Regional Water Quality Control Board
Los Angeles Region

Surface Water Ambient Monitoring Program

Annual Workplan for FY 2004/05

September 30, 2004

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1. Long-term (5 year) Plan

The Porter-Cologne Water Quality Control Act and the federal Clean Water Act (CWA) direct water quality programs to implement efforts intended to protect and restore the integrity of waters of the State. California Assembly Bill (AB) 982 (Water Code Section 13192) requires the State Water Resources Control Board (SWRCB) to assess and report on the State monitoring programs and to prepare a proposal for a comprehensive surface water quality monitoring program. Ambient monitoring is independent of other water quality programs, such as the National Pollutant Discharge Elimination Program, which requires monitoring in direct relation to regulation of point source discharges. Ambient monitoring can serve as a measure of (1) the overall quality of water resources and (2) the overall effectiveness of Regional Water Quality Control Boards' (RWQCBs') prevention, regulatory, and remedial actions. Current monitoring and assessment capability at the SWRCB is limited and tends to be focused on specific program needs. This has led to a fragmentation of monitoring efforts resulting in gaps in needed information and a lack of integrated analysis. AB 982 mandates the SWRCB create and implement a comprehensive surface water quality monitoring program. The SWRCB and the RWQCBs have responded to this mandate with the development and implementation of the Surface Water Ambient Monitoring Program (SWAMP). The program goals of SWAMP are:

- Identify specific problems preventing the SWRCB, RWQCBs, and the public from realizing beneficial uses in targeted watersheds.

- Create an ambient monitoring program that addresses all hydrologic units of the State using consistent and objective monitoring, sampling and analysis methods; consistent data quality assurance protocols; and centralized data management.

- Document ambient water quality conditions in potentially "clean" and polluted areas.

- Provide the data to evaluate the effectiveness of water quality regulatory programs in protecting beneficial uses of waters of the State.[1]

The overall goal of the Site-Specific Monitoring portion of SWAMP is to develop site-specific information on sites or water bodies that are (1) known or suspected to have water quality problems and (2) known or suspected to be clean. This portion of SWAMP is focused on collecting information from sites in water bodies of the State that could be potentially listed or delisted under Clean Water Act Section 303(d). This workplan has been developed to implement the Site-Specific Monitoring Requirements of SWAMP. In Region 4, both the Site-Specific Monitoring goals and the Regional Monitoring goals have been integrated into one ambient monitoring program.

Per AB 982, monitoring is required in each hydrologic unit of the State at least once every five years. Region 4 proposes in general to visit each hydrologic unit one year ahead of the WMI schedule for targeted watersheds which rotate on a five-year cycle which would allow for monitoring all hydrologic units every five years. In this strategy, data will be gathered, analyzed, and interpreted in time to use the following year during NPDES permit renewals and other ongoing activities within the targeted watershed. The following table below provides a summary of the schedule for upcoming years:

[1] State of California State Water Resources Control Board; Proposal for A Comprehensive Ambient Surface Water Quality Monitoring Program; Report to Legislature; November 30, 2000.

Hydrologic Unit	WMI Timeline	SWAMP Timeline
Channel Islands Ventura River Misc. Ventura Coastal	2005-2006 2006-2007 2006-2007	2004-2005
Santa Clara River Calleguas Creek	2006-2007 2006-2007	2005-2006
Dominguez Channel- LA/LB Harbor	2007-2008	2006-2007
Santa Monica Bay	2008-2009	2007-2008
Los Angeles River San Gabriel River Los Cerritos Channel	2009-2010 2010-2011 2010-2011	2008-2009

SWAMP monitoring should address relevant goals in the 2004 Governor's Action Plan, the California Clean Water Partnership, the Water Board's Strategic Plan and the Los Angeles Regional Board's Fiscal Year 04-05 Priorities. The Los Angeles Regional Board's SWAMP monitoring program is designed to fulfil specific goals of each of these programs.

The Governor's Action Plan calls for clean-up of the most endangered watersheds, ensuring that existing permitting fees are targeted toward resource management, protection of ground water, surface water and coastal waters from pollution, wetlands protection, and establishment of EPIC indicators for each action item identified by the plan. The Los Angeles Regional Board's SWAMP monitoring program will help identify endangered watersheds in the region and will be linked with other programs that will result in protection of surface waters and coastal waters from various sources of pollution. The SWAMP program is funded by discharger fees, which are being used for resource management. SWAMP monitoring of surface waters that drain into major wetlands (e.g., Mugu Lagoon, Ballona Creek) will lead to wetlands protection by identifying areas that require water quality improvements. SWAMP monitoring in southern California has led to the development of a bioassessment index, which could be used as a biological indicator of the health of surface waters for the EPIC program.

The California Clean Water Partnership between the U.S. Environmental Protection Agency and the State Water Resources Control Board has four main objectives to improve water quality: implement the law, improve efficiency of regulatory programs, target critical problems, and address concerns of the public. This has led to the development of a Five-Year Strategy Agreement (2003-2008) for surface water programs. The Los Angeles Regional Board's SWAMP monitoring program will achieve many of the goals of this strategy agreement identified under Section B, Monitoring and Assessment. Category 1 tasks include development of a SWAMP implementation plan consistent with USEPA's "Elements of an adequate state ambient water monitoring and assessment program", implementation of a statewide Quality Management Plan, and biennial overall assessment of waters of the state. The Los Angeles Regional Board's SWAMP monitoring program has been designed with USEPA's guidance in mind and incorporates standard QA/QC methods. The regional SWAMP monitoring data can be integrated into a statewide assessment of water quality. Category 2 tasks include development of ambient data formats, tracking of water quality improvements, assessment of probabilistic monitoring (EMAP design) for freshwater systems, application of regional monitoring and assessment frameworks to other areas of the state, and integration of NPDES monitoring into ambient monitoring programs. The Los Angeles Regional Board has embraced the probabilistic sampling design used by EMAP and the Bightwide monitoring of southern California coastal waters and applied it to certain SWAMP monitoring programs (e.g., Santa Clara River watershed, San Gabriel/Los Angeles River watersheds). We are integrating

existing NPDES monitoring programs with ambient monitoring to avoid duplication of effort and development effective, efficient SWAMP monitoring programs for those watersheds with major NPDES dischargers (e.g., Calleguas Creek watershed, Ventura River watershed, Dominguez Channel watershed, San Gabriel River watershed, Los Angeles River watershed). Our SWAMP monitoring design is based on sampling each watershed in the Los Angeles region on a five-year cycle, which will provide a means to track water quality improvements and evaluate the effectiveness of federal, state and local management activities designed to eliminate impairments and improve water quality in state waters. We are using standard ambient data formats, as they are developed, to facilitate the exchange of data between State Board, the Regional Boards, USEPA and other interested parties.

The Water Board's Strategic Plan includes goals for addressing whether surface waters are safe for drinking, fishing, swimming, and support healthy ecosystems and other beneficial uses (Goal #2) and whether water quality is comprehensively measured to evaluate protection and restoration efforts (Goal #6). SWAMP monitoring proposed for Fiscal Year 04-05 will provide information required to achieve both of these goals. In addition, the monitoring workplan has been designed according to operating principles that are essential to promoting the mission of the Strategic Plan, including internal and external coordination and collaboration activities and collection of the best scientific data possible. The monitoring data collected will be used to evaluate the success of management actions to protect and restore water quality in our region.

The Los Angeles Region has identified several regional priorities for Fiscal Year 04-05. The priority areas for water quality in surface waters include developing solutions for restoring impaired water quality, implementing TMDLs, preventing further impairments to regional waters, reducing/eliminating beach closures, reviewing and updating our Basin Plan, and further addressing impacts from septic tanks in the region. The SWAMP monitoring program will provide valuable data to assess overall conditions within each watershed in the Los Angeles Region, allowing us to target watersheds that require management plans to restore impaired water quality and to assess long-term trends to ensure that we prevent further impairments from occurring. As TMDLs are implemented throughout the region, SWAMP monitoring will be used to help assess the success of this program in eliminating water quality impairments. SWAMP monitoring data also will be used to support revisions to Basin Plan surface water objectives, providing a good assessment of baseline conditions throughout the region. SWAMP monitoring probably will not be relied upon to track beach water quality or septic tanks impacts, since the sampling frequency requirements and logistics of bacteriological sampling necessitate a different approach.

2. FY 04/05 Annual Workplan

A. Overview of Watersheds to be Monitored (Problematic or Clean)

This section will summarize site-specific problems(s), potential problem(s), or clean water locations to be monitored within the Miscellaneous Ventura Coastal Watershed Management Area, Ventura River and Channel Islands.

i. Channel Islands Harbor/Mandalay Bay

Background

Channel Islands Harbor is located south of the Santa Clara River (Figure 1) and is in the immediate vicinity of a considerable amount of residential development and some

agricultural lands. Reliant Energy's Mandalay Power Generating Station draws cooling water from Edison Canal, which originates at the north end of Channel Islands Harbor. The harbor is home to many recreational boats and two boatyards. Mandalay Bay is an extension of Channel Islands Harbor. Mandalay Bay was constructed in the early 1970s. The waterways of Mandalay Bay are surrounded by residential development. [2]

Beneficial Uses

Channel Islands Harbor: Industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, and wildlife habitat.

Mandalay Bay (Marina): Industrial service supply, navigation, water contact recreation, non-contact water recreation, marine habitat, and wildlife habitat.

Edison Canal Estuary: Industrial process supply, water contact recreation, non-contact water recreation, marine habitat, wildlife habitat, and preservation of rare, threatened or endangered species.

Known Impairments

Channel Islands Harbor is 303(d) listed for lead and zinc in sediments.

[2] California Regional Water Quality Control Board, Los Angeles Region; Watershed Management Initiative Chapter; Miscellaneous Ventura Coastal Watershed Management Area, December 2001.

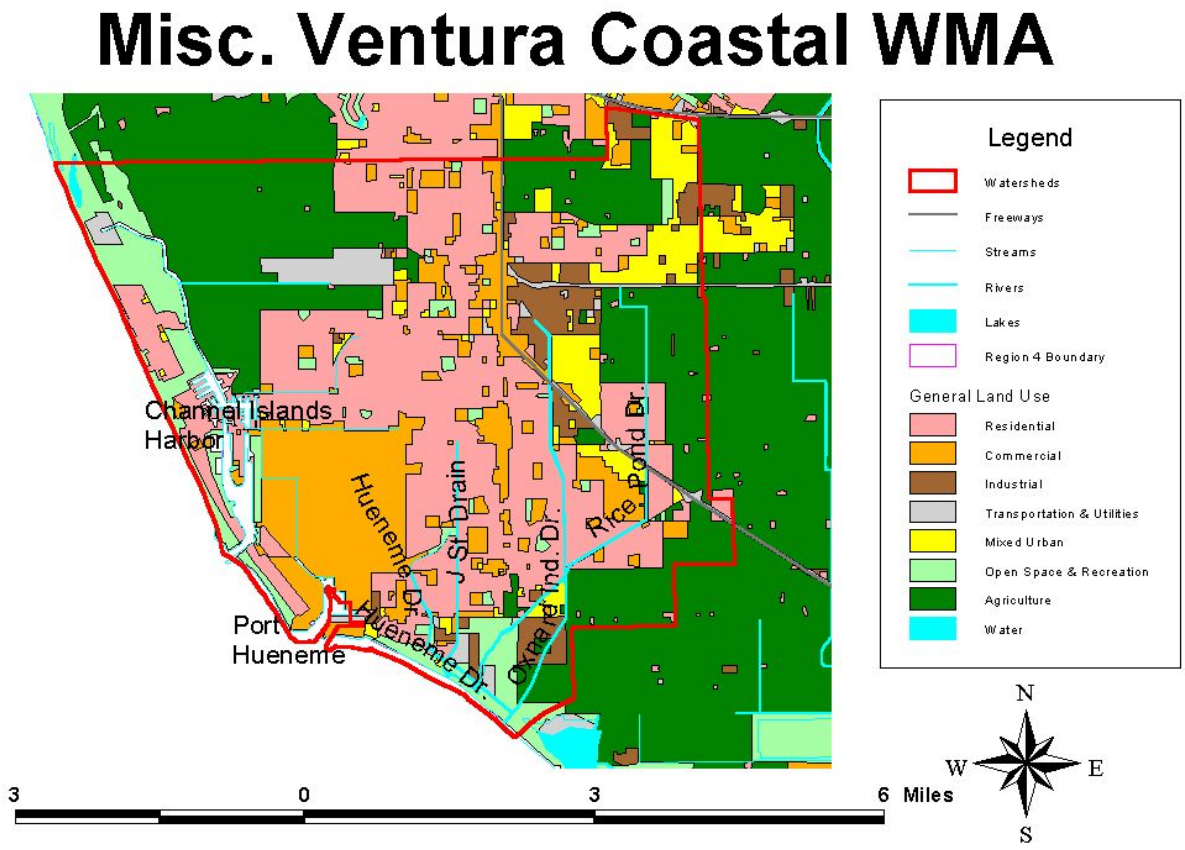

Figure 1. Miscellaneous Ventura Coastal Watershed Management Area: Channel Islands Harbor and Port Hueneme.

ii. Port Hueneme

Background

Port Hueneme is a medium-sized deepwater harbor located in Ventura County, north of Mugu Lagoon (Figure 1). It is the only deepwater between Los Angeles and San Francisco Bay. Part of Port Hueneme was operated by a U.S. Navy Construction Battalion until very recently, while the remainder of the harbor serves as a commercial port operated by the Oxnard Harbor District. Initial construction of the port occurred in 1939-40; the majority of the harbor as it exists today was completed by 1975. The commercial port serves ocean-going cargo vessels, including the import and export of automobiles, fresh fruit and produce and forest products. The port also serves as the primary support facility for the offshore oil industry in California's central coast area, including service for the oil platforms in the Santa Barbara Channel. Two endangered bird species may use the harbor: California brown pelican and California least tern.[2]

Beneficial Uses

Industrial process supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat and wildlife habitat.

Known Impairments

Port Hueneme Harbor (Back Basins) is 303(d) listed for DDTs and PCBs in tissue, probably originating from nonpoint sources.

iii. Ventura Marina/Ventura Keys

Background

Ventura Marina is a small craft harbor located between the mouths of the Ventura and Santa Clara Rivers (Figure 2). It is home to numerous small boats and two boatyards. The Ventura Keys area of the marina is a residential area situated along three main finger canals. The marina is surrounded by agricultural land and a large flood control channel (Arundell Barranca) drains into the marina near the Ventura Keys area. Since the marina is located between the mouths of two major rivers which discharge large sediment loads from relatively undeveloped watersheds, the routine maintenance dredging is required to keep the entrance channel open. Dredging also is needed periodically to remove shoaling from areas within Ventura Marina and the Ventura Keys.[2]

Beneficial uses

Ventura Marina: Industrial process supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wildlife habitat, and shellfish harvesting.

Ventura Keys (Marina): Navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, and wildlife habitat.

Known Impairments

Ventura Keys is 303(d) listed for high coliform counts, presumably due to nonpoint sources.

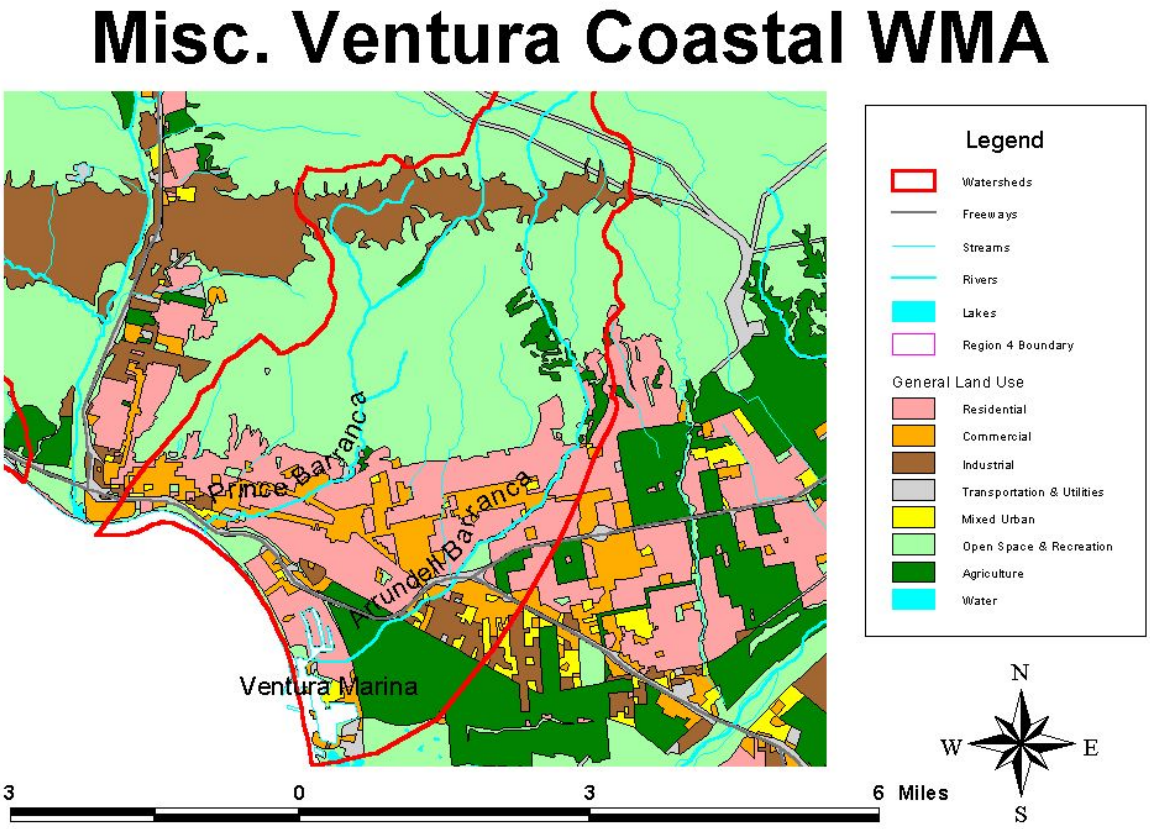

Figure 2. Miscellaneous Ventura Coastal Watershed Management Area: Ventura Marina.

iv. McGrath Lake

Background

McGrath Lake is a small brackish waterbody located just south of the Santa Clara River and north of Channel Islands Harbor (Figure 1). The lake is located partially on State Parks land and partially on privately-owned oil fields still in current production. A number of agricultural ditches drain into the lake. A state beach is located off the coastal side of the lake. The dune habitat around the lake is rare in this region and is utilized by a large number of overwintering migratory birds.[2]

Beneficial uses

Water contact recreation (limited public access precludes full utilization), non-contact water recreation (limited public access precludes full utilization), commercial and sport fishing (potential use), estuarine habitat, and preservation of rare, threatened or endangered species.

Known Impairments

McGrath Lake is 303(d) listed for chlordane, DDTs, dieldrin, and PCBs in sediment, as well as for sediment toxicity, probably due to historical use of pesticides and lubricants, and stormwater runoff and aerial deposition from agricultural fields. McGrath Lake also is listed for fecal coliform, possibly associated with agriculture, landfills or natural sources.

v. Ormond Beach/Ormond Beach Wetlands

Background

Ormond Beach wetlands are located in the city of Oxnard east of Port Hueneme and west of Mugu Lagoon. Ten fragmented sites, comprising approximately 217 acres of wetlands, extend along a one-mile stretch of the coast. The site contains energy production facilities, a wastewater treatment plant, heavy manufacturing facilities, roads, railroad tracks, flood control channels and drainage ditches. The majority of wetlands at Ormond Beach are not directly tidally connected, although historically they probably were connected to Mugu Lagoon through channels and sloughs, which provided limited tidal influence. The Oxnard Industrial Drain, a four-mile long manmade channel draining the eastern portion of the city of Oxnard flows into Ormond Beach Lagoon directly at the east end or via the J Street Drain to the west. The Oxnard Industrial Drain is concrete-lined north of Hueneme Road and mostly unlined south of this road. The lagoon also receives flow the Hueneme Drain (via the J Street Drain), as well as from ocean waves during high tides, precipitation and groundwater seepage. During periods of heavy rainfall, the lagoon also may receive flows from a salt marsh located east of the Halaco facility via a small drainage channel (normally closed off by a flapgate). The lagoon entrance normally is closed at the ocean end due to berm formation during summer months. Several native fish species are found in the lagoon, including the federally endangered tidewater goby. There is a California least tern (federal and state endangered bird species) nesting site at Ormond Beach and birds feed in the lagoon and nearby drains.

Beneficial uses

Ormond Beach: Industrial water supply, navigation, hydropower generation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wildlife habitat, preservation of rare, threatened or endangered species, spawning, reproduction and/or early development (potential use) and shellfish harvesting.

Ormond Beach Wetlands: Water contact recreation, non-contact water recreation, estuarine habitat, wildlife habitat, preservation or rare, threatened or endangered species, and wetland habitat.

Known Impairments

Ormond Beach is 303(d) listed for bacterial indicators. The areas affected are a 50-yard area north of Oxnard Industrial Drain and a 50-yard area south of J Street Drain.

vi. Ventura Coastal Streams

Background

Several coastal streams are part of the Miscellaneous Coastal Watershed Management Area, including Los Sauces Creek (Poverty Canyon), Madranio Canyon Creek, Javon Canyon Creek, Padre Juan Canyon Creek, La Jolla Canyon Creek, Big Sycamore Canyon Creek, Serrano Canyon Creek (tributary to Big Sycamore Canyon Creek), Deer Canyon Creek , Little Sycamore Canyon Creek and a few unnamed drainages (Figures 3 and 4).

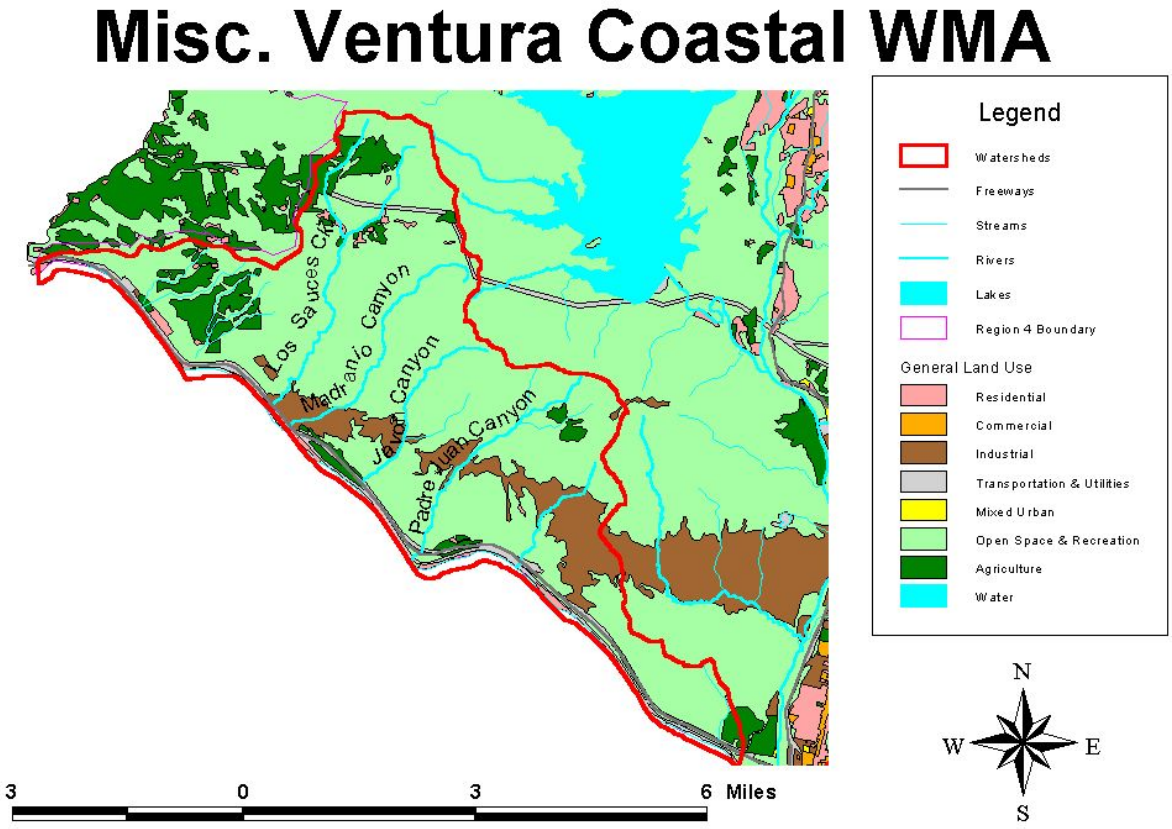

Figure 3. Miscellaneous Ventura Coastal Watershed Management Area: Ventura Coastal Streams.

Beneficial uses

Los Sauces Creek/Poverty Canyon: Municipal and domestic supply (potential use), industrial service supply (intermittent use), industrial process supply (intermittent), agricultural supply (intermittent), ground water recharge (intermittent), water contact recreation (intermittent), non-contact water recreation (intermittent), warm freshwater

habitat (intermittent), cold freshwater habitat (intermittent), wildlife habitat, migration of aquatic organisms (intermittent), and spawning, reproduction and/or early development (intermittent).

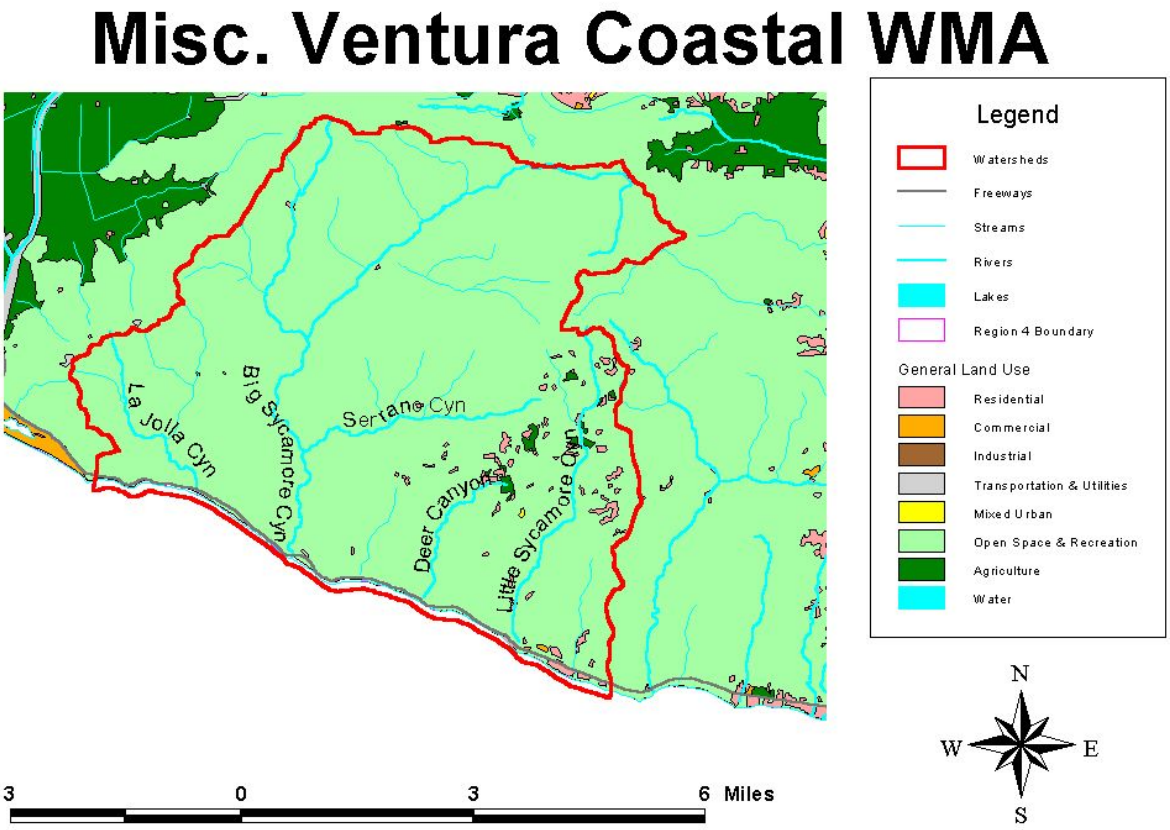

Figure 4. Miscellaneous Ventura Coastal Watershed Management Area: Ventura Coastal Streams.

Madranio Canyon: Municipal and domestic supply (potential use), industrial service supply (intermittent use), industrial process supply (intermittent), agricultural supply (intermittent), ground water recharge (intermittent), water contact recreation (intermittent), non-contact water recreation (intermittent), warm freshwater habitat (intermittent), cold freshwater habitat (intermittent), wildlife habitat, migration of aquatic organisms (intermittent), and spawning, reproduction and/or early development (intermittent).

Javon Canyon: Municipal and domestic supply (potential use), industrial service supply (intermittent use), industrial process supply (intermittent), agricultural supply (intermittent), ground water recharge (intermittent), water contact recreation (intermittent),

non-contact water recreation (intermittent), warm freshwater habitat (intermittent), cold freshwater habitat (intermittent), wildlife habitat, migration of aquatic organisms (intermittent), spawning, reproduction and/or early development (intermittent), and wetland habitat.

Padre Juan Canyon: Municipal and domestic supply (potential use), industrial service supply (intermittent use), industrial process supply (intermittent), agricultural supply (intermittent), ground water recharge (intermittent), water contact recreation (intermittent), non-contact water recreation (intermittent), warm freshwater habitat (intermittent), cold freshwater habitat (intermittent), wildlife habitat, migration of aquatic organisms (intermittent), and spawning, reproduction and/or early development (intermittent).

Big Sycamore Canyon Creek: Municipal and domestic supply (potential use), ground water recharge (intermittent), water contact recreation (intermittent), non-contact water recreation (intermittent), warm freshwater habitat (intermittent), cold freshwater habitat, wildlife habitat, migration of aquatic organisms (potential), spawning, reproduction and/or early development (potential), and wetland habitat.

Little Sycamore Canyon Creek: Municipal and domestic supply (potential use), water contact recreation (intermittent), non-contact water recreation (intermittent), warm freshwater habitat (intermittent), wildlife habitat, preservation of rare, threatened or endangered species, and spawning, reproduction and/or early development (potential).

Known Impairments

None of the Ventura coastal streams are 303(d) listed.

vii. Ventura River

Background

The Ventura River Watershed (Figure 5) is located in the northwestern portion of Ventura County draining an area of 226 square miles roughly half of which is on Forest Service land (USFS, 1997). The Ventura River has several major tributaries including Matilija Creek, North Fork Matilija Creek, San Antonio Creek and Canada Larga. Two reservoirs, Lake Casitas and Matilija Reservoir serve as water supply and flood control areas respectively. The watershed is minimally developed and compared to other watersheds of the Los Angeles Region has large areas of good water quality and excellent aquatic habitat. About 30 miles of the upper Main Fork Matilija and its tributaries are designated as Wild and Scenic Rivers. The watershed, however, has been degraded, particularly in the lower areas by both nonpoint and point sources. The major point source is the Ojai Valley Wastewater Treatment Plant that was recently upgraded. Nonpoint sources include urban runoff, road building, agriculture and grazing (including confined animal facilities), air deposition, and recreation. Water quantity is an important issue in this watershed. Ground water is used for domestic and irrigation purposes and the alluvial basins must be carefully managed and recharged. Groundwater basins generally are aligned with the surface flows and are made up of alluvial material that is quickly recharged and depleted

and is highly interconnected with surface flows. The steelhead trout and other fisheries are restricted or diminished by diversions and dams that have cut off important spawning areas, by diminished flow in the main stem of the river and by poor water quality.[3]

The Ventura River watershed can be divided into three distinct fluvial zones. The headwaters and upper tributaries, including Matilija Creek, North Fork Matilija Creek and San Antonio Creek is an area characterized by production of water and sediment. The middle zone from the confluence of Matilija Creek and North Fork Matilija Creek to the estuary is an area of storage and transfer of sediment. Mid-channel islands, sand and gravel bars, bank erosion areas and migrating channels make up this dynamic zone. There are a number of active geologic structures in this zone including a fault system near Oak View, the Red Mountain Fault near Canada Larga and the Ventura Avenue anticline in the lower watershed. The lower zone is the delta/estuary system that is characterized by sediment deposition and shifting channels.

Matilija Creek: Matilija Creek drains an area of about 56 square miles and has an average gradient of 200 feet per mile. The main stem is 15.6 miles long. Prior to construction of the Robles Diversion Structure in 1958, the Matilija Creek subwatershed provided 46 percent of the long-term natural flow in the Ventura River, as gauged at Foster Park. The two main tributaries are the North Fork of Matilija Creek and Murietta Creek. This subwatershed is primarily managed by the US Forest Service.

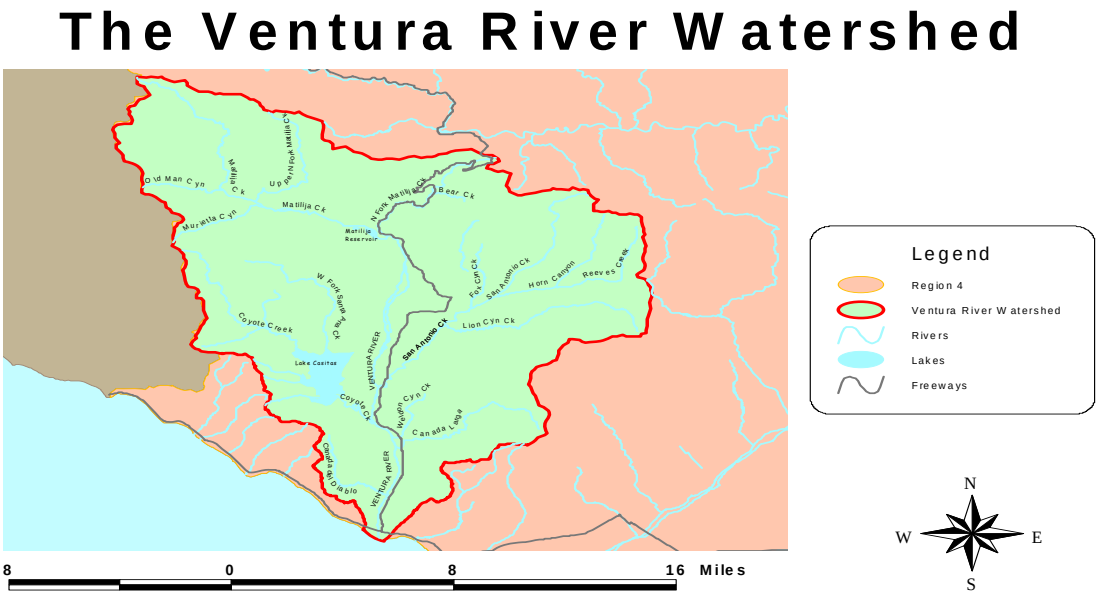

Figure 5. Ventura River Watershed Management Area.

[3] California Regional Water Quality Control Board, Los Angeles Region; Watershed Management Initiative Chapter; Ventura River Watershed Management Area; May, 2002.

Matilija Reservoir: The Matilija Dam was constructed in 1948 by the Ventura County Flood Control District to provide water supply reserves and reduce flood hazards. The structure is a concrete arch dam that was built across a narrow section of the Matilija Creek about 0.6 miles upstream from the confluence with the North Fork of Matilija Creek. The reservoir and dam had an initial capacity of 7,000 acre feet. As the result of siltation, especially after the 1969 flood, and a large notch (due to deteriorating concrete) that was cut in the dam's face in 1965, the reservoir now has a capacity of less than 1000 acre feet. During the summer and fall months, Casitas MWD conducts releases for downstream water rights, in accordance with a 1959 agreement, while maintaining a minimum pool behind the dam. The VCFCD owns and maintains Matilija Dam while Casitas MWD operates and maintains the dam outlet works. The reservoir is now used primarily to temporarily store flows and release waters at less than the 500 cfs capacity of the Robles Canal in order to maximize diversions to the Casitas Reservoir.

North Fork Matilija Creek: The North Fork Matilija Creek has an average gradient of about 460 feet per mile and drains an area of 15.5 square miles. Hot springs in the Santa Ynez Mountains have high levels of boron. This subwatershed is primarily managed by the US Forest Service.

Upper Ventura River: Matilija Creek and the North Fork Matilija Creek merge and form the main stem of the Ventura River, a gravel bottomed channel that varies in width from 700 to 2000 feet wide that extends 16.2 miles to the estuary. The upper reach of the river is bounded downstream by a diversion dam at Foster Park. This reach includes the Robles Diversion structure, the San Antonio tributary, Casitas Springs area and Foster Park.

The Casitas Springs area of the Ventura River (approximately 2.8 kilometers long) has perennial flows, even during drought years, due to a natural bedrock barrier that forces subsurface flow to the surface. The river channel occurs as a wide flood plain and during high flows is characterized by a typical pool riffle continuum found in low gradient streams.

Robles Diversion: The Robles diversion dam, approximately 2 miles downstream of Matilija Dam, was constructed in 1959 as part of the Ventura River Project to divert up to 500 cubic feet per second flows of winter runoff from the Ventura River to Lake Casitas. The watershed above the diversion is approximately 75 square miles. The diversion consists of a small rockfill dam, headgate and four miles of concrete channel. The initial operating criteria was supposed to be for a five-year pilot but the diversion is still operated under the original agreement. Under the agreement, the first 20 cfs of surface flow must be allowed to pass down the Ventura River and all flows above 20 cfs and up to 500 cfs may be diverted to the Robles Canal. The low flows help support a flow in the river from Casitas Springs down to the estuary. The initial operating criteria specified that the 20 cfs amount would be varied according to certain ground water and surface flow conditions. That is, the 20 cfs flow may be decreased if surface flow occurs at Santa Ana Boulevard or if rising groundwater above the confluence with San Antonio Creek is enough to provide

flows to supply all downstream users and allow water to flow to the ocean. Diversions to Lake Casitas through the Robles Diversion historically make up about 55% of the inflow to Lake Casitas.

San Antonio Creek: San Antonio Creek originates in Senior Canyon and drains 52 square miles of the southerly slope of the Topa Topa Mountains. About 40 square miles are steep mountainous terrain and 12 square miles cover valley area. This subwatershed represents the northeast portion of the Ventura River watershed. The average gradient is sixty feet per mile and the length of the main stem is 11.4 miles. The headwaters are in rugged mountain terrain and have stream gradients of 250 feet per mile. The river then flows through the alluvial plain of the Ojai Basin with a gradient of 100 feet per mile, five miles in a narrow canyon with an average gradient of 500 feet/mile before joining the Ventura River two miles above Foster Park. Major tributaries include Gridley, Thacher, Reeves and Lion Creeks. Lower San Antonio Creek does not have favorable steelhead trout habitat (lacks good pools and riffles and cover but the quality of upstream areas of the creek (total 14.4 km reach) is unknown.

Foster Park Dam: An underground weir extending across Coyote Creek and Ventura River beds approximately 1200 feet north of Foster Park Bridge was constructed in 1906 by the Ventura Power Company. The weir was designed to raise the water table in order to supply municipal pumps located upstream. The concrete weir is 973 feet long and maximum of 65 feet deep and stops short by 300 feet from extending the full breadth of both streams. A surface diversion is near the eastern side of the river bottom. Water from the surface water diversion and the subsurface collectors accumulates in a single receiving chamber that discharges to a 36-inch diameter concrete pipe that drains by gravity to the Kingston Reservoir at the City's water treatment plant. It was not completed all the way across due to construction problems. The City of San Buenaventura maintains 4 wells approximately 300 to 1500 feet upstream of the weir. In 1946, 300 feet of the weir was exposed to a height of 4 feet. Efforts to construct a fish ladder, in 1946, by the California Department of Fish and Game were never brought to fruition.

Coyote Creek: Coyote Creek drains an area of 41 square miles (30 sq. mi. are mountainous and the rest are rolling foothills and valley floor) and has an average gradient of 260 feet per mile. The length of the main stem of Coyote Creek is 16.6 miles although Lake Casitas now covers an area starting 2.5 miles above the confluence of Coyote Creek with the Ventura River. The lowest 2.5 mile reach of Coyote Creek has an average gradient of 35 feet per mile. Santa Ana Creek, a tributary to Coyote Creek, has an average gradient of 380 feet per mile. Coyote Creek below Casitas Dam is usually dry except for short periods after storms and spillage from the reservoir.

Lake Casitas: The Lake Casitas watershed directly drains 33 square miles of open space (non-agricultural) lands and indirectly, via the Robles Diversion drains an additional area of 75 square miles of the upper Ventura River watershed (from Matilija, North Fork Matilija, Upper North Fork Matilija, and Murietta Creeks via the Robles Diversion Dam and Robles-Casitas Canal) making at total drainage area of 108 square miles. Lake Casitas was constructed in 1959 by the U.S. Bureau of Reclamation to provide domestic,

agricultural and industrial water. The dam is a 285 foot high earth and crushed rockfill structure. The Bureau owns the lake, dam and surrounding shoreline land while the Casitas MWD owns the system. The lake covers 2,710 acres with a 244 acre island in the middle; the shoreline contour is 30 miles. The capacity is 254,000 acres feet and safe yield is 20,000 acre-feet.

Lower Ventura River: The lower Ventura River flows from the Foster Park dam to the top of the estuary. The river is a gravel bottomed channel generally wider than 700 feet. The lower river, below highway 150 bridge was channelized after the 1969 flood in earthen levees 15 to 30 feet high along the eastern side of the river. The river is directed to a straightened and deepened channel in the modified area. The gradient is 40 feet/mile at Foster Park and 40 feet/mile from Foster Park to the ocean. Base flows below the municipal diversion at Foster Park are reduced although a small subsurface flow usually passes around the eastern end of the City of San Buenaventura's submerged diversion dam, even during drought years, and re-surfaces several hundred meters downstream where it is augmented by the discharge from the Oak View Sanitary District's sewage plant. Flow at Foster Park does flow continuously during some years. From Foster Park to the estuary, the river is perennial with the same water sources as the upper reach combined with flows from the Oak View Plant. The area known as North Ventura Avenue area mostly contains oil fields, oil-related industries and the Ojai Valley Treatment Plant, San Buenaventura Water Treatment Plant, orchards, salvage yards, single family homes and two mobile home parks.

Weldon Canyon: Weldon Canyon is an area that is currently used for grazing with some agricultural and oil production. Weldon Canyon drains an area of about 2.2 square miles. The upper creek has intermittent flows. The lower section of the creek is perennial. Surface water is used for livestock watering during and after periods of rainfall. These surface waters have high sodium sulfate and total dissolved solids (greater than 5,000 mg/L) and is not suitable for drinking water. Shallow alluvial groundwater areas have total dissolved solids ranging from 5,000 to 28,700 mg/L and is not suitable for irrigation.

Canada Larga: Canada Larga drains an area of about 19 square miles. Alluvial deposits within the Canada Larga and tributaries is thin and contain only minor amounts of water. Land uses include open space, agricultural (dryland farming, avocado and walnut orchards, dryland farming), grazing, oil production, scattered residential uses, nurseries, and livestock boarding facilities. The section of the creek between Canada Larga Road and Highway 33 is degraded by human activity. There is much trash and the banks have been de-vegetated by erosion and trampling. Hammond Canyon is a 1,868 acre tributary to Canada Larga and has intermittent surface water flow. One spring is located in the middle of the canyon. Leon Canyon, Reynolds Canyon, and Canada Seco are tributaries to Canada Larga that are used for limited cattle grazing. Because of the lack of heavy grazing, these canyon contain extensive woodland and sage communities. Each has an active well or spring that are used for livestock watering.

Canada del Diablo: Canada del Diablo is a steeped walled canyon that drains from the western side of the lower Ventura River watershed. Many slopes in the upper

subwatershed are 1:1. The dominant land use is oil production and currently Shell Western Exploration and Production leases the area as an oil field and has installed numerous oil-related facilities. There are substantial oil reserves in the area that may be drilled in the future. The area lies on the flank of the east-west rending Ventura Anticline that is a geologic structure that has trapped petroleum reserves in Ventura County and extends out into the ocean. Additional land uses include cattle grazing and dry land farming.

Ventura River Estuary: The Ventura River terminates at the Ventura River Estuary that includes wetlands. The Estuary area is approximately 30 acres and incorporates portions of the City of San Buenaventura, Seaside Wilderness Park and Emma Wood States Park. The estuary includes a main lagoon that is separated from the ocean by a sand/cobble bar during the dry season. When full, the lagoon covers approximately 1.5 surface hectare and ranges in depth from 0.6 to 2.4 meters.

The lagoon sandbar gets breached by winter storm flows and then through the summer slowly rebuilds as sand is deposited by the long-shore drift. The process is slow and typically the bar does not fully rebuild until August or September. In some extremely wet years, such as 1986, the lagoon remains open to the ocean and thus tidal exchange all year. In some dry years the sand bar never gets breached in the winter and water flows over the sand bar.

The Ventura Estuary is flushed by tides when the sandbar is open and is dominated by slightly brackish to fresh water when the sandbar is closed. The amount and timing of freshwater inputs determines the depth and salinity patterns of the estuary area. In the summer, the estuary is dominated by freshwater that tends to form a floating lens of less saline water over the more saline water. If there is less freshwater inflows then the layers tend to not mix resulting in increased temperatures and reduces dissolved oxygen in the lower saline layer and impacting aquatic habitats.

Beneficial uses

Ventura River Estuary: Navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, warm freshwater habitat, estuarine habitat, marine habitat, wildlife habitat, preservation or rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction and/or early development, shellfish harvesting, and wetland habitat.

Ventura River: Municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply ground water recharge, freshwater replenishment, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, preservation or rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction and/or early development, shellfish harvesting, and wetland habitat.

Canada Larga: Municipal and domestic supply (potential use), industrial process supply (intermittent use), agricultural supply (intermittent), ground water recharge (intermittent), freshwater replenishment (intermittent), water contact recreation (intermittent), non-contact water recreation (intermittent), warm freshwater habitat (intermittent), cold freshwater habitat (intermittent), wildlife habitat, migration of aquatic organisms (intermittent), and spawning, reproduction and/or early development (intermittent).

Lake Casitas and tributaries: Municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, ground water recharge (potential use), freshwater replenishment (potential), hydropower generation (potential), water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, preservation or rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction and/or early development, shellfish harvesting, and wetland habitat.

San Antonio Creek (including Lion Creek and Reeves Creek): Municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, ground water recharge, freshwater replenishment, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and/or early development, and wetland habitat.

Mirror Lake: Municipal and domestic supply (potential use), ground water recharge, water contact recreation (potential), non-contact water recreation, warm freshwater habitat, wildlife habitat, and wetland habitat.

Ojai Wetland: Municipal and domestic supply (potential use), water contact recreation (potential), non-contact water recreation, warm freshwater habitat, wildlife habitat, and wetland habitat.

Matilija Creek (including Murietta Canyon Creek): Municipal and domestic supply (potential use), ground water recharge, water contact recreation, non-contact water recreation, cold freshwater habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and/or early development, and wetland habitat.

North Fork Matilija Creek: Municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, ground water recharge, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, preservation or rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction and/or early development, and wetland habitat.

Matilija Reservoir: Municipal and domestic supply, agricultural supply, ground water recharge, freshwater replenishment, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and/or early development, and wetland habitat.

Known Impairments

Ventura River Estuary: This is 303(d) listed for algae and eutrophic conditions, fecal and total coliforms, and trash, due to both point and nonpoint sources.

Ventura River: Reaches 1 and 2 (Estuary to Weldon Canyon) are 303(d) listed for algae due to point and nonpoint sources. Reach 3 (Weldon Canyon to confluence with Coyote Creek) and reach 4 (Coyote Creek to Camino Cielo Road) are listed for pumping and water diversions.

Canada Larga: This is 303(d) listed for fecal coliform and low dissolved oxygen, both due to nonpoint sources.

San Antonio Creek: This is 303(d) listed for nitrogen associated with nonpoint sources.

Matilija Creek: Reach 1 (junction with North Fork to reservoir) and reach 2 (above reservoir) are 303(d) listed for fish barriers associated with dam construction.

Matilija Reservoir: This is 303(d) listed for fish barriers associated with dam construction.

viii. Channel Islands

Background

Five of the Channel Islands are located within the Los Angeles region: Anacapa Island, San Nicolas Island, Santa Barbara Island, Santa Catalina Island and San Clemente Island. Anacapa and Santa Barbara Island are part of the Channel Islands National Park (along with 3 islands outside of the Los Angeles region). Catalina Island is the most developed of the Channel Islands. Avalon has a resident population of approximately 3,500, but the city hosts over 1 million visitors annually. Approximately 85% of Catalina Island is maintained in its natural state as part of a conservancy area. Both San Nicolas Island and San Clemente Island are owned by the U.S. Navy. San Nicolas Island houses many radar tracking installations and is used for other military operations. San Clemente Island is used for tactical training exercises.

Beneficial uses

Anacapa Island: Municipal and domestic supply (potential use), water contact recreation (potential use), warm freshwater habitat (potential use), wildlife habitat, and preservation of rare, threatened or endangered species.

San Nicolas Island: Municipal and domestic supply (potential use), water contact recreation (potential use), warm freshwater habitat (potential use), wildlife habitat, and preservation of rare, threatened or endangered species.

Santa Barbara Island: Municipal and domestic supply (potential use), water contact recreation, non-contact water recreation, warm freshwater habitat (potential use), wildlife habitat, and preservation of rare, threatened or endangered species.

Santa Catalina Island (including Middle Ranch system): Municipal and domestic supply, ground water replenishment, water contact recreation, non-contact water recreation, warm

freshwater habitat, wildlife habitat, and preservation of rare, threatened or endangered species.

San Clemente Island: Municipal and domestic supply, ground water replenishment, water contact recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat, and preservation of rare, threatened or endangered species.

Known Impairments

Avalon Beach on Santa Catalina Island is 303(d) listed for bacterial indicators; the area affected is between the Pier and BB Restaurant, between the storm drain and the Pier, and between BB Restaurant and the Tuna Club. None of the other Channel Islands is listed for any impairments.

B. Review of Available Information

i. Channel Islands Harbor/Mandalay Bay

During the early to mid-1980s, the State Mussel Watch Program found low to intermediate levels of metals and organics in mussels collected from Channel Islands Harbor, with the exception of one sample with very high DDT concentrations. Sediment sampling for metals conducted by Regional Board staff in the harbor in 1988 revealed slightly to moderately elevated concentrations. The harbor is 303(d) listed for lead and zinc in sediments. Sediment samples were collected from the harbor in 1993, 1994 and 1997 as part of the Bay Protection and Toxic Cleanup Program. Channel Islands Harbor was listed as a site of concern due to DDT and silver sediment concentrations and sediment toxicity. The benthic infaunal community sampled at a single station in the harbor in 1997 appeared to be relatively healthy.

The City of Oxnard conducted sediment characterizations of east and west Mandalay Bay to support an application for waste discharge requirements for dredging. Two composite sediment samples collected and analyzed in 2001 from the eastern bay showed low levels of trace metals and trace organics. A single composite sediment sample collected and analyzed in 2004 from the western bay showed low levels of trace metals and trace organics, with the exception of moderate levels of DDT.

ii. Port Hueneme

Port Hueneme is 303(d) listed for DDTs and PCBs in tissue. The State Mussel Watch Program has found elevated levels of copper, zinc, PAHs and PCBs in the past. Sediment samples were collected as part of the Bay Protection and Toxic Cleanup Program during 1993 and 1996 at two stations within each of the inner harbor channels. Very high concentrations of PCBs were found, but sediment toxicity was not found in 1996 and was minimal in 1993. No benthic infaunal samples were collected. The U.S Army Corps of Engineers conducted sediment

characterizations throughout most of the port in 1996, 2001 and 2002. Contaminants of concern that exceeded or approached sediment quality guidelines included nickel, cadmium, dieldrin, PCBs, PAHs, DDTs and tributyltin. Although the most contaminated sediments were localized in a small portion of the north inner channel, pockets of contamination were present at various locations throughout the port, including the main entrance channel.

iii. Ventura Marina/Ventura Keys

The City of Ventura routinely monitors six stations within the Ventura Keys area and the nearby Arundell Barranca for coliform; sampling is conducted weekly during the dry weather months of April through September and monthly during the wet weather months of October through March. The State Mussel Watch Program found moderately elevated levels of metals, DDT and chlordane in the marina from sampling conducted in the late 1980s. A single sample collected in 1993 as part of the Bay Protection and Toxic Cleanup Program showed minimal sediment toxicity. The Ventura Port District has conducted sediment characterizations of a portion of the inner harbor of Ventura Marina to support an application of Waste Discharge Requirements for dredging. Trace metal and trace organic concentrations were relatively low. Similarly, the city's sediment characterization to support dredging of the Ventura Keys channels demonstrated that trace metal and trace organic concentrations were low.

iv. McGrath Lake

McGrath Lake is 303(d) listed for chlordane, DDTs, dieldrin, and PCBs in sediment, as well as for sediment toxicity, probably due to historical use of pesticides and lubricants, and stormwater runoff and aerial deposition from agricultural fields. McGrath lake also is listed for fecal coliform, possibly associated with agriculture, landfills or natural sources. Sediment samples were collected from McGrath Lake during 1993, 1994 and 1996 as part of the Bay Protection and Toxic Cleanup Program. High levels of many trace metals and trace organics led to designation of McGrath Lake as a known toxic hot spot.

Following a crude oil spill into the lake in 1993 and a subsequent settlement, a Trustee Council (comprised of the California Department of Fish and Game, U.S. Fish and Wildlife Service and California Department of Parks and Recreation) was created to determine how to spend $1.315 million targeted for natural resource restoration. The Trustee Council requested assistance from the Regional Board to perform a detailed study to characterize the water quality and sediments within the lake, as well as sources of contaminant inputs to the lake. The characterization study was conducted on behalf of the Regional Board by California Department of Fish and Game personnel and included water quality measurements (temperature, dissolved oxygen, pH and nutrients) at several locations throughout the lake, surficial sediment samples (grain size, sediment chemistry, sediment toxicity, benthic infaunal community) at 10 stations in the lake, deep sediment cores at 7 stations (sediment chemistry), water column measurements (pesticides, metals, nutrients) at one station in an agricultural drain entering the lake, and sediment chemistry at 2 stations in agricultural drains.

This characterization study confirmed widespread sediment contamination and degraded benthos throughout the majority of McGrath Lake. The deep sediment cores provided an estimate of the depth of the contaminated layer and allowed estimation of the volume of contaminated sediments that would need to be removed from the lake if a sediment cleanup project were undertaken.

v. Ormond Beach/Ormond Beach Wetlands

The Ormond Beach Task Force was formed in 1993 and has been meeting on regularly to address issues and projects that may affect the beach and wetlands. The State Coastal Conservancy began a wetland restoration feasibility study to examine project design alternatives in September 2003, which should be completed by early 2005. This study will include an evaluation of existing conditions and possible expansion and improvement of wildlife habitat. The Southern California Wetlands Recovery Project identified Ormond Beach Wetlands as a high priority for restoration.

vi. Ventura Coastal Streams

Los Sauces Creek has been monitored for trace organics in 1991, and conventional pollutants in 1993 and 1994. Javon Canyon, Padre Juan Canyon, Deer Creek and La Jolla Canyon were monitored for conventional pollutants in 1993. Big Sycamore Canyon Creek was monitored for conventional pollutants in 1992 and 1993. Little Sycamore Canyon Creek was monitored for conventional pollutants in 1993 and 1994.

vii. Ventura River

The State Toxic Substances Monitoring Program is a program to assess the quality of waters throughout the state. Fish, other organisms, and sediment are collected and analyzed for metals and organic chemicals (primarily pesticides).

Sampling has occurred in:

- Ventura River Estuary downstream of the train bridge for metals and organics during 1993 and 1994
- Ventura River mainstem about 1.5 miles upstream of the Main Street bridge locations during 1982, 1983, 1984, 1989, 1990, and 1991 for metals and organics (except only organics in 1984)
- Ventura River mainstem downstream of the Ojai Valley Sanitation District discharge for metals and organics in 1993, 1998, 1999, 2000, and 2001
- Ventura River mainstem upstream of the Ojai plant discharge for metals and organics in 1998, 1999, 2000, and 2001
- Castaic Lake in the Willow, Chismahoo, and Ayers Creeks arms during 1988 and 1992 for metals and organics (except only organics in 1988) .

Tissue levels were low for most trace metals and trace organics, with the exception of occasional higher levels of certain pesticides (such as chlordane, dieldrin and DDTs).

Sediments were collected at one station in the Ventura River Estuary in 1993 as part of the Bay Protection and Toxic Cleanup Program; no sediment toxicity was found. Ojai Valley Sanitation District collects sediment samples upstream of the discharge point and in the estuary as part of the NPDES monitoring program; trace metal and trace organic concentrations have been low. The City of San Buenaventura conducted a biological characterization of the estuary in 2003-04, including assessment of the vegetation, fish communities and benthic infaunal communities. The City also collected sediment samples and analyzed them for a few trace metals and trace organics, as well as sediment toxicity.

Ventura County Environmental Health Department has conducted coastline bacteriological monitoring for total and fecal coliform and enterococcus since November 1998; this monitoring is performed weekly at a number of stations along the Ventura County coast. There are two stations in the immediate vicinity of the Ventura River, one upcoast and one downcoast. The California Department of Water Resources monitors minerals and conventional pollutants at few locations on the mainstem as well as on Matilija Creek below the dam. The Casitas Municipal Water District produces an Annual Water Quality Report for customers that includes information about Lake Casitas and Mira Monte wells including general, bacteriological, organic chemicals, radiological data. The Casitas MWD also monitors in the mainstem, Lake Casitas, and in tributaries leading into and out of the lake for total and fecal coliform as well as minerals. MTBE is also monitored for in the lake.

Ventura County Flood Control District: The current Stormwater NPDES permit adopted in 2000 includes a monitoring and reporting program which requires monitoring at mass emissions stations in the County and more specifically requires bioassessment monitoring in the Ventura River. The mass emissions site was established on the Ventura River mainstem at Foster Park west of Highway 33, on the south side of Casitas Vista Road, just west of Foster Park bridge. This site was sampled three times during spring 2001 during wet weather for conventional pollutants, metals, bacterial indicators, pesticides, semi-volatiles, and chronic toxicity. The bioassessment program shall include an analysis of the community structure of the instream macroinvertebrate assemblages in urban runoff-impacted stream segments at experimental sites. The County will begin monitoring fifteen such sites in Fall 2001 on a watershed-wide scale. Many sites will overlap with water quality monitoring sites of the Ventura River Stream team sponsored by the Santa Barbara ChannelKeeper. The City of San Buenaventura monitors four locations in the watershed on a weekly, monthly, or annual basis: Ventura River at Foster Park, Ventura River at Casitas Springs, Ventura River at Santa Ana Boulevard, and San Antonio Creek. Conventional pollutants, minerals, coliform, and metals are monitored at Foster Park while

conventional pollutants and minerals are monitored at the other sites. Ventura River Stream Team: The Santa Barbara ChannelKeeper, in conjunction with the Regional Board, Ventura County Flood Control District, the city of San Buenaventura, and the Ojai Valley Sanitation District, started a Ventura River Stream Team to conduct a watershed-wide water quality monitoring program which began in 2001. Fourteen sites are monitored for conventional pollutants and bacterial indicators. The group is pursuing additional funding for continue the effort as well as conduct additional work on habitat condition.

viii. Channel Islands

The Channel Islands were sampled as a specific stratum during Bight98. Benthic infaunal communities (46 stations), demersal fish (60 stations), fish biomarkers (60 stations), and fish tissue bioaccumulation (25 stations) studies were conducted. Catalina Island also was samples for benthic infauna (20 stations), demersal fish (30 stations) and bioaccumulation (15 stations).

C. Objectives of FY 04/05 Monitoring Program

In the development of a comprehensive monitoring program, the following steps should be followed where applicable:

1. Identify overall objectives and sub-objectives (defined in SWAMP Proposal and Report to Legislature)
2. Identify assessment questions (defined by Regional Board staff)
3. Develop a conceptual model
4. Select indicators (Regional Board staff per SWAMP documents)
5. Design spatial and temporal aspects of an ideal monitoring program (Regional Board staff in conjunction with assistance from US EPA)
6. Assess quality of data needed for results (being done at Statewide level)
7. Examine reporting options (being done at Statewide level)

In the design of objectives, the following guidelines should be remembered:

1. Objectives can be both wide-scale and/or site-specific
2. Objectives can be incorporated into study through a multi-tiered design that addresses:
   a. baseline ecosystem level condition
   b. long term trend analysis
   c. hypothesized environmental problems
   d. flexibility for the future

The indicators chosen should be regionally responsive, unambiguously interpretable, allow for simple quantification (i.e., synoptic sampling), should have index period stability, low year to year variation (especially if used for trend analysis), and represent the environmental impact of concern. Indicators should also have an available EPA approved method, historical use with

database of results, be retrospective, anticipatory (provide early warning of widespread change in ecosystem) and cost effective[4].

i. Program-Wide Monitoring Objectives

Beneficial Use: Water Contact Recreation – *Is it safe to swim?*

SWAMP Objective
At sites influenced by point sources (e.g., storm drains, publicly owned treatment works, etc.) or nonpoint sources of pathogenic contaminants, estimate the concentration of bacteria above screening values, health standards, or adopted water quality objectives.

Potential Assessment Questions

- What is the percent of streams in the watershed/region that support their designated beneficial use of water contact recreation? Do they support their designated beneficial uses all year or a majority of the time?

- Is the percent of streams in the watershed/region which support the beneficial use of water contact recreation increasing or decreasing over time? (For region-wide answer, will need to complete 10 year data cycle to answer… for watershed specific answer, can answer for first round of watersheds in year 6)

Potential Indicators: Pollutant exposure: total coliform bacteria, fecal coliform bacteria, enterococcus bacteria, enteric viruses. Another potential indicator not mentioned in SWAMP is *E. coli*.

Beneficial Use: Municipal and Domestic Water Supply - *Is it safe to drink the water?*

SWAMP Objective
At specific locations in lakes, rivers, and streams that are sources of drinking water and suspected to be contaminated, estimate the concentration of or verify previous estimates of the concentration of microbial and chemical contaminants above screening values, drinking water standards, or adopted water quality objectives used to protect drinking water quality.

Potential Assessment Questions

- What is the percent of streams that support their designated beneficial use of municipal and domestic water supply?

- Is the percent of streams in the watershed/region which support the beneficial use of municipal and domestic water supply increasing or decreasing over time?

Potential Indicators: Pollutant exposure: inorganic water chemistry, nutrients, organic water chemistry, total coliform bacteria, C*ryptosporidium*, G*iardia*

[4] United States Environmental Protection Agency, EMAP West Coastal Technology Transfer Workshop; Moss Landing Marine Laboratory, June 13-14, 2001.

Beneficial Uses: Commercial and Sport Fishing, Shellfish Harvesting – *Is it safe to eat fish and other aquatic resources?*

SWAMP Objective

- At specific sites influenced by sources of bacterial contaminants, estimate the concentration of bacterial contaminants above health standards or adopted water quality objectives to protect shellfish harvesting areas.

- At specific sites influenced by sources of chemical contaminants, estimate the concentration of chemical contaminants in edible aquatic life tissues above advisory levels and critical thresholds of potential human health risk.

- At frequently fished sites, estimate the concentration of or verify previous estimates of chemical contaminants in commonly consumed fish and shellfish target species above advisory levels and critical thresholds of potential human health risk (adapted from USEPA, 1995).

- Throughout water bodies (streams, rivers, lakes, nearshore waters, enclosed bays and estuaries), estimate the concentration of chemical contaminants in fish and aquatic resources from year to year using several critical threshold values of potential human impact (advisory or action levels).

Potential Assessment Questions

- What is the percent of streams that support their designated beneficial uses of commercial fishing, sport fishing, and shellfish harvesting?

- Is the percent of streams in the watershed/region which support the beneficial uses of commercial fishing, sport fishing, and shellfish harvesting increasing or decreasing over time?

Potential Indicators: Pollutant exposure: fish tissue chemistry, shellfish tissue chemistry, coliform bacteria in shellfish

Beneficial Uses: Cold Freshwater Habitat, Estuarine Habitat, Marine Habitat, Preservation of Biological Habitats (Preservation of Rare and Endangered Species), Rare, Threatened or Endangered Species, Warm Freshwater Habitat, Wildlife Habitat, Wetland Habitat – *Are aquatic populations, communities, and habitats protected?*

SWAMP Objective

- At sites influenced by point sources or nonpoint sources of pollutants, identify specific locations of degraded water or sediments in rivers, lakes, nearshore waters, enclosed bays, or estuaries using several critical threshold values of toxicity, water column or epibenthic community analysis, habitat condition, and chemical concentrations.

- Identify the areal extent of degraded sediment locations in rivers, lakes, nearshore waters, enclosed bays, and estuaries using several critical threshold values of toxicity, benthic community analysis, habitat condition, and chemical concentration.

Potential Assessment Questions

- What is the percent of streams that support their designated beneficial uses of cold water habitat, estuarine habitat, marine habitat, preservation of rare and endangered species, warm freshwater habitat, and wildlife habitat?

- Is the percent of streams in the watershed/region which support the beneficial uses of cold water habitat, estuarine habitat, marine habitat, preservation of rare and endangered species, warm freshwater habitat, and wildlife habitat increasing or decreasing over time?

- What is the distribution of benthic conditions in streams of the watershed?

- What is the distribution of the total number of benthic species per site at each station sampled?

- What is the distribution of exotic species in the benthos in this watershed?

- What proportion of streams have an altered/degraded benthic community structure?

- What is the distribution of sediment contaminants in this watershed?

Potential Indicators:

Biological responses: benthic infauna, fish assemblage, fish pathology, interstitial water toxicity, macroinvertebrate assemblage, periphyton, sediment toxicity, water toxicity

Pollutant exposure: acid volatile sulfides, debris, interstitial water metal chemistry, report gene system (RGS450), organic and inorganic sediment chemistry, shellfish or fish tissue chemistry, nutrients, inorganic and organic water chemistry

Habitat: dissolved oxygen, sediment grain size, sediment organic carbon, water flow, water temperature, channel morphology, wetland vegetation, riparian vegetation

Beneficial Uses: Spawning, Reproduction and/or Early Development – *Are aquatic populations, communities, and habitats protected?*

SWAMP Objective

At sites influenced by point sources or nonpoint sources of pollutants, identify specific locations of or verify previous measurements identifying specific locations of degraded water or sediments in rivers, lakes, nearshore waters, enclosed bays, or estuaries using several critical threshold values of early life-stage toxicity, chemical concentrations, and physical characteristics.

Potential Assessment Questions

- What is the percent of streams that support their designated beneficial use of spawning, reproduction, and/or early development?

- Is the percent of streams in the watershed/region which support the beneficial use of spawning, reproduction, and/or early development increasing or decreasing over time?

- What is the distribution of benthic conditions in streams of the watershed?

- What is the distribution of the total number of benthic species per site at each station sampled?

- What is the distribution of exotic species in the benthos in this watershed?

- What proportion of streams have an altered/degraded benthic community structure?

- What is the distribution of sediment contaminants in this watershed?

- What is the distribution of toxicity in this watershed?

Potential Indicators:
Biological responses: benthic infauna, fish assemblage, fish pathology, interstitial water toxicity, macroinvertebrate assemblage, periphyton, sediment toxicity, water toxicity
Pollutant exposure: acid volatile sulfides, debris, interstitial water metal chemistry, report gene system (RGS450), organic and inorganic sediment chemistry, shellfish or fish tissue chemistry, nutrients, inorganic and organic water chemistry
Habitat: dissolved oxygen, sediment grain size, sediment organic carbon, water flow, water temperature, channel morphology, wetland vegetation, riparian vegetation

Beneficial Uses: Migration of Aquatic Organisms; Rare, Threatened or Endangered Species; Wildlife Habitat – *Is water flow sufficient to protect fisheries?*

SWAMP Objective
At specific sties influenced by pollution, estimate the presence of conditions or verify previous estimates of the presence of conditions necessary for the migration and survival of aquatic organisms, such as anadromous fish, using measures of habitat condition including water flow, watercourse geomorphology, sedimentation, temperature, and biological communities.

Potential Assessment Questions
- What is the percent of streams that support their designated beneficial uses of migration of aquatic organisms, rare, threatened or endangered species, and wildlife habitat?

- Is the percent of streams in the watershed/region which support the beneficial uses of migration of aquatic organisms, rare, threatened or endangered species, and wildlife habitat increasing or decreasing over time?

- What is the distribution of benthic conditions in streams of the watershed?

- What is the distribution of the total number of benthic species per site at each station sampled?

- What is the distribution of exotic species in the benthos in this watershed?

- What proportion of streams have an altered/degraded benthic community structure?

- What is the distribution of sediment contaminants in this watershed?

- What is the distribution of toxicity in this watershed?

Potential Indicators:
Habitat: water flow, suspended solids, channel morphology, water temperature
Another potential indicator not listed in SWAMP is dissolved oxygen levels.
Biological response: fish assemblage, macroinvertebrate assemblage, periphyton, wetland habitat, riparian habitat, water toxicity

Beneficial Use: Agricultural Supply – *Is water safe for agricultural use?*

SWAMP Objective
At specific locations in lakes, rivers, and streams that are used for agricultural purposes, estimate the concentration of or verify previous estimates of the concentrations of chemical pollutants above screening values or adopted water quality objectives used to protect agricultural uses.

Potential Assessment Questions
- What is the percent of streams that support their designated beneficial use of agricultural supply?

- Is the percent of streams in the watershed/region which support the beneficial use of agricultural supply increasing or decreasing over time?

Potential Indicators: None listed in the SWAMP documents. Alternatives include TDS, chloride, and heavy metals.

Beneficial Use: Industrial Source Supply, Industrial Process Supply – *Is water safe for industrial use?*

SWAMP Objective
At specific locations in coastal waters, enclosed bays, estuaries, lakes, rivers and streams that are used for industrial purposes, estimate the concentration of or verify previous estimates of the concentration of chemical pollutants above screening values or adopted water quality objectives used to protect industrial use.

Potential Assessment Questions
- What is the percent of streams that support their designated beneficial uses of industrial source and process supply?

- Is the percent of streams in the watershed/region which support the beneficial uses of industrial source and process supply increasing or decreasing over time?

Potential Indicators: None listed in the SWAMP documents. Alternatives include odor, scum, bacteria, trash, and algae.

Beneficial Use: Non-Contact Water Recreation – *Are aesthetic conditions of the water protected?*

SWAMP Objective
At specific locations in coastal waters, enclosed bays, estuaries, lakes, rivers and streams, estimate the aesthetic condition or verify previous estimates of the aesthetic condition above screening values or adopted water quality objectives to protect non-contact water recreation.

Potential Assessment Questions
- What is the percent of streams that support their designated beneficial use of non-contact water recreation?

- Is the percent of streams in the watershed/region which support the beneficial use of non-contact water recreation increasing or decreasing over time?

Potential Indicators: None listed in the SWAMP documents. Alternatives include odor, scum, trash, and algae.

ii. Channel Islands Harbor/Mandalay Bay Monitoring Objectives

A directed study design has been selected for Channel Islands Harbor/Mandalay Bay since the area is relatively small and would not benefit from a randomized sampling design. Questions to be answered include:

- Does this site support its designated beneficial use of commercial and sport fishing?

- Does this site support its designated beneficial uses of marine and wildlife habitat?

- What is the condition of the benthic infaunal community at the site?

- What is the pattern of sediment and water column toxicity at the site?

iii. Port Hueneme Monitoring Objectives

A directed study design has been selected for Port Hueneme because the area is relatively small and would not benefit from a randomized sampling design. The types of questions that we will be able to answer are as follows:

- Does the site support its designated beneficial use of commercial and sport fishing?

- Does this site support its designated beneficial uses of marine and wildlife habitat?

- What is the condition of the benthic infaunal community at the site?
- What is the pattern of sediment and water column toxicity at the site?

iv. Ventura Marina/Ventura Keys Monitoring Objectives

A directed study design has been selected for the Ventura Marina/Ventura Keys since the area is relatively small and would not benefit from a randomized sampling design. Questions to be answered include:

- Does this site support its designated beneficial use of commercial and sport fishing?
- Does this site support its designated beneficial uses of marine and wildlife habitat?
- Does this site support its designated beneficial use of shellfish harvesting?
- What is the condition of the benthic infaunal community at the site?
- What is the pattern of sediment and water column toxicity at the site?

v. McGrath Lake Monitoring Objectives

A directed study design has been selected for McGrath Lake since the area is relatively small and would not benefit from a randomized sampling design. Questions to be answered include:

- Does this site support its designated beneficial use of commercial and sport fishing?
- Does this site support its designated beneficial use of estuarine habitat?
- Does this site support its designated beneficial use of preservation of rare, threatened or endangered species?
- What is the condition of the benthic infaunal community at the site?
- What is the pattern of sediment and water column toxicity at the site?

vi. Ormond Beach/Ormond Beach Wetlands Monitoring Objectives

A directed study design has been selected for Ormond Beach/Ormond Beach Wetlands since the area is relatively small and would not benefit from a randomized sampling design. Questions to be answered include:

- Does this site support its designated beneficial use of commercial and sport fishing?
- Does this site support its designated beneficial uses of marine, wildlife, estuarine and wetland habitat?
- Does this site support its designated beneficial use of shellfish harvesting?
- Does this site support its designated beneficial use of spwaning, reproduction and/or early development?
- Does this site support its designated beneficial use of preservation of rare, threatened or endangered species?

vii. Ventura Coastal Streams Monitoring Objectives

A directed study design has been selected for the Ventura Coastal Streams since each of these streams is relatively small and would not benefit from a randomized sampling design. Questions to be answered include:

- Does each stream support its designated beneficial use of municipal and domestic water supply?
- Does each stream support its designated beneficial uses of industrial service and process supply?
- Does each stream support its designated beneficial use of agricultural supply?
- Does each stream support its designated beneficial use of ground water recharge?
- Does each stream support its designated beneficial uses of cold freshwater, warm freshwater, wildlife and wetland habitat?
- Does each stream support its beneficial uses of spawning, reproduction and/or early development and migration of aquatic organisms?
- What is the condition of the benthic communities in each stream?
- What is the pattern of water column toxicity in each stream?

viii. Ventura River/Ventura River Estuary Monitoring Objectives

A directed study design has been selected for the Ventura River Estuary since this area is relatively small and would not benefit from a randomized sampling design. A randomized design would be applicable for the Ventura River, but this area has

been well studied, so a randomized sampling program does not appear to be warranted (and budget constraints would preclude this option). Questions to be answered include:

- Does this site support its designated beneficial use of municipal and domestic water supply?
- Does this site support its designated beneficial uses of industrial service and process supply?
- Does this site support its designated beneficial use of agricultural supply?
- Does this site support its designated beneficial use of ground water recharge?
- Does each stream support its designated beneficial uses of cold freshwater, warm freshwater, wildlife and wetland habitat?
- Does this site support its beneficial uses of spawning, reproduction and/or early development and migration of aquatic organisms?
- Does this site support its beneficial use of sport and commercial fishing?
- What is the condition of the benthic infaunal communities at this site?
- What is the pattern of sediment and water column toxicity at this site?

ix. Channel Islands Monitoring Objectives

A randomized sampling design has been chosen to monitor conditions around the Channel Islands. Questions to be answered include:

- Do these sites support their designated beneficial use of wildlife habiat?
- Do these sites support their designated beneficial use of preservation of rare, threatened or endangered species?
- What is the condition of the demersal fish and macroninvertebrate community at the sites?
- What is the condition of the benthic infaunal community at the sites?
- Do contaminant levels in demersal fish pose an ecological risk at these sites?

D. Monitoring Program Design

i. Overview of General Approach

Overall Approach

The sampling and analysis program will be used to assess the ambient conditions of the watersheds in the Miscellaneous Ventura Coastal Watershed Management Area, Ventura River Watershed Management Area and Channel Islands Watersheds Management Area. The sampling and analyses described in this Workplan will further delineate the nature, extent, and sources of toxic pollutants that have been detected or are suspected to be problematic for this region and its individual watersheds. Where applicable, a triad approach (benthic community analysis, water chemistry, and toxicity testing) has been used. Ultimately, the information from these analyses will be used in the water quality assessment. The bioaccumulation tests are being conducted in order to address possible human health concerns (contaminants in edible fish tissue) or ecological concerns (benthic community impacts) which could result if the contaminants at a site were bioavailable for uptake by organisms. There is also a large focus on bioassessment that historically has been overlooked. The information gathered will be used in trend analysis as well as the potential identification of reference sites that could then be used in the development of an index of biological integrity.

The proposed sampling plan for chemistry, toxicity, bioaccumulation, and bioassessment is indicated on the attached Task Order (Excel spread sheet).

ii. Specific Sampling Design / Sample Collection

a) Channel Islands Harbor/Mandalay Bay

We are proposing directed sampling in this area, since the waterbody is too small to benefit from a randomized design. We have identified five sampling stations, three located in Channel Islands Harbor (main channel + the two branching channels) and two in Mandalay Bay (east and west areas). These five stations will be sampled and analyzed for sediment chemistry (full scan), sediment toxicity, water column toxicity (bivalve development), benthic infauna and conventional water chemistry. Bagged bivalves will be placed at one station (probably in the main channel of Channel Islands Harbor) and tissue will be analyzed for metals and organics). Metals and organics also will be analyzed for a water sample from this single station.

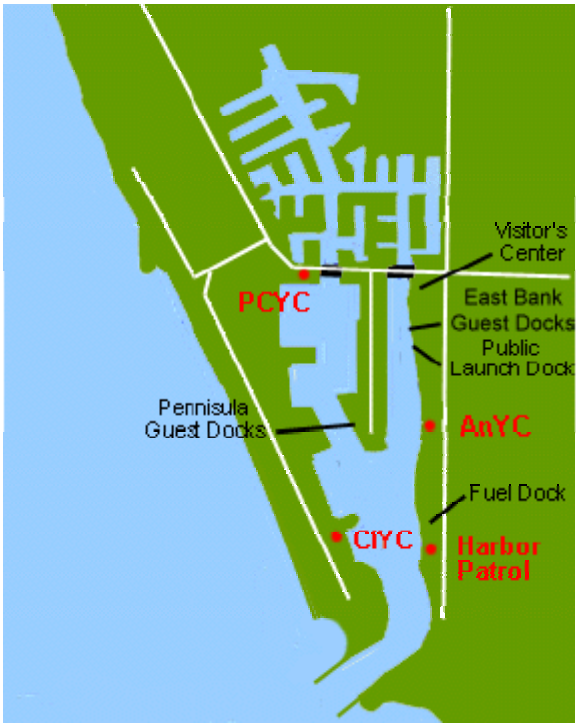

Figure 5. Channel Islands Harbor/Mandalay Bay

b) Port Hueneme

We are proposing directed sampling in this area, since the waterbody is too small to benefit from a randomized design. We have identified four sampling stations within the port (main channel, main inner harbor + the two branching channels). These three stations will be sampled and analyzed for sediment chemistry (full scan), sediment toxicity, water column toxicity (bivalve development), benthic infauna and conventional water chemistry. Bagged bivalves will be placed at two stations (probably in the main channel and main inner harbor) and tissue will be analyzed for metals and organics). Metals and organics also will be analyzed for a water sample from this single station.

c) Ventura Marina/Ventura Keys

We are proposing directed sampling in this area, since the waterbody is too small to benefit from a randomized design. We have identified four sampling stations, two located in Ventura Marina (main slip area, outer marina) and two in Ventura Keys (transition point from marina to keys, inner channel). These four stations will be sampled and analyzed for sediment chemistry (full scan), sediment toxicity, water column toxicity (bivalve development), benthic infauna and conventional water chemistry. Bagged bivalves will be placed at two stations (probably in main slip area of Ventura Marina and at the transition point between the marina and the keys) and tissue will be analyzed for metals and organics). Metals and organics also will be analyzed for a water sample from this single station.

Figure 7. Ventura Marina/Ventura Keys.

d) McGrath Lake

McGrath Lake has been extensively characterized and the McGrath Lake Trustee Council recently issued a Draft Restoration Plan and Environmental Assessment for the lake. Consequently, we are not proposing any additional sampling in this area.

e) Ormond Beach/Ormond Beach Wetlands

This area also has been extensively characterized. The California Coastal Conservancy began a wetland restoration feasibility study in 2003 to examine project design alternatives to restore at least 750 acres of wetlands. The plan is expected to be completed in early 2005. Consequently, we are not proposing any additional sampling in this area.

f) Ventura County Coastal Streams

We are planning directed sampling in several coastal streams: Los Sauces Creek, Madranio Canyon, Javon Canyon, Padre Juan Canyon, La Jolla Canyon, Big Sycamore Creek, Deer Canyon, Serrano Canyon and Little Sycamore Creek. Two stations would be located on each creek (except Serrano Canyon, a tributary to Big Sycamore Creek, which would only have one station), for a total of 17 stations. One station would be located in the lower portion of the stream's watershed and one station would be in the upper portion. Sampling and analysis would include bioassessment, water column chemistry (metals plus chlorpyrifos and diazinon), conventional water chemistry, and water column toxicity (two species, Ceriodaphnia and fathead minnow).

g) Ventura River/Ventura River Estuary

Extensive sampling has been conducted throughout the Ventura River watershed. Therefore, we are proposing limited directed sampling at two stations, one in the Ventura River Estuary and one station at a point in the Ventura River just before it enters the estuary. At the estuary station, we propose to sample and analyze for sediment chemistry (full scan), sediment toxicity, benthic infauna, water column chemistry (metals and organics), water column toxicity (larval development test), and conventional water chemistry. At the river station, we propose to include bioassessment, water column chemistry (metals and organics), water column toxicity (two species, Ceriodaphnia and fathead minnow), and conventional water chemistry.

h) Channel Islands

We plan to rely upon data collected during the Bight98 and Bight03 comprehensive regional monitoring programs to evaluate conditions in the coastal waters around the Channel Islands. Consequently, we do not plan to collect any additional samples in these areas.

i) Contingencies

We have unallocated funds of approximately $17,000 that we propose to use to conduct TIEs if toxicity is encountered. If not, these funds will be used for supplemental sampling or report writing.

E. Additional Activities and Deliverables for Fiscal Year 03/04

i. Sample Collection/Laboratory Analysis

Collection and analytical services that will be performed on each sample are shown on our Task Order. The California Department of Fish and Game will provide these services under contract with SWAMP.

ii. Data Quality Evaluation and Data Reporting

Results from sampling shall be analyzed and reported in tabular and graphical format. Analyses shall be compared to criteria supplied to CDFG by the Los Angeles Regional Board. These criteria will consist of water quality criteria and water quality objectives. Comparative analyses shall be performed in such a way to present the current state of health of the Los Angeles and San Gabriel Rivers and Los Cerritos Channel/Wetlands and Alamitos Bay.

Toxicity data will include test mean, standard deviation, and a determination of whether or not a sample is toxic at a statistically significant level of difference from the laboratory control samples.

The California Stream Bioassessment Protocol developed by CDFG will be followed until a SWAMP-specific bioassessment protocol is established.

The statewide standardized SWAMP QAPP will be followed.

iii. Deliverable Products

Field Report: A field report will be prepared. This field report will be provided to the Regional Board, with an additional copy provided to the State Board (one copy to each). The field report will include a map with sufficient detail of stations sampled, including latitude and longitude coordinates and GPS coordinates. Digital photographs of each sampling site shall also be included in the report and provided electronically to the Regional Board.

Final Data Report: All data shall be reported in electronic file (Excel spreadsheet or Access database) on three CDs, as well as on hard copy (three one-sided originals for copying, and three bound copies). One of each type-- electronic file, one-sided hardcopy original, and bound hardcopy-- shall go to the

State Board and the Regional Board and DFG. QA/QC evaluation reports and verification that data met QA criteria set forth in QA Project Plan must be provided with hardcopy data report.

The data report will include the following items, where applicable, but shall not necessarily be limited to the following items:

All station data including CDFG station name, station number, IDORG number, leg number, sample collection date, sample station longitude and latitude, sample GPS coordinates, sample station water depth, sample location characteristics, toxicity test endpoint mean and standard deviation, and all detection limits. In addition to the above data, the following will also be reported for all stations indicated on the attached "Services to be performed at each station/cost" spreadsheet for bioassessment: raw data and computed biological indices. Additionally, data from the bioaccumulation tests will be reported as tissue chemistry data for the specific chemical constituents shown on the attached "Services to be performed at each station/cost" spreadsheet. A map (and GIS shape file) should be included showing the locations of each sampling station and an indication of the overall integrity of that site as excellent, good, marginal, or poor. Another map (and GIS shape file) should further indicate the integrity of each site for biological, chemical, and toxicity data results expressed as a triad for each site.

QA/QC evaluation ranking by each analytical laboratory will be provided in the database. In addition, appendices will include replicate data for toxicity tests, a database description and file structure description. A QA/QC report will also be included in the final data report, containing an evaluation of how the data complied with actual QA/QC parameters.

Interpretive Report: In the past, the Regional Board has chosen to contract with CDFG to prepare an interpretive report evaluating the monitoring data and assessing conditions within the watersheds sampled. The Regional Board expects to continue this practice for this workplan. The details and cost of this interpretive report will be negotiated with CDFG and finalized at a later date. We anticipated that the cost of this report will be approximately $10,000.

iv. Desired Milestone Schedule

The index period is when sampling occurs; in ecoregions where streams are perennial, sampling can occur in the spring or fall, each choice having pros and cons. At this time, sample collection for FY 2004-2005 is scheduled to be conducted during the spring of 2005.

v. Desired "Sample Throughput Schedule"

Need to obtain from CDFG.

vi. Budget

The maximum cost of all SWAMP services specified for FY 2004-2005, as shown in the attached Task Order, shall not exceed **$253,814**. This amount of $253,814 equals the Region 4 SWAMP allocation for FY 2004-2005.

3. Monitoring Coordination

A. Coordination of Intra-agency Monitoring

Toxic Substances Monitoring and State Mussel Watch Programs

- The Toxic Substances Monitoring and State Mussel Watch Programs (TSMP and SMWP) are statewide programs that have been incorporated into SWAMP.

TMDLs

Both LA and San Gabriel Rivers continue to be extensively monitored and modeled under both dry and weather conditions for impairment-related pollutants by SCCWRP under contract with the Regional Board; this work is in collaboration with 18 entities including the City of Los Angeles, the Los Angeles County Department of Public Works, the Los Angeles and San Gabriel Rivers Watershed Council, and the Friends of the San Gabriel River.

The current SWAMP sampling plan acknowledges extensive sampling being done for TMDL work and any directed sampling has been adjusted accordingly.

Table 1. Intra-agency Coordination

Agency Group	Monitoring Program Description	Available Data Format	Using SWAMP QAPP	Data SWAMP compatible	Data used for 303(d) & 305(b)
SMW	State Mussel Watch Program has collected bioaccumulation data in the past. This program has been incorporated into SWAMP and any future sampling in our region will be conducted as part of the SWAMP annual workplan, with the exception of three long term stations which are sampled annually through an endowment managed by the California Department of Fish and Game.	R4 has data in electronic format (SWAMP compatible)	X	X	X
TSM	Toxic Substances Monitoring Program has collected bioaccumulation data in the past. This program has been incorporated into SWAMP.	R4 has data in electronic format (SWAMP compatible).	X	X	X
TMDL	TMDL development for impaired waters is being performed for various waterbodies in the Los Angeles region according to a long-term schedule developed by consent decree. Hydrodynamic models and monitoring are conducted in certain watersheds as necessary and where funding is available.	Data currently being collected and planned over the next several years. Data should be SWAMP compatible and should be available in electronic format.		X	X
Ag Waiver Replacement	Agriculture monitoring is required in association with waivers	Program is being initiated. Data should be SWAMP compatible.	X	X	X
Grant Projects	Contractors are required to consult with Region 4 staff to discuss development of the QAPP, Monitoring Plan, and data management.	Data will be submitted in electronic format using SWAMP templates.		X	X

B. Coordination of Inter-agency Monitoring

The Regional Board has been working closely with the following agencies or interested parties to assess water quality conditions in the watersheds to be monitored as part of the SWAMP FY 2004-05 program.

Channel Islands Harbor/Mandalay Bay

The City of Oxnard has conducted sediment characterizations to support applications for waste discharge requirements for dredging projects in Mandalay Bay.

Port Hueneme

The U.S. Army Corps of Engineers has conducted a feasibility study to support dredging of Port Hueneme. The U.S. Navy Construction Battalion also has been involved in this project.

Ventura Marina/Ventura Keys

The City of Ventura conducts routine monitoring of bacteriological conditions in the Ventura Marina and Ventura Keys area. The Ventura Port District has conducted sediment characterizations to support applications for waste discharge requirements for dredging in the Ventura Marina and around the entrance channel and within the Ventura Keys area.

McGrath Lake

The McGrath Lake Trustee Council, headed jointly by the California Department of Fish and Game, U.S. Fish and Wildlife Service, and California Department of Parks and Recreation, has developed a draft restoration plan to determine how to spend $1.315 million from a consent decree settlement following a 1993 oil spill. The restoration plan was developed in consultation with local stakeholders, including land owners in the vicinity of the lake.

Ormond Beach/Ormond Beach Wetlands

The California Coastal Conservancy is developing a wetland restoration plan for the Ormond Beach Wetlands. The Ormond Beach Task Force is a local stakeholder group that has been actively involved in this process, as well as the Southern California Wetlands Recovery Project. Ventura County Department of Environmental Health conducts bacteriological sampling at many coastal beaches, including Ormond Beach.

Ventura County Coastal Streams

Little monitoring is conducted in the several coastal streams in Ventura County. A monitoring program to assess conditions in the Sanjon Barranca has been designed and will be implemented soon by the Sanjon Barranca Stakeholders and Rose Foundation.

Ventura River/Ventura Estuary

The Ojai Valley Sanitation District conducts routine monitoring of the Ventura River as required by the NPDES permit for its sewage treatment plant. The City of San Buenaventura recently has conducted special studies in the Ventura Estuary to support a claim of enhancement due to the discharge of wastewater from its sewage treatment plant into the estuary.

California Department of Water Resources monitors conventional pollutants at a few locations on the Ventura River and Matilija Creek. Casitas Municipal Water District conducts water quality monitoring around Lake Casitas. The Ventura County Flood Control District monitors at several locations along the Ventura River under the terms of its stormwater permit. The Santa Barbara ChannelKeeper started a volunteer Ventura

River Stream Team monitoring program in 2001 to assess water quality conditions in the river.

Channel Islands

The coastal waters around the Channel Islands have been monitored as part of the Bight98 and Bight03 comprehensive regional monitoring programs. These programs were the result of a collaboration between numerous federal, state and local agencies, and the development and management of the monitoring program was accomplished via oversight from the Southern California Coastal Waters Research Project.

Inter-agency and Organizational Coordination

Federal	**Monitoring Activities**	**Coordination Status**
U.S. Army Corps of Engineers/U.S. Navy Construction Battalion	Feasibility study and sediment characterization for dredging of Port Hueneme.	Corps requires water quality certification from Regional Board for proposed dredging.
U.S. Army Corps of Engineers	Feasibility study for removal of Matilija Dam.	Regional Board staff participate in Matilija Dam Task Force.
U.S. Fish and Wildlife Service	McGrath Lake Trustee Council developed draft restoration plan.	Regional Board staff participated in characterization studies and plan development.
State		
California Department of Fish and Game/California Department of Parks and Recreation	McGrath Lake Trustee Council developed draft restoration plan.	See above.
California Coastal Conservancy	Developing restoration plan for Ormond Beach Wetlands.	Regional Board staff participated in plan development.
California Department of Water Resources	Periodic monitoring of conventional pollutants at a few stations on the Ventura River and Matilija Creek.	Some data obtained.
Local		
City of Oxnard	Sediment characterization for dredging of Mandalay Bay.	Data acquired via permit application.
Ventura County Environmental Health Department	Network of bacteriological water quality monitoring sites at beaches in Ventura County.	Data available for past few years.
Ventura Port District	Sediment characterizations for dredging of Ventura Marina and Ventura Keys.	Data acquired via permit applications.
Ojai Valley Sanitation District	NPDES discharge to Ventura River. Discharger conducts routine monitoring at six stations.	Annual data acquired.
City of San Buenaventura	NPDES discharge to Ventura River Estuary. Discharger conducts routine monitoring at stations in the estuary and along the beach. Discharger also recently conducted special studies to document enhancement of the estuary due to the waste discharge.	Annual data and special studies acquired.
Casitas Municipal Water District	Surface water quality monitoring for conventional pollutants in and near Lake Casitas.	Some data obtained.

Ventura County Flood Control District	Extensive monitoring at several stations in the Ventura River as required by stormwater permit.	Data acquired.
Miscellaneous		
Ormond Beach Task Force	Studies established need for wetlands restoration project.	Regional Board staff participated on task force.
Southern California Wetlands Recovery Project	Studies established feasibility of wetlands restoration in Ormond Beach area.	Regional Board staff participated in project.
Sanjon Barranca Stakeholders and Rose Foundation	Developed monitoring program to assess sediment and water quality conditions in Sanjon Barranca and Sanjon Lagoon.	Data not yet acquired.
Southern California Coastal Water Research Project	Managed development and implementation of sampling for Bight98 and Bight03 comprehensive regional monitoring programs for coastal waters of southern California.	Regional Board staff served on Steering Committee to plan program. Data acquired for Bight98. Data should be available in 2005 for Bight03.
Volunteer		
Santa Barbara ChannelKeeper	Coordination of volunteer monitoring activities conducted by the Ventura River Stream Team.	Data not yet acquired.