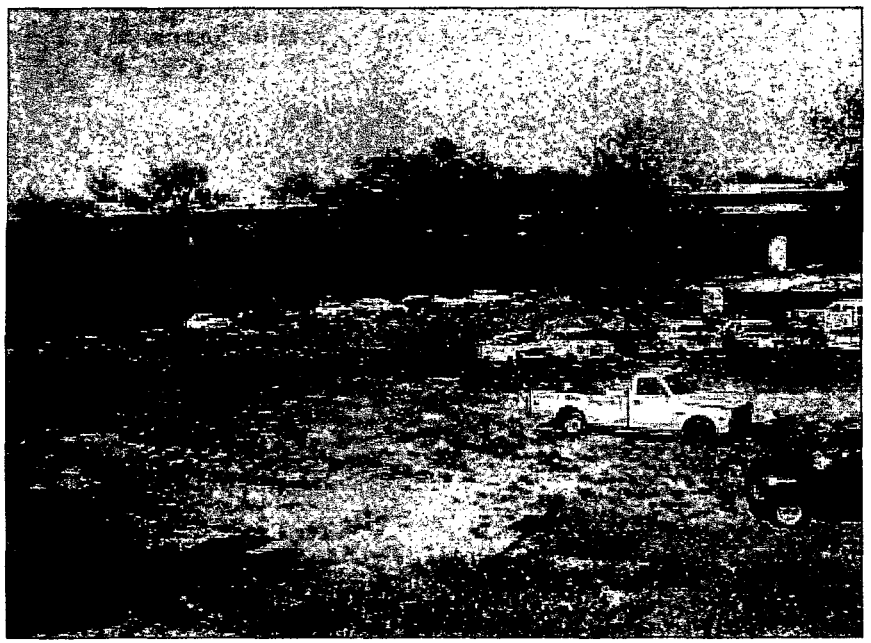


San Diego River floodplain and Forrester Creek:

092_5-4-2001.jpg, &
091_5-4-2001.jpg
5/4/2001

Ranch junkyard adjacent to San Diego River. Site has approximately 30 decaying vehicles (hazardous waste) and is a direct source of animal waste from horse stables. (Located north of Mission Gorge Road at junction with Carribean and adjacent to K-Mart.)

90_5-4-2001.jpg
5/4/2001
Solid wastes on Forrester creek near its junction in the San Diego River floodplain.



087_5-4-2001.jpg
5/4/2001
Algal mats and solid waste in Forrester Creek in S.D. River floodplain.

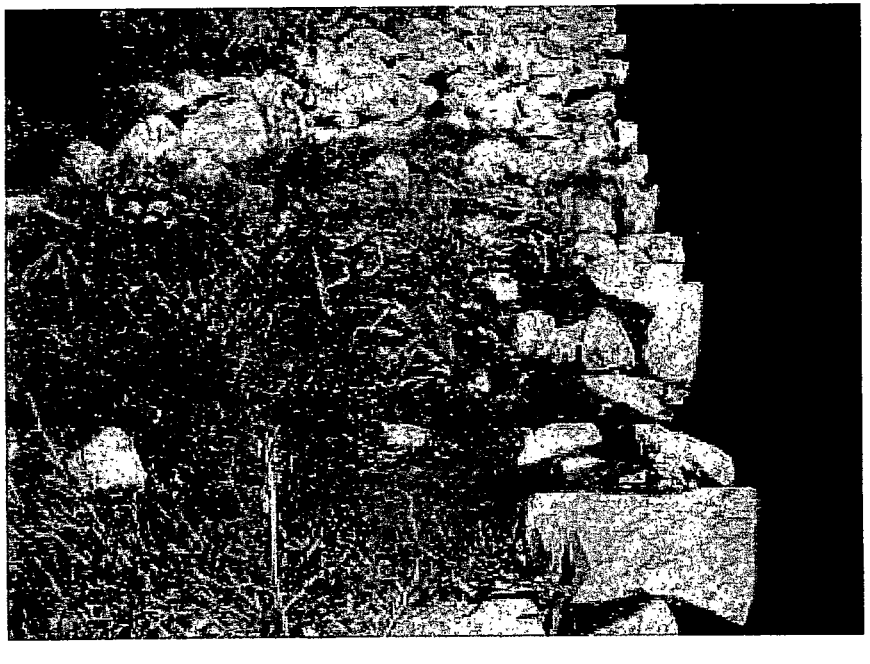
085_5-4-2001.jpg
5/4/2001
Invasive palms, sediment, solid wastes in Forrester Creek in S.D. River floodplain.

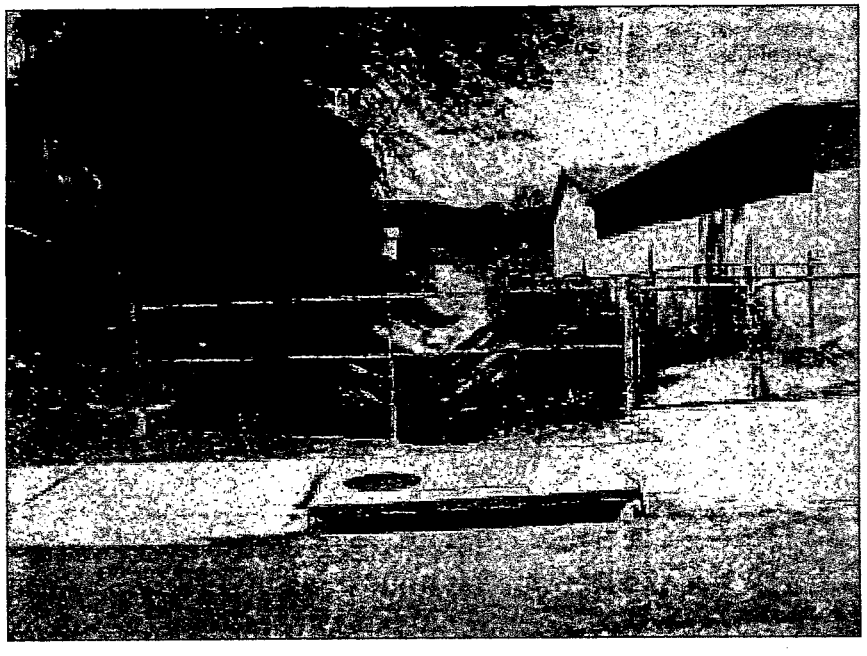
088_5-4-2001.jpg
5/4/2001
Sediment, Algal mats and solid waste in Forrester Creek in S.D. River floodplain.

083_5-4-2001.jpg
5/4/2001
Fields of invasive *Arundo donax* in S.D. River floodplain on CALTRANS property damaged by the construction of SR-125.

081_5-4-2001.jpg
5/4/2001
Algal mats and invasive palms at Fanita Creek entrance to S.D. River floodplain.

089_5-4-2001.jpg
5/4/2001
Algal mats and solid wastes in Forrester Creek Channel at San Diego River floodplain.



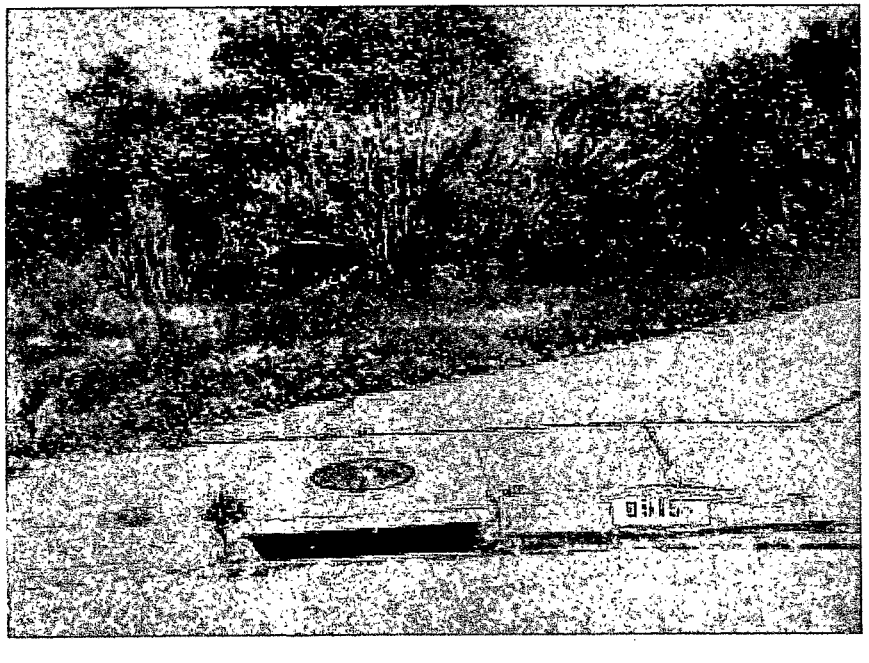


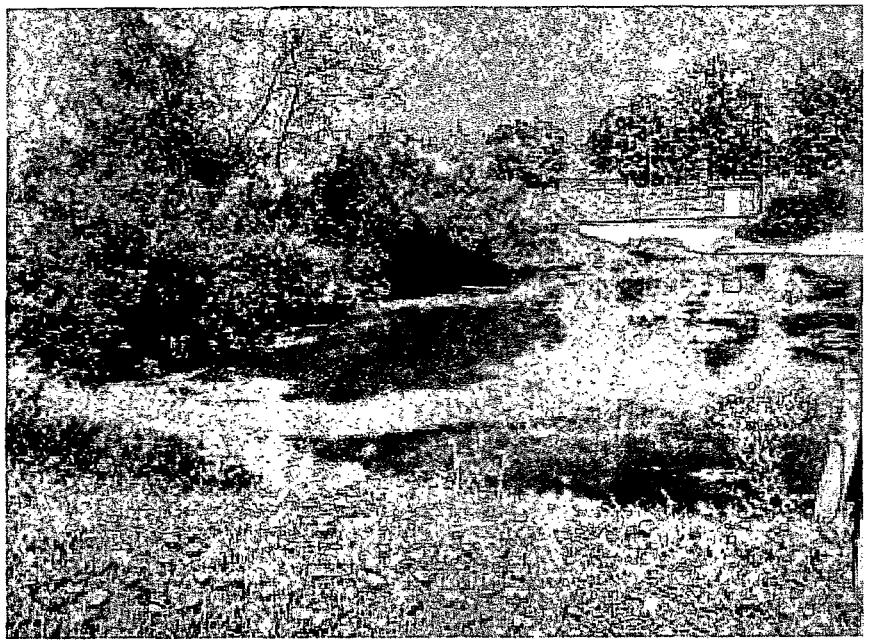
Santee storm drain examples:

079_5-4-2001.jpg
5/4/2001
Storm drain on Lake Canyon Road adjacent to Halberns Blvd. is a source of non-point source pollution typical of the San Diego watershed in Santee. Drains often carry highly polluted "dry flows."

009_5-3-2001.jpg
5/4/2001
Storm drain at 8915 River Valley Circle directs "dry flows" directly into Sycamore Creek. *Arundo donax* and palms invade riparian habitat of the endangered least Bell's vireo.

049_5-3-2001.jpg
Storm drains with polluted waters empty directly into Sycamore Canyon Creek.



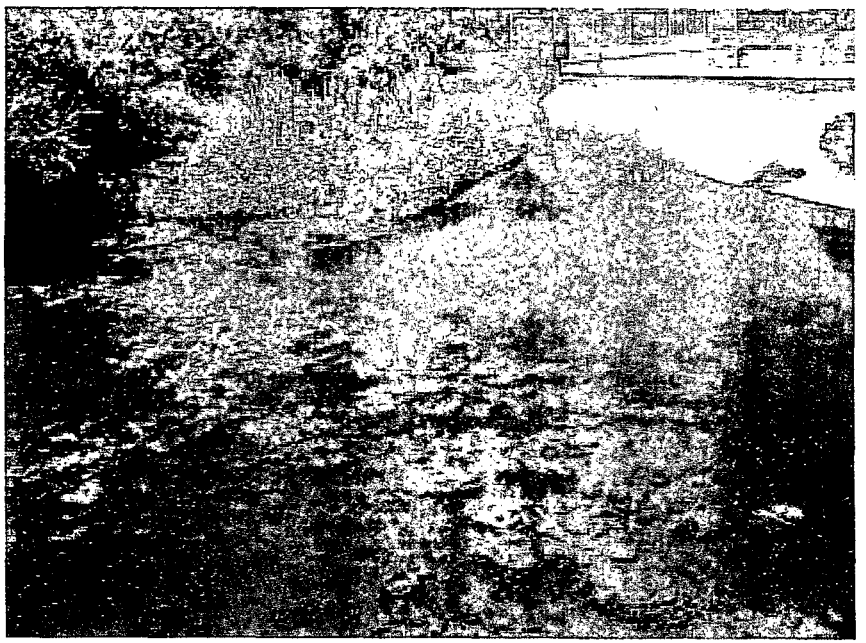


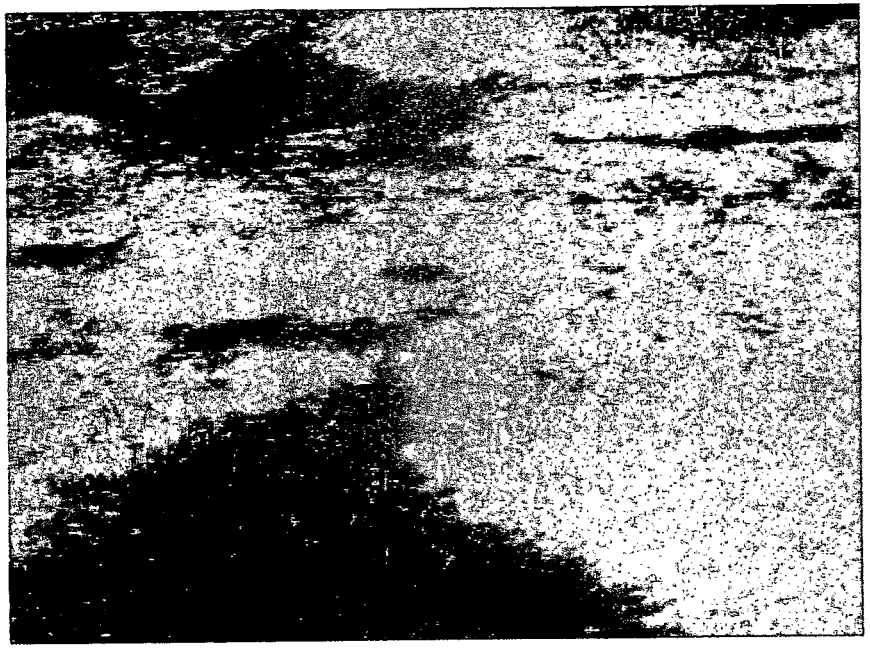
Sycamore Creek (San Diego River to Fanita Ranch adjacent to Santee Lakes):

013_5-3-2001.jpg
Sycamore Creek at Carlton Oaks Bridge and Padre Dam Municipal Water District. Algal mats and invasive ice plant.

025_5-3-2001.jpg
Sycamore Creek at Carlton Oaks Bridge near junction with San Diego River floodplain. Algae blooms and solid waste.

018_5-3-2001.jpg
Sycamore Creek. Note algae bloom at storm drain (upper right). Storm drains carry polluted "dry flows" and directly enter the creek.





016_5-3-2001.jpg
Algal mats in Sycamore Creek at Carlton Oaks Bridge and Padre Dam Municipal Water District.

024_5-3-2001.jpg
Algal mats and solid waste in Sycamore Creek at Carlton Oaks Bridge.

017_5-3-2001.jpg
Algal mats and solid waste in Sycamore Creek.

072_5-3-2001.jpg
Natural vegetation cleared and replaced with invasive ice plant and Blue Gum Eucalyptus (***Eucalyptus globules).*** Sycamore Creek west of Santee Lake #1.

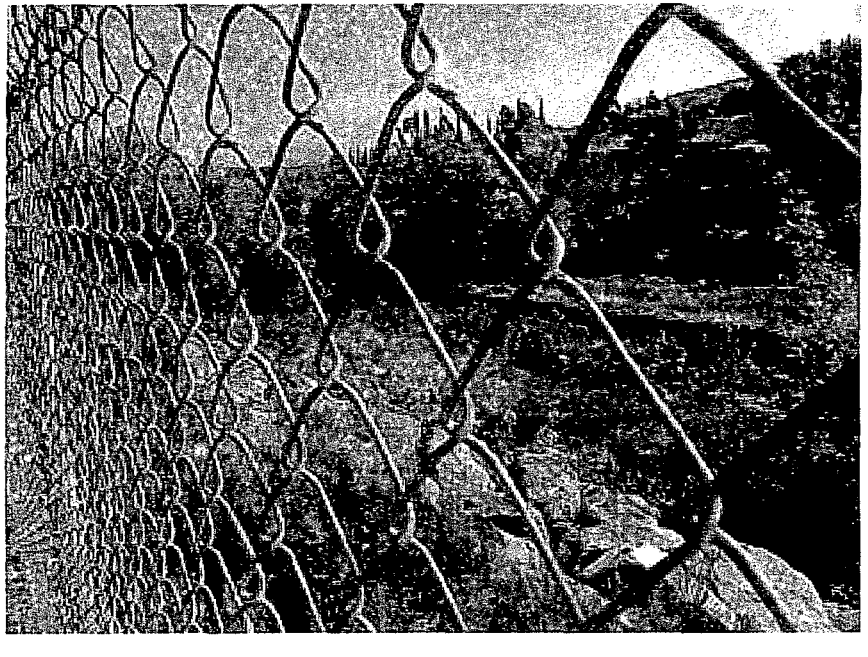
074_5-3-2001.jpg
Construction sediment on the bank of Sycamore Creek. Santee Lakes Regional Park adjacent to Lake #1.

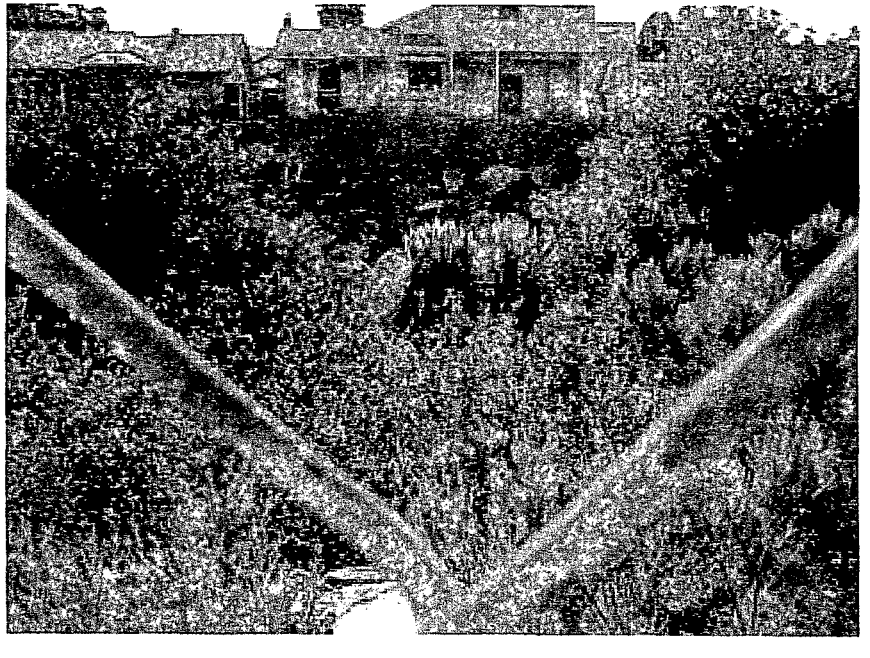
020_5-3-2001.jpg
Sycamore Creek banks dominated by invasive plants such as *Arundo donax*

045_5-3-2001.jpg
046_5-3-2001.jpg

Numerous homeowners clear native vegetation to maintain their views of Santee Lakes. Vegetation is left to decay and be swept away by Sycamore Creek.

048_5-3-2001.jpg
Pampass grass (*Cortaderia selloana*) invades Sycamore Creek.

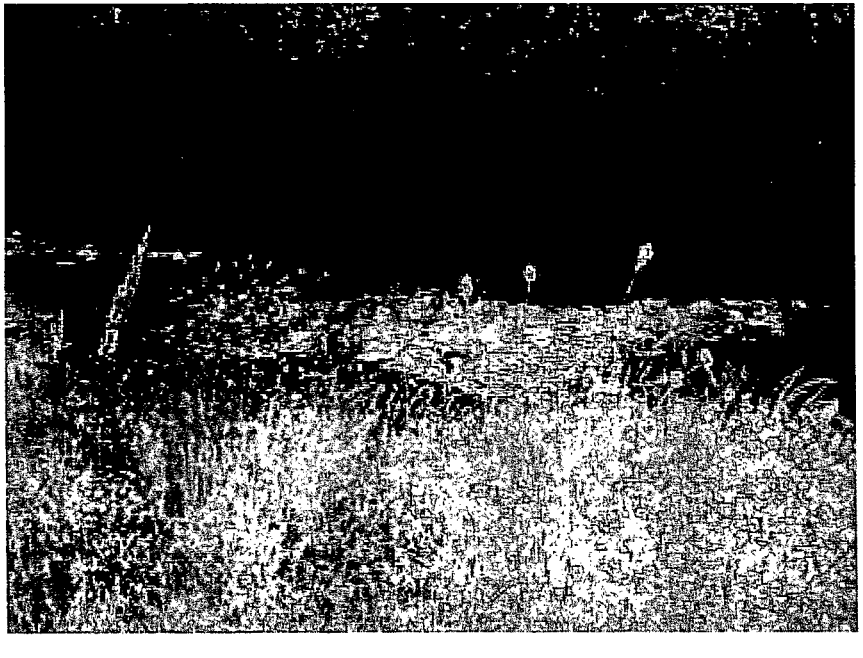


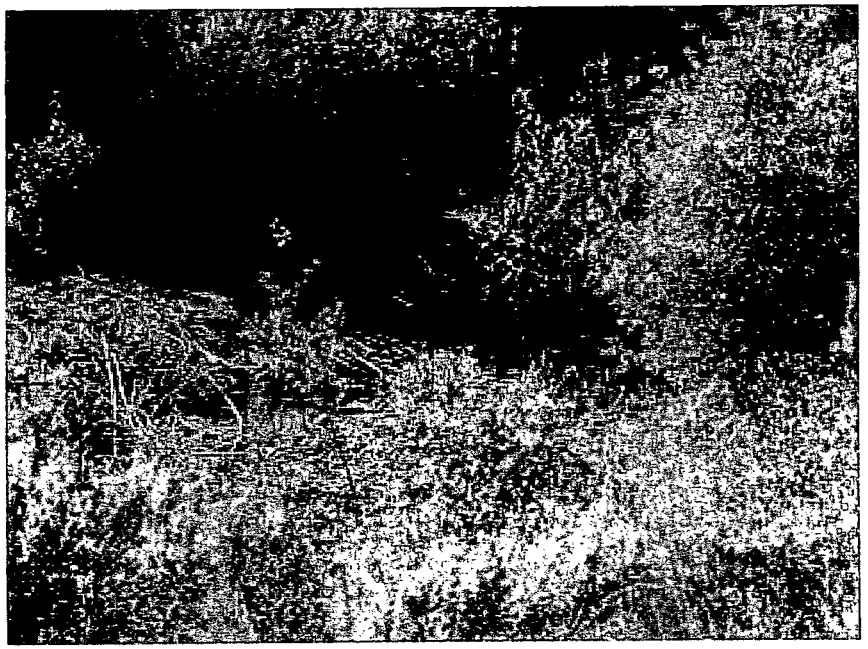


052_5-3-2001.jpg
054_5-3-2001.jpg

Horse stables at 10300 Pebble Beach Drive dispose of animal wastes by shoveling it over the bank directly into Sycamore Creek.

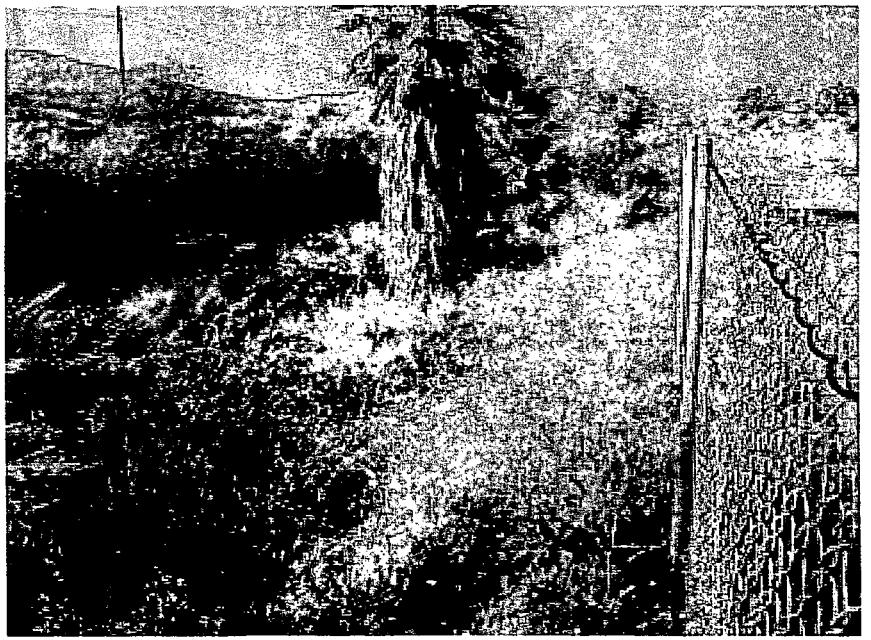
062_5-3-2001.jpg
Algae blooms in Sycamore Creek adjacent to Santee Lakes Campground.

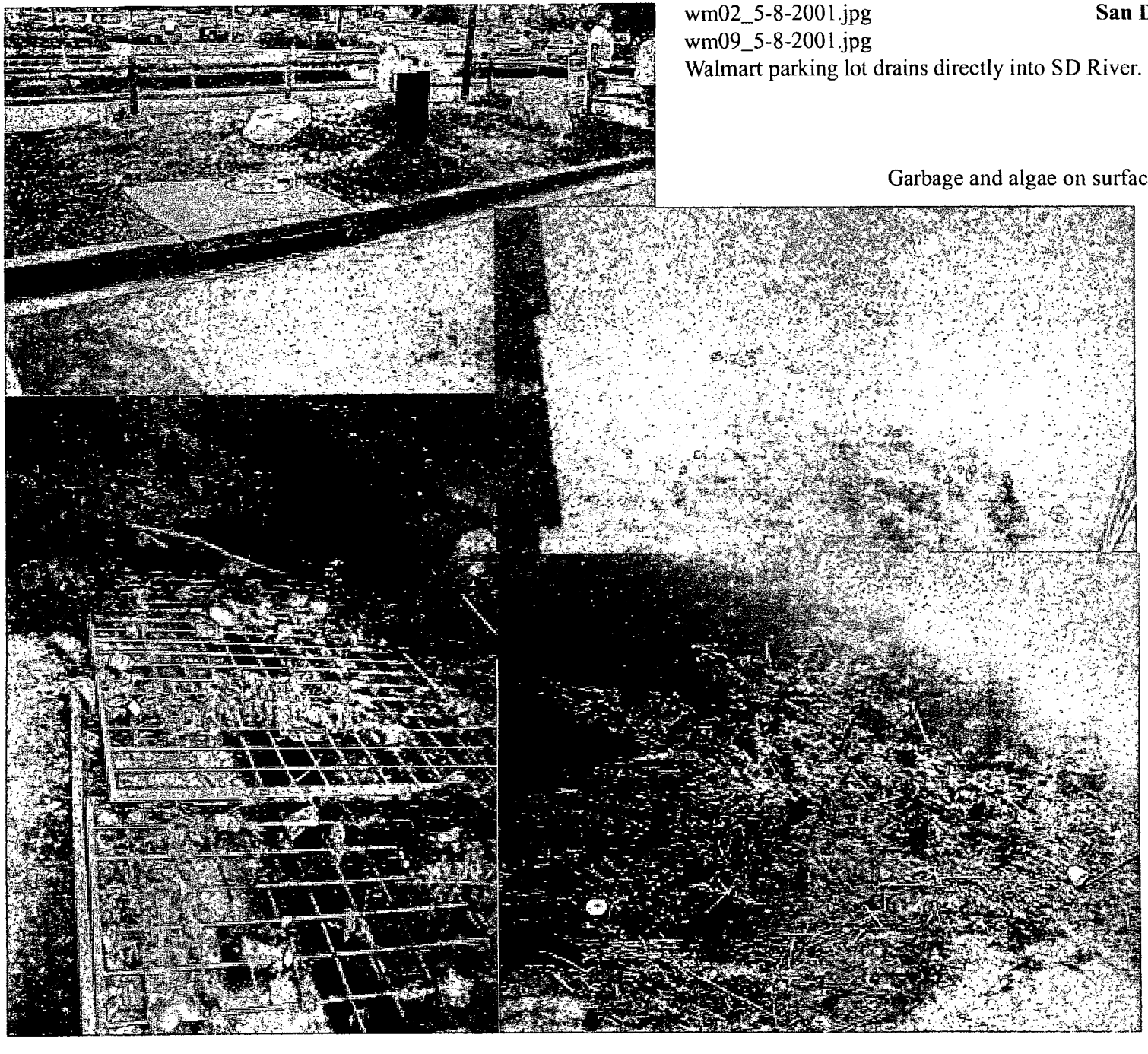




071_5-3-2001.jpg
Pampass grass (*Cortaderia selloana*) and Giant Reed (*Arundo donax)* invade Sycamore Creek.

060_5-3-2001.jpg
059_5-3-2001.jpg
Tamarisk and palms invade Sycamore Creek adjacent to Santee Lakes campground.





wm02_5-8-2001.jpg **San Diego River**
wm09_5-8-2001.jpg
Walmart parking lot drains directly into SD River.

wm18_5-8-2001.jpg
wm17_5-8-2001.jpg
Garbage and algae on surface and bottom of SD River.

wm05_5-8-2001.jpg SD River is habitat for endangered least Bell's vireo.
wm11_5-8-2001.jpg Shopping carts become solid waste.

wm16_5-8-2001.jpg Plastic botttle, shopping cart, algae along river.
wm19_5-8-2001.jpg Shopping cart and other waste in SD River.

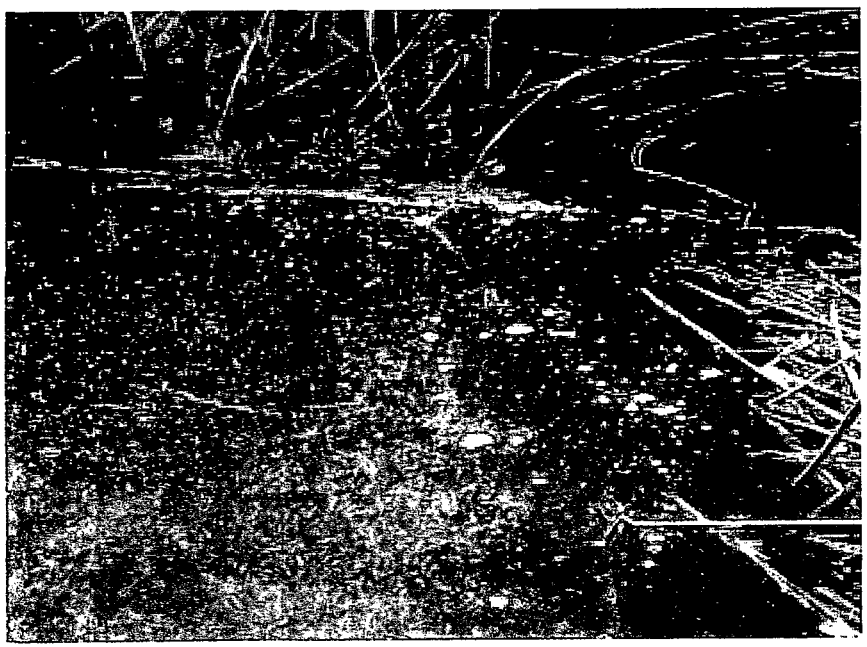
R06_5-5-2001.jpg & R07_5-5-2001.jpg Road drains sediment from RCP Block directly into SD River.

R11_5-5-2001.jpg Invasive *Arundo donax* and soiled diapers.

R15_5-5-2001.jpg Solid waste and algae in San Diego River.

R16_5-5-2001.jpg
Invasive *Arundo donax* in San Diego River.

R18_5-5-2001.jpg & R14_5-5-2001.jpg
Solid waste in the San Diego River.

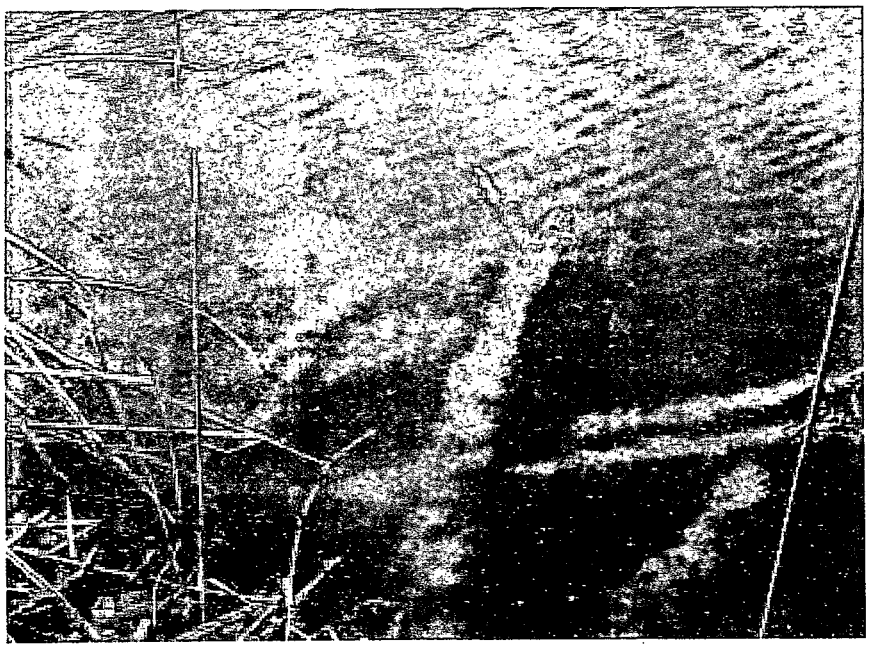


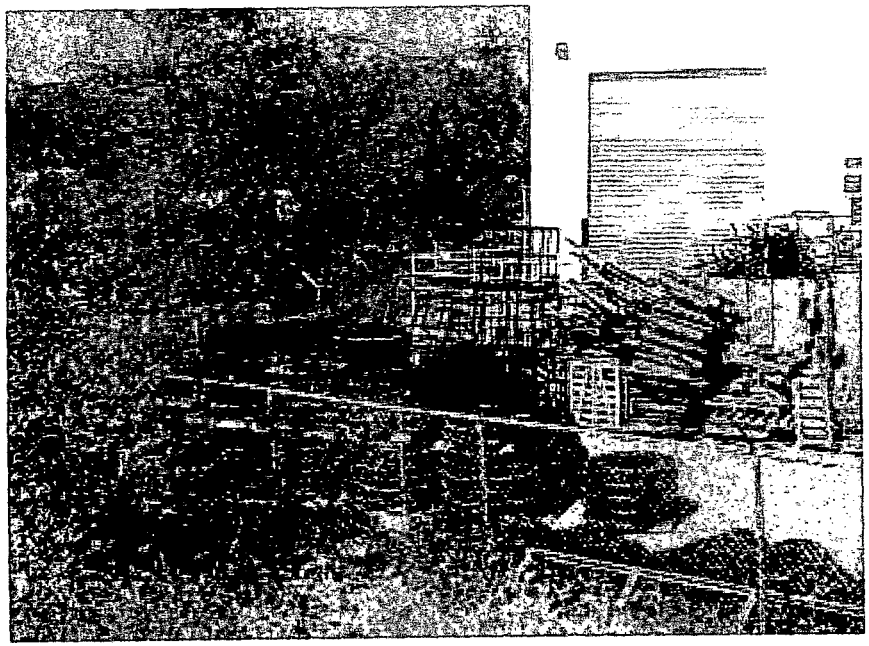
R27_5-5-2001.jpg Graded floodplain with invasive species in background.

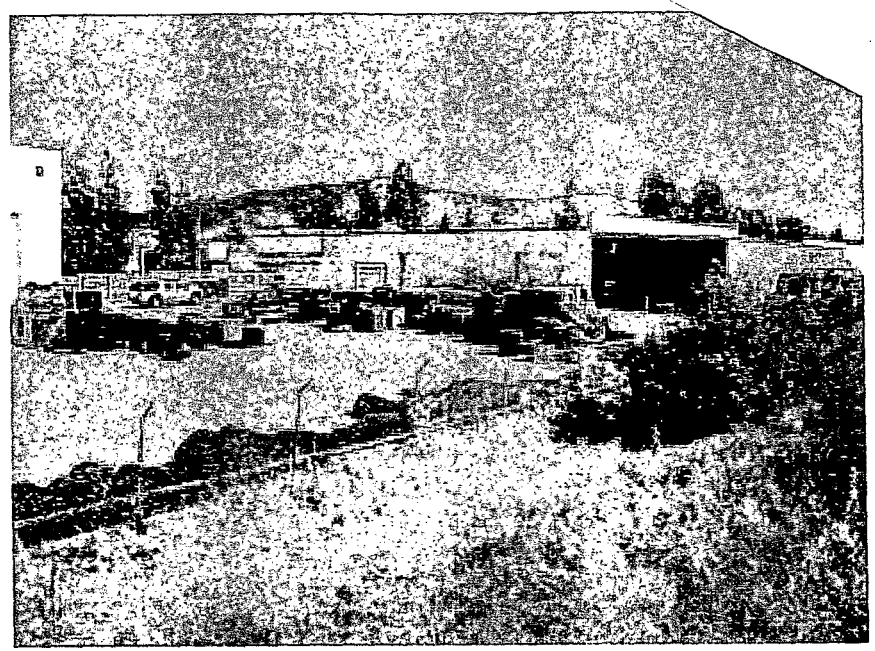
R26_5-5-2001.jpg Algae bloom east of RCP, SD River.

R21_5-5-2001.jpg Oil contamination.

R25_5-5-2001.jpg. Solid waste in SD River floodplain.







R30_5-5-2001.jpg & R28_5-5-2001.jpg
Industrial storage along the San Diego River bank east of Magnolia Avenue.

R20_5-5-2001.jpg

Tire caught on base of tree in San Diego River bottom.