

## **Los Angeles River Watershed**

### Watershed Overview

The Los Angeles (LA) River watershed is one of the largest in the Region at 824 square miles and with a river length of 55 miles. It is also one of the most diverse in terms of land use patterns. Forest or open space land including the area near the headwaters that originate in the Santa Monica, Santa Susana, and San Gabriel Mountains covers approximately 324 square miles of the watershed. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by rail-yards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach.

Major tributaries to the river in the San Fernando Valley are the Pacoima Wash, Tujunga Wash (both drain portions of the Angeles National Forest in the San Gabriel Mountains), Burbank Western Channel and Verdugo Wash (both drain the Verdugo Mountains). Due to major flood events at the beginning of the century, by the 1950's most of the river was lined with concrete. In the San Fernando Valley, there is a section of the river with a soft bottom at the Sepulveda Flood Control Basin. The Basin is a 2,150-acre open space upstream of the Sepulveda Dam designed to collect floodwaters during major storms. Because the area is periodically inundated, it remains in a semi-natural condition and supports a variety of low-intensity uses as well as supplying habitat. At the eastern end of the San Fernando Valley, the river bends around the Hollywood Hills and flows through Griffith and Elysian Parks, in an area known as the Glendale Narrows. Since the water table was too high to allow laying of concrete, the river in this area has a rocky, unlined bottom with concrete-lined or rip-rap sides. This stretch of the river is fed by natural springs and supports stands of willows, sycamores, and cottonwoods. The many trails and paths along the river in this area are heavily used by the public for hiking, horseback riding, and bird watching.

South of the Glendale Narrows, the river is contained in a concrete-lined channel down to Willow Street in Long Beach. The main tributaries to the river in this stretch are the Arroyo Seco (which drains areas of Pasadena and portions of the Angeles National Forest in the San Gabriel Mountains), the Rio Hondo, and Compton Creek. Compton Creek supports a wetland habitat just before its confluence with the Los Angeles River. The river is hydraulically connected to the San Gabriel River Watershed by the Rio Hondo through the Whittier Narrows Reservoir. Flows from the San Gabriel River and Rio Hondo merge at this reservoir during larger flood events, thus flows from the San Gabriel River Watershed may impact the LA River. Most of the water in the Rio Hondo is used for groundwater recharge during dry weather seasons. The San Gabriel River drains approximately 689 square miles, which includes the eastern San Gabriel Mountains and portions of the Chino, San Jose, and Puente Hills.

The LA River tidal prism/estuary begins in Long Beach at Willow Street and runs approximately three miles before joining with Queensway Bay located between the Port of Long Beach and the city of Long Beach. The channel has a soft bottom in this reach with concrete-lined sides. Queensway Bay is heavily water recreation-oriented; however, major pollutant inputs are likely more related to flows from the LA River which carries the largest storm flow of any river in southern California.

Also part of the watershed are a number of lakes including Peck Road Park, Belvedere Park, Hollenbeck Park, Lincoln Park, and Echo Park Lakes as well as Lake Calabasas. These lakes are heavily used for recreational purposes.

Four basins in the San Fernando Valley area contain substantial deep groundwater reserves and are recharged mainly through runoff and infiltration although the increase in impermeable surfaces has decreased infiltration. Groundwater basins in the San Gabriel Valley are not separated into distinct aquifers other than near the Whittier Narrows. Active recharge occurs in some of these areas through facilities

operated by Los Angeles County. Spreading grounds recharge two basins in the coastal plain of Los Angeles west of the downtown area.

#### Permitted Discharges

- 147 NPDES discharges including: seven major NPDES dischargers (four POTWs); 30 minor permits; 110 dischargers covered by general permits
- Minor permits cover miscellaneous wastes such as ground water dewatering, recreational lake overflow, swimming pool wastes, and ground water seepage. Other permits are for discharge of treated contaminated ground water, non-contact cooling water, and storm water
- Two municipal storm water permits
- 1,307 dischargers covered under an industrial storm water permit
- 204 dischargers covered under a construction storm water permit

#### Identified water quality impairments and tentative TMDLs completion dates:

##### *River and/or tributaries reaches*

- Trash (completed)
- Nitrogen and related effects (2003)
- Coliform (2003)
- Metals (2004)
- Historic pesticides (2006)
- Oil (2011)
- Volatile organics (2011)
- Chlorpyrifos (2011)

##### *Lakes*

- Trash (2011)
- Nitrogen and related effects (2011)
- PCBs and historic pesticides (2011)
- Metals (2011)

#### Major water quality-related issues:

- Protection and enhancement of fish and wildlife habitat; removal of exotic vegetation
- Enhancement of recreational areas
- POTWs: attaining balance between water reclamation and minimum flows to support habitat
- Management of storm water quality
- Assessment and management of nonpoint sources of pollution (horse stables, golf courses, septic systems, trash dumping)
- Urban runoff
- Impacts from landfills
- Stormwater runoff from industrial facilities
- Leakage of MTBE from underground storage tanks
- Groundwater contamination with volatile organic compounds and metals; cross-contamination between surface and groundwater
- Groundwater recharge with reclaimed water
- Contaminated sediments within estuary

#### Stakeholder Groups

- [Los Angeles and San Gabriel Rivers Watershed Council](#)
- [Friends of the Los Angeles River](#)
- [Arroyo Seco Foundation](#)
- [Contaminated Sediments Task Force](#)

**Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

*Proposition 13 Grant Projects*

- Assessing and Reducing Sources of Plastic and Trash in Urban and Coastal Waters, Lower Los Angeles/San Gabriel Rivers
- 8<sup>th</sup> Street Low Flow Diversion and Treatment Project, Los Angeles River
- Environmental Justice Watershed Awareness: Water Conservation and Pollution Prevention, Compton Creek
- Watershed Management Plan Development for Compton Creek, Compton Creek/Los Angeles River
- Watershed Management and Restoration Plan Development for Arroyo Seco, Arroyo Seco
- Watershed Management Plan Development for Rio Hondo, Rio Hondo/Los Angeles River
- Upper Los Angeles River Urban Runoff Pollution Removal Projects, Los Angeles River
- Infiltration of Urban Runoff Demonstration Project, Los Angeles River
- City of Los Angeles Augustus B. Hawkins Wetland Habitat, Los Angeles River
- Hamilton Bowl Trash Reduction Project, Los Angeles River
- Los Angeles Street River Street-End Biofiltration, Los Angeles River

*Clean Water Act Section 319(h) Grant Projects*

- Los Angeles Stormwater Urban Runoff Public Education Project
- Los Angeles RiverWatch Volunteer Monitoring Project
- Los Angeles Volunteer Monitoring and Education Project, Region-Wide
- Community-Based Watershed Pollution Prevention Partnership Program, Compton Creek Watershed
- Los Angeles River Street End Biofiltration, Los Angeles River

*Clean Water Act Section 205(j) Grant Projects*

- Comprehensive Creek Assessment and Management Plan, Dry Canyon/McCoy Creeks

**Projects funded through Clean Beaches Initiative (CBI) administered by State Board:**

- TMDL Technical Assistance and Implementation of Trash TMDL, Lower Los Angeles River/Long Beach

Potential future water quality improvement projects:

<b>Project Type and Description</b>	<b>Relative Priority</b>
<i>Implement BMPs/Improve Water Quality</i>	
Implement trash reduction BMPs	<b>A</b>
Manage horse corral runoff	<b>A</b>
Implement septic corrective measures	<b>C</b>
Manage golf course irrigation runoff	<b>A</b>
Manage nursery runoff	<b>A</b>
Manage urban runoff	<b>A</b>
<i>Habitat Restoration/Beneficial Use Enhancement</i>	
Restore pocket wetlands along highly altered waterways/where there were historic wetlands	<b>A</b>
General restoration of impaired riparian and aquatic habitats	<b>A</b>
Enhance the water's beneficial and recreational uses	<b>A</b>

## **Calleguas Creek Watershed**

### Watershed Overview

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

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

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

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

### Permitted Discharges:

- 22 NPDES discharges; three major discharges (POTWs); nine minor discharges (3 POTWs); ten discharges covered by general permits
- 55 dischargers covered under an industrial storm water permit
- 151 dischargers covered under construction storm water permit
- Municipal storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

- Nitrogen and related effects (except in Rio de Santa Clara) (2003)
- Chlorides (2003)
- Other salts (2004)
- Historic pesticides and effects (except in Rio de Santa Clara) (2005)
- PCBs (2005)
- Metals (except in lagoon) (2006)
- Metals (in lagoon) (2009)
- Historic pesticides and effects (in Rio de Santa Clara) (2009)
- Trash (2009)
- Selenium (2009)
- Nitrogen (in Rio de Santa Clara) (2009)

### Major water quality-related issues:

- Sediment inputs to Mugu Lagoon, one of the largest wetlands in southern California
- Competing urban uses; development pressures, particularly in upper watershed
- Severe lack of benthic and riparian habitat in watershed

- Contaminated sediments (from historic pesticides and PCBs)
- Impacts to wetlands biota
- Groundwater impacts from nitrogen and salts
- Water column toxicity (from ammonia and water-soluble pesticides)
- Impacts from POTWs, agriculture (lower and middle watershed), and naval facility
- Urban runoff (middle and upper watershed)

Stakeholder group

- [Calleguas Creek Watershed Management Plan Committee](#)

**Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

*Proposition 13 Grant Projects*

- Use of Improved Technologies and BMPs for control of Nursery Runoff, Calleguas Creek

*Clean Water Act Section 319(h) Grant Projects*

- Phase I: Calleguas Creek Watershed Treatment Project, Calleguas Creek
- Phase II: Calleguas Creek Watershed Treatment Project, Calleguas Creek
- Phase III: Calleguas Creek Watershed Treatment Project, Calleguas Creek
- Calleguas Water Quality Monitoring Program, Calleguas Creek
- Septic Tank Nutrient Removal Project, Calleguas Creek
- Wellhead Protection Demonstration Project, Oxnard Plane/Calleguas Creek

*Clean Water Act Section 205(j) Grant Projects*

- Calleguas Creek Nutrient TMDLs Study, Calleguas Creek

Potential future water quality improvement projects:

<b>Project Type and Description</b>	<b>Relative Priority</b>
<i>Implement BMPs/Improve Water Quality</i>	
Implement erosion control BMPs (natural/non-structural e.g. buffer zones) to reduce erosion while increasing wildlife habitat	<b>C</b>
Implement agricultural nutrient management BMPs	<b>B</b>
<i>Habitat Restoration/Beneficial Use Enhancement</i>	
General restoration of impaired riparian and aquatic	<b>C</b>
<i>Assess loadings and impacts</i>	
Investigate nitrogen and salt loading contributions to ground and surface water	<b>C</b>
Investigate organics and/or metals accumulation and loadings	<b>C</b>
Investigate loading contributions from agricultural activities	<b>C</b>
Investigate loading contributions from residential and urban activities	<b>C</b>
Develop TMDL	<b>C</b>
<i>Research-oriented studies</i>	
Conduct hydrologic study of estuary and evaluation of resource mix	<b>C</b>
<i>Water Conservation and Management</i>	
Investigate nitrogen and salt loading contributions to ground and surface water	<b>C</b>
<i>Land Acquisition</i>	
Acquire Mugu Lagoon Duck Clubs easement	<b>C</b>

## **Ventura River Watershed**

### Watershed Overview

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

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

### Permitted Discharges

- 5 NPDES discharges: one major (POTW) and four discharges covered by general permits
- 21 dischargers covered under an industrial storm water permit
- 4 dischargers covered under a construction storm water permit
- Municipal storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

- DDT (estuary) (2006)
- Eutrophication (2006)
- Pumping and diversions (2006)
- Metals (except selenium) (2006)
- Trash (estuary) (2006)
- Selenium (2006)

### Major water quality-related issues:

- Eutrophication, especially in lagoon; contributions from POTW
- Some bioaccumulation of DDT and metals
- Total dissolved solids (TDS) concerns in some subwatersheds
- Impediments to steelhead trout migration to high quality habitat
- Nonpoint sources of pollution in lower watershed (agriculture, ranching, oil pumping, urban runoff)

### Stakeholder Groups

#### [Matilija Dam Steering and Executive Committees](#)

#### [The Matilija Coalition](#)

### **Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

#### *Proposition 13 Grant Projects*

- None

#### *Clean Water Act Section 319(h) Grant Projects*

- Ventura River Stream Team, Ventura River, Ventura River

*Clean Water Act Section 205(j) Grant Projects*

- Brining the Pieces Together-Ventura River Watershed Plan, Ventura River

Potential future water quality improvement projects:

**Project Type and Description**

**Relative Priority**

*Implement BMPs/Improve Water Quality*

Manage horse corral runoff	<b>B</b>
Implement erosion control BMPs (natural/non-structural e.g. buffer zones) to reduce erosion while increasing wildlife habitat	<b>A</b>
TMDL Implementation	<b>A</b>

*Habitat Restoration/Beneficial Use Enhancement*

Enhance/restore steelhead trout habitat	<b>A</b>
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*Assess loadings and impacts*

Investigate eutrophication in the Ventura Lagoon	<b>A</b>
Investigate organics and/or metals accumulation and loadings	<b>C</b>
Identify and evaluate opportunities to promote recovery and restoration of steelhead trout	<b>A</b>

## Santa Monica Bay Watershed Management Area

### Watershed Overview

The Santa Monica Bay Watershed Management Area (WMA), which encompasses an area of 414 square miles, is quite diverse. Its borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. South of Ballona Creek the natural drainage area is a narrow strip of wetlands between Playa del Rey and Palos Verdes. The WMA includes several watersheds, the two largest being Malibu Creek to the north and Ballona Creek to the south. The Malibu Creek area contains mostly undeveloped mountain areas, large acreage residential properties and many natural stream reaches while Ballona Creek is predominantly channelized, and highly developed with both residential and commercial properties.

As a nationally significant water body, Santa Monica Bay was included in the National Estuary Program in 1989. It has been extensively studied by the Santa Monica Bay Restoration Project (SMBRP) and a watershed plan was developed in 1995. The Santa Monica Bay Watershed Council was formed in 1994 to oversee implementation of the Plan. The Restoration Project staff will be coordinating with Regional Board staff to carry out the Board's watershed approach in the Santa Monica Bay Watershed.

### Permitted Discharges

- 191 NPDES discharges including: seven major NPDES permit discharges, three POTWs (two direct ocean discharges), one refinery, and three generating stations; 23 are minor discharges
- 161 dischargers covered under general permits
- 103 dischargers covered by an industrial storm water permit
- 113 dischargers covered by a construction storm water permit
- Municipal storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

<p><i>Malibu Creek Watershed</i></p> <ul style="list-style-type: none"> <li>• Coliform (2003)</li> <li>• Nutrients and their effects (2003)</li> <li>• Historic pesticides (lakes) (2010)</li> <li>• Trash (2007)</li> <li>• Salts (one lake) (2010)</li> <li>• Metals (2008)</li> <li>• Benthic community effects (lagoon) (2010)</li> </ul>	<p><i>Ballona Creek Watershed</i></p> <ul style="list-style-type: none"> <li>• Coliform (2004)</li> <li>• Trash (completed)</li> <li>• Historic PCBs and pesticides (2005)</li> <li>• Metals (2004)</li> <li>• Habitat alteration (2010)</li> <li>• Tributyltin (TBT) (2010)</li> </ul>	<p><i>Marina del Rey Harbor</i></p> <ul style="list-style-type: none"> <li>• Coliform (2004)</li> <li>• Historic PCBs and pesticides (2004)</li> <li>• Metals (2005)</li> <li>• TBT (2010)</li> </ul>
<p><i>Beaches</i></p> <ul style="list-style-type: none"> <li>• Coliform (2002)</li> <li>• Historic PCBs and pesticides (2010)</li> </ul>	<p><i>Nearshore and Offshore Zone</i></p> <ul style="list-style-type: none"> <li>• Metals (2005)</li> <li>• Chlordane (2006)</li> <li>• Historic PCBs and pesticides (2010)</li> <li>• Debris (2010)</li> </ul>	<p><i>Other drainages</i></p> <ul style="list-style-type: none"> <li>• Ammonia (2010)</li> <li>• Metals (2007)</li> <li>• Low dissolved oxygen (2009)</li> <li>• Trash (2010)</li> </ul>

### Major water quality-related issues:

#### *Coastline*

- Acute health risk associated with swimming in runoff-contaminated surfzone waters
- Chronic risk associated with consumption of seafood in areas impacted by DDT and PCB contamination
- Reduction of loadings from the two major POTWs in light of projected population increases

- Historic deposits of DDT and PCBs in sediment
- Loadings of pollutants from other sources: sediment resuspension, atmospheric deposition
- Other impacts from urban runoff/storm water
- The need to have a better understanding of the Bay's resources

#### *Malibu Creek Watershed*

- Excessive freshwater, nutrients, and coliform in lagoon; contributions from POTW and other sources
- Urban runoff from upper watershed
- Impacts to swimmers/surfers from lagoon water
- Poorly managed or sited septic tanks in lower watershed
- Appropriate restoration and management of lagoon
- Access to creek and lagoon by endangered fish

#### *Ballona Creek Watershed*

- Trash loading from creek
- Wetlands restoration
- Sediment contamination by heavy metals from creek to Marina del Rey Harbor and offshore)
- Sediment contamination by heavy metals and trace organics within Ballona Creek Entrance Channel
- Toxicity of both dry weather and storm runoff in creek
- High bacterial indicators at mouth of creek

#### Stakeholder Groups

- [Santa Monica Bay Restoration Project](#)
- [Malibu Creek Watershed Advisory Council](#)
- [Topanga Creek Watershed Committee](#)
- [Contaminated Sediments Task Force](#)

#### **Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

##### *Proposition 13 Grant Projects*

- Implementation of Coliform TMDL for Santa Monica Bay Beaches, Santa Monica Bay
- Implementation and Evaluation of BMPs to Improve Coastal Water Quality, Santa Monica Bay
- Malibu Creek Watershed Wide Monitoring Plan, Malibu Creek/Santa Monica Bay
- Malibu Lagoon Water Quality and Habitat Enhancement, Malibu Creek/Malibu Lagoon
- Methodology for Prioritizing Structural BMPs Project, Santa Monica Bay
- Watershed Management Plan Development for Ballona Creek, Ballona Creek
- Malibu Creek Watershed Urban Runoff Reduction Project, Malibu Creek
- Three Springs Water Quality Improvements, Westlake Lake/Malibu Creek
- Montana Dry-Wet Weather Runoff Diversion and BMPs Mitigation Measures, Santa Monica Bay

##### *Clean Water Act Section 319(h) Grant Projects*

- Stream Team/Horse and Stable BMPs Project, Malibu Creek
- Beach-keeper Citizen Volunteer Monitoring Project, Santa Monica Bay
- Beach-Keeper Citizen Monitoring Program, Santa Monica Bay/Ballona Creek
- Clean Marina and In-Water Hull Cleaner Certification Program, Santa Monica Bay
- Malibu Creek Watershed Protection Project, Malibu Creek
- Malibu Creek Watershed Protection and Education Project, Las Virgenes/Malibu Creek
- Lower Zuma Creek and Lagoon Restoration Project, Lower Zuma Creek and Lagoon
- Adopt-a-Gutter Urban Runoff Education Project, Santa Monica Bay

*Clean Water Act Section 205(j) Grant Projects*

- Las Virgenes Creek Assessment and Management Plan, Las Virgenes Creek
- Lower Malibu Creek Management Plan, Malibu Creek
- Topanga Creek Watershed Planning Study, Topanga Creek

**Projects administered by the Santa Monica Bay Restoration Project and funded through Proposition 12 grants:**

- Restoration of Riparian Habitat-Solstice Canyon
- Malibu Creek Environmental Restoration Study (Rinde Dam)
- Ballona Creek Quality Improvement Project
- Temescal Canyon Low Flow Diversion and Treatment
- Kelp Restoration Project
- Catch Basins Debris Excluder Devices
- Malibu Creek Habitat Enhancement
- Madrona Marsh Restoration and Enhancement Project
- Nearshore Fish Populations and Assemblages
- Imperial Hwy Low Flow Diversion and Treatment
- Lower Topanga Canyon Arundo and Non-native Plant Eradication
- Ocean Discovery Center Eco Pak Program
- Rocky Intertidal Habitat Restoration
- Upper Topanga Creek Pond Turtle Habitat Restoration and Population Study
- Ballona Creek Litter Monitoring Project
- Mapping and Assessment of Shallow Water Habitat in Santa Monica Bay
- Stream Health Index and Index of Biological integrity for Malibu Creek Watershed
- Risk Assessment of Decentralized Wastewater Systems, Malibu
- Las Virgenes Creek Restoration
- Interactive Information Systems for Santa Monica Bay
- Ocean Discovery Center Expansion Project
- Phase II Topanga Creek Watershed and Lagoon Restoration
- Installation of 3 CDS Units
- Installation of a 2-stage BMP system in Centinela Drainage area
- Installation of 4 trash collection systems in South Central Los Angeles and one pollutant removal device in an industrial area
- Castlerock Low Flow Diversion , Parker Canyon
- Pulga Canyon Low Flow Diversion
- Tuna Canyon Riparian Restoration
- Ballona Wetland Dunes Restoration
- Fish Passage at Lower Malibu Creek
- Santa Monica Mountains Steelhead Assessment
- Ballona Watershed Storm Water Pilot Project
- Las Virgenes Creek Restoration #2
- Recycled Water Line Extension
- Kelp Habitat Restoration #2
- Trancas Creek Amphibian Habitat Restoration
- Nicholas Canyon Creek Restoration, Malibu

**Projects funded through Clean Beaches Initiative (CBI) administered by State Board:**

- Feasibility and Construction of Water Infusion System to Improve Water Circulation, Mother’s Beach/Marina Del Rey
- Storm Drain Filtration and Disinfection at Two Drains, Surfrider Beach/Malibu Lagoon
- Installation of Polluted Runoff Treatment Technology, Malibu Creek
- Restoration of Native Flows, Malibu Creek
- Water Circulation Improvements Feasibility and Design, Cabrillo Beach
- Sewer Line Upgrades, Netting, Fish Bait Waste Collection and Bird-Proof Trash Enclosures, Santa Monica Pier
- Sewer Line Upgrades, Netting, Fish Bait Waste Collection and Bird-Proof Trash Enclosures, Redondo Beach Pier
- Dry Weather Diversion, Manhattan Beach/Temescal Canyon
- 27<sup>th</sup> Street Dry Weather Diversion, Manhattan Beach
- Santa Monica Canyon Dry Weather Diversion, Santa Monica Bay/Canyon
- Dry Weather Diversion, Imperial Beach
- Implementation of Santa Monica Bay Restoration Project Management Plan, Surfrider Beach/Malibu Lagoon

Potential future water quality improvement projects:

<b>Project Type and Description</b>	<b>Relative Priority</b>
<i>Habitat Restoration/Beneficial Use Enhancement</i>	
General restoration of impaired riparian and aquatic habitats	<b>C</b>
Enhance the water's beneficial and recreational uses	<b>C</b>
<i>Assess loadings and impacts</i>	
Evaluate peak storm water runoff discharge control to reduce erosion	<b>B</b>
Evaluate and identify sources of urban runoff toxicity	<b>A</b>
Assess the sustainability of key commercial species	<b>C</b>
Assess the sustainability of key sport-fishing species	<b>C</b>
Assess fish contamination levels in entire Santa Monica Bay	<b>C</b>
Prioritize storm drains needing diversion; focus efforts on major problem drains for coliform TMDL implementation	<b>A</b>
<i>Research-oriented studies</i>	
Develop practical sanitation survey tools	<b>A</b>
Study effectiveness of non-structural BMPs (public outreach)	<b>A</b>
<i>Monitoring</i>	
Implement biological monitoring	<b>B</b>
<i>Education and Outreach</i>	
Septic tank education/outreach	<b>C</b>

## **Santa Clara River Watershed**

### Watershed Overview

The Santa Clara River is the largest river system in southern California (approximately 100 miles long with an approximately 1,200 sq. mi. watershed) that remains in a relatively natural state; this is a high quality natural resource for much of its length. The river originates in the northern slope of the San Gabriel Mountains in Los Angeles County, traverses Ventura County, and flows into the Pacific Ocean halfway between the cities of San Buenaventura and Oxnard.

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

### Permitted Discharges

- 47 NPDES discharges
- Four major discharges (POTWs, (one discharging to estuary, one to middle reaches, two into upper watershed)
- 13 minor discharges
- 30 discharges covered under general permits
- 72 dischargers covered under an industrial storm water permit
- 188 dischargers covered under a construction storm water permit
- Municipal storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

- Chlorides (2002)
- Nitrogen (2003)
- Eutrophication (lakes) (2005)
- Trash (lakes) (2005)
- Coliform (2006)
- Historic pesticides (estuary) (2007)

### Major watershed issues:

- Contributions from POTWs, agriculture, ranching
- Impacts from exotic vegetation
- Impacts from agriculture
- Increasing urbanization, flows, and channelization in upper watershed; impacts on middle and lower watershed

### Stakeholder Groups

- [Santa Clara River Enhancement and Management Plan Steering Committee](#)
- [Friends of the Santa Clara River](#)
- [Santa Clarita Organization for Planning the Environment](#)

**Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

*Proposition 13 Grant Projects*

- Use of Improved Technologies and BMPs for control of Nursery Runoff, Santa Clara River
- NPS Pollution Control Program - El Rio Sewer System Project, Santa Clara River
- Saticoy Recycle and Groundwater Recharge Facility, Santa Clara River
- Upper Santa Clara River Watershed Arundo Donax and Tamarisk Eradication Program, Upper Santa Clara River

*Clean Water Act Section 319 9h) Grant Projects*

- None

*Clean Water Act Section 205(j) Grant Projects*

- Santa Clara River Water Quality Issues and Comprehensive Monitoring, Santa Clara River

Potential future water quality improvement projects:

<b>Project Type and Description</b>	<b><u>Relative Priority</u></b>
<i>Implement BMPs/Improve Water Quality</i>	
Implement erosion control BMPs (natural/non-structural e.g. buffer zones) to reduce erosion while increasing wildlife habitat	<b>B</b>
Implement agricultural nutrient management BMPs	<b>A</b>
Mitigate beach erosion	<b>A</b>
Implement mitigation measures for floodplain development	<b>A</b>
<i>Habitat Restoration/Beneficial Use Enhancement</i>	
General restoration of impaired riparian and aquatic habitats	<b>A</b>
Restore river channels and habitat following impacts from mining	<b>A</b>
Enhance/restore steelhead trout habitat	<b>A</b>
<i>Assess loadings and impacts</i>	
Investigate nitrogen and salt loading contributions to ground and surface water	<b>A</b>
Identify conflicts between water supply and water quality in lower watershed	<b>A</b>
Investigate loading contributions from septic systems	<b>B</b>
Evaluate impacts from large-scale development in the upper river, and integration of sustainable land uses and landscape designs	<b>A</b>
Identify and evaluate opportunities to promote recovery and restoration of steelhead trout	<b>A</b>
<i>Water Conservation and Management</i>	
Mitigate groundwater overdraft	<b>A</b>
Investigate nitrogen and salt loading contributions to ground and surface water	<b>A</b>
Identify conflicts between water supply and water quality in lower watershed	<b>A</b>
<i>Monitoring</i>	
Implement biological monitoring	<b>A</b>
<i>Watershed Planning</i>	
Complete GIS overlay analysis	<b>A</b>
<i>Land Acquisition</i>	
Acquire and restore parcels at the mouth of the river (conservation easements)	<b>A</b>

## **Dominguez Channel and Los Angeles/Long Beach Harbor Watershed Management Area**

### Watershed Overview

The Los Angeles and Long Beach Harbors are located in the southern portion of the Los Angeles Basin. Along the northern portion of San Pedro Bay is a natural embayment formed by a westerly extension of the coastline, which contains both harbors, with the Palos Verdes Hills, the dominant onshore feature. Historically, the area consisted of marshes and mudflats with a large marshy area, Dominguez Slough, to the north, and flow from the Los Angeles River entering where Dominguez Channel now drains. Near the end of last century and during the beginning of this one, channels were dredged, marshes were filled, wharves were constructed, the Los Angeles River was diverted, and a breakwater was constructed in order to allow deep draft ships to be directly offloaded and products be swiftly moved. The Dominguez Slough was completely channelized and became the drainage endpoint for runoff from a highly industrialized area. Eventually, the greater San Pedro Bay was enclosed by two more breakwaters and deep entrance channels were dredged to allow for entry of ships with need of 70 feet of clearance. The LA/LB Harbor complex together is now one of the largest ports in the country.

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

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

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

### Permitted Discharges

- Ten major NPDES discharges: one POTW, two generating stations, and six refineries; 58 minor discharges; 62 discharges covered by general permits
- 424 dischargers covered under an industrial storm water permit
- 115 dischargers covered under the construction storm water permit
- Municipal storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

- Beach closures (outer harbor) (2003)
- Coliform (2003)
- Metals (inner waters) (2007)
- Trash (lake) (2008)
- Ammonia (2008)
- Historic PCBs and pesticides (2008)
- Polycyclic aromatic hydrocarbons (PAHs) (2008)
- Metals (nearshore and offshore) (2011)
- TBT (2011)
- Nitrogen (lake) (2011)

### Major water quality-related issues:

- Spills from ships and industrial facilities
- Discharges from POTW & refineries
- Leaching of contaminated groundwater

- Contaminated stormwater runoff from industrial facilities
- Resuspension of contaminated sediments
- Historical deposits of DDT and PCBs in sediment
- Aerial deposition of pollutants from heavily industrialized area

Stakeholder Groups

- [Dominguez Watershed Advisory Council](#)
- [Contaminated Sediments Task Force](#)

**Projects funded with Proposition 13 and Clean Water Act Section 319(h) and 205 (j) grants:**

*Proposition 13 Grant Projects*

- Effects of Marine and Estuarine Hydrodynamics on Pollutants Transportation, Dominguez Channel
- Watershed Management Plan Development for Dominguez Channel, Dominguez Channel

*Clean Water Act Section 319(h) Grant Projects*

- None

*Clean Water Act Section 205(j) Grant Projects*

- Machado Lake Assessment Project, Los Angeles River/Machado Lake

Potential future water quality improvement projects:

<b>Project Type and Description</b>	<b>Relative Priority</b>
<i>Habitat Restoration/Beneficial Use Enhancement</i>	
Restore pocket wetlands along highly altered waterways/where there were historic wetlands	<b>A</b>
General restoration of impaired riparian and aquatic habitats	<b>B</b>
<i>Assess loadings and impacts</i>	
Investigate organics and/or metals accumulation and loadings	<b>A</b>
Develop TMDL	<b>A</b>
<i>Monitoring</i>	
Implement biological monitoring	<b>A</b>
Develop a watershed wide monitoring program	<b>A</b>
<i>Education and Outreach</i>	
Implement watershed education and outreach	<b>C</b>

## **Miscellaneous Ventura Coastal Watershed Management Area**

### Watershed Overview

The WMA is composed of four separate coastal drainage areas located between the Regional boundary, the Ventura River, Santa Clara River, and Calleguas Creek Watersheds, as well as, the Santa Monica Bay WMA. The drainage areas are typified by small coastal streams, wetlands, or marinas.

*Channel Islands Harbor:* Channel Islands Harbor is located south of the Santa Clara River and is in the immediate vicinity of considerable residential development and some agricultural land. The Southern California Edison inlet canal to the Ormond Beach Generating Station is located at the north end of the harbor. The harbor is home to many recreational boats and two boatyards.

*Port Hueneme Harbor:* Port Hueneme is a medium-sized deepwater harbor located in Ventura County, north of Mugu Lagoon. A U.S. Navy Construction Battalion operated part of it until very recently while the rest of the harbor serves as a commercial port operated by the Oxnard Harbor District. The construction of a majority of the harbor was completed in 1975. The commercial side generally serves ocean going cargo vessels and oil supply boats; the latter serve the oil platforms in the Santa Barbara Channel. Two endangered bird species may use the harbor, the California Brown Pelican and the California Least Tern.

*Ventura Marina:* Ventura Marina is a small craft harbor located between the mouths of the Ventura and Santa Clara Rivers. It is home to numerous small boats and two boatyards. The "Ventura Keys" area of the marina is a residential area situated along three canals. The marina is surrounded by agricultural land and a large unlined ditch drains into the Keys area. Since the marina is between the mouths of two rivers which discharge large sediment loads from their relatively undeveloped watersheds, the marina has a constant problem with keeping the entrance channel open.

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

*Open Coastline:* A major feature of the coastline north of Mugu Lagoon is Ormond Beach and Ormond Beach Wetlands. There are a number of scenarios under consideration for restoration of these degraded yet valuable wetlands.

### Permitted Discharges

- 24 NPDES discharges including three major discharges (one POTW and two generating stations), 13 minor discharges, and eight covered by general permits
- 77 dischargers covered under an industrial storm water permit
- 46 dischargers covered under a construction storm water permit
- Municipal storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

- Coliform (beaches) (2003)
- Coliform (Ventura Harbor) (2007)
- Historic organics (Port Hueneme Harbor) (2007)
- PAHs (Port Hueneme Harbor) (2007)
- Zinc (Port Hueneme Harbor) (2005)
- Metals (Channel Islands Harbor) (2011)
- TBT (Port Hueneme Harbor) (2011)

### Major water quality-related issues:

*The harbors*

- Accumulation of metals, PCBs, and historic pesticides in sediment and tissue
- Considerable marine life subject to impacts

*The wetlands and coast*

- Historic pesticide contamination
- Loss of quality habitat
- Impacts from oil spills and agriculture
- Use by endangered species

Stakeholder Group

- [Ormond Beach Task Force \(c/o Wetlands Recovery Project Ventura County Task Force\)](#)

**Projects funded through Proposition 13 and Clean Water Act Section 205(j) and 319(h) grants:**

***Proposition 13 Grants Projects***

- Use of Improved Technologies and BMPs for control of Nursery Runoff, Ventura Coastal Area
- MacGrath lake Watershed Phase I-Sediment Control and Mitigation, Ventura Coastal Area

*Clean Water Act Section 319(h) Grant Projects*

- None

*Clean Water Act Section 205(j) Grant Projects*

- None

**Projects funded through Clean Beaches Initiative (CBI) administered by State Board:**

- Dry Weather Diversion and Tidal Circulation Feasibility Study, Kiddie and Hobbie Beach

Potential future water quality improvement projects:

<b>Project Type and Description</b>	<b>Relative Priority</b>
<i>Implement BMPs/Improve Water Quality</i>	
Implement management measures to reduce NPS pollution in marinas	<b>A</b>
Reroute Arrundell Barranca	<b>C</b>
<i>Habitat Restoration/Beneficial Use Enhancement</i>	
General restoration of impaired riparian and aquatic habitats	<b>A</b>
<i>Assess loadings and impacts</i>	
Investigate loading contributions from septic systems	<b>B</b>
<i>Research-oriented studies</i>	
Research management measures to reduce NPS pollution in marinas	<b>A</b>
<i>Water Conservation and Management</i>	
Mitigate groundwater overdraft	<b>A</b>
<i>Monitoring</i>	
Implement biological monitoring	<b>B</b>
<i>Education and Outreach</i>	

Expand voluntary programs into non-stormwater/nonpoint domains	C
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## **San Gabriel River Watershed**

### Watershed Overview

The San Gabriel River receives drainage from a large area of eastern Los Angeles County (689 sq. mi.); its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds utilized for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir (normally only during high storm flows). The lower part of the river flows through a concrete-lined channel in a heavily urbanized portion of the county before becoming a soft bottom channel once again near the ocean in the city of Long Beach. Large electrical power poles line the river along the channelized portion and nurseries, small stable areas, and a former poultry farm are located in these areas.

### Permitted Discharges

- 109 NPDES discharges including: ten major NPDES dischargers (five POTWs), 24 minor permits, 75 discharges covered under general permits
- 2 municipal storm water permits
- 534 dischargers covered under an industrial storm water permit
- 121 dischargers covered under a construction storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

- Trash (East Fork) (completed)
- Coliform (2003)
- Nitrogen (lakes) (2004)
- Metals (2005)
- Nitrogen (except lakes) (2005)
- Historic PCBs and pesticides (lake) (2006)
- Metals (lakes) (2006)
- Abnormal fish histology (2006)
- Trash (lake) (2009)

### Major water quality-related issues:

- Sluicing and disposal of sediments from reservoirs
- Protection of groundwater recharge areas; use of recycled water in recharge areas
- Ambient toxicity
- Exposed water table in depleted gravel pits
- Remediation of extensive contaminated groundwater
- Excessive trash in recreational areas of upper watershed
- Extensive stream modification for mining and water reclamation
- Urban and storm water runoff quality
- Nonpoint source loadings from nurseries and horse stables
- Lack of understanding of estuary dynamics (e.g. salinity profile)
- Septic systems

### Stakeholder Groups

- [Los Angeles/San Gabriel Rivers Watershed Council](#)
- [Friends of the San Gabriel River](#)

**Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

*Proposition 13 Grants Projects*

- Little Dalton Canyon Environmental Discovery Center and Equestrian Facility, Little Dalton Creek
- Watershed Management Plan Development for San Gabriel River Above Whittier, San Gabriel River
- Water Quality Assessment, Source Identification and Management Action Evaluation for San Gabriel River, San Gabriel River
- Assessing and Reducing Sources of Plastic and Trash in Urban and Coastal Waters, Lower San Gabriel River
- San Gabriel Watershed NPS Pollution Reduction Program, San Gabriel River
- Project Connect: Restoring the Creek-Community in San Gabriel Valley, Walnut Creek

*Clean Water Act Section 319(h) Grant Projects*

- East Fork San Gabriel Litter Abatement Project, East Fork San/Gabriel River

*Clean Water Act Section 205(j) grant Projects*

- None

Potential future water quality improvement projects:

<b>Project Type and Description</b>	<b>Relative Priority</b>
<i>Implement BMPs/Improve Water Quality</i>	
Implement trash reduction BMPs	<b>A</b>
Implement urban runoff reduction BMPs	<b>A</b>
Manage horse corral runoff	<b>B</b>
Implement measures to minimize impacts to aquatic and riparian habitats from flooding (control measures)	<b>B</b>
<i>Habitat Restoration/Beneficial Use Enhancement</i>	
Restore pocket wetlands along highly altered waterways/where there were historic wetlands	<b>A</b>
General restoration of impaired riparian and aquatic habitats	<b>A</b>
<i>Assess loadings and impacts</i>	
Investigate loading contributions from nurseries	
Evaluate impacts of reservoir cleaning on water quality	<b>A</b>
Evaluate impacts of reclaimed water on river/groundwater	<b>B</b>
<i>Education and Outreach</i>	
Implement watershed education and outreach	<b>B</b>

## Los Cerritos Channel and Alamitos Bay Watershed Management Area

### Watershed Overview

*Los Cerritos Channel, Tidal Prism, and Wetlands:* The Los Cerritos Channel is concrete-lined above the tidal prism and drains a relatively small area of east Long Beach, albeit a densely urbanized one. The channel's tidal prism starts at Anaheim Road and connects with Alamitos Bay through the Marine Stadium; the wetlands connect to the Channel a short distance from the lower end of the Channel. The wetlands, and portion of the channel near the wetlands, is an overwintering site for a great diversity of birds (up to 50 species) despite its small size. An endangered bird species, the Belding's Savannah Sparrow, may nest there and an area adjacent to the wetlands is a historic least tern colony site. One small marina is located in the channel that is also used by rowing teams and is a popular fishing area.

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

### Permitted Discharges

- 12 NPDES discharges: four minor and eight under general permits
- 2 municipal storm water permits
- 17 dischargers covered under an industrial storm water permit
- 15 dischargers covered under a construction storm water permit

### Identified water quality impairments and tentative TMDLs completion dates:

- Historic PCBs and pesticides (Colorado Lagoon) (2005)
- Metals and PAHs (Colorado Lagoon) (2005)
- Metals (Los Cerritos Channel) (2005)
- Ammonia (Los Cerritos Channel) (2005)
- Coliform (Los Cerritos Channel) (2005)

### Major water quality-related issues:

- Loss of wetlands habitat in Los Cerritos area
- Impacts from antifouling paint in marinas
- Urban and storm water runoff impacts on isolated water bodies
- Loss of tidal exchange

### Stakeholder Groups

- [Los Cerritos Wetlands Task Force](#)
- [Los Angeles/San Gabriel Rivers Watershed Council](#)

### **Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

#### ***Proposition 13 Grant Projects***

- Assessing and Reducing Sources of Plastic and Trash in Urban and Coastal Waters, Lower San Gabriel River

#### *Clean Water Act Section 319(h) Grant Projects*

- None

*Clean Water Act Section 205(j) Grant Projects*

- None

**Projects funded through Clean Beaches Initiative (CBI) administered by State Board:**

- Storm Drain Diversion and Disinfection, Colorado Lagoon

Potential future water quality improvement projects:

**Project Type and Description** **Relative Priority**

*Implement BMPs/Improve Water Quality*

Implement measures to minimize impacts to aquatic and riparian habitats from flooding (control measures)	<b>B</b>
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*Habitat Restoration/Beneficial Use Enhancement*

General restoration of impaired riparian and aquatic habitats	<b>A</b>
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*Assess loadings and impacts*

Evaluate impacts of antifouling paint in marinas	<b>A</b>
Evaluate impacts of urban runoff on isolated water bodies	<b>A</b>
Evaluate impacts of loss of tidal exchange	<b>B</b>

*Monitoring*

Implement citizen monitoring	<b>C</b>
Implement biological monitoring	<b>A</b>

*Education and Outreach*

Implement watershed education and outreach	<b>A</b>
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*Watershed Planning*

Los Cerritos Watershed Management Area Plan development	<b>A</b>
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## **Channel Islands Watershed Management Area**

### Watershed Overview

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

### Permitted Discharges

- 5 NPDES discharges including one POTW (major discharge) on Catalina Island
- Four minor NPDES discharges
- 6 dischargers covered under an industrial storm water permit
- 1 discharger covered under a construction storm water permit
- Municipal storm water permit

Identified water quality impairments: None

### Major water quality-related issues:

- Areas offshore of islands designated as Areas of Special Biological Significance
- High quality marine and rocky intertidal habitat
- Heavy use by marine mammals and endangered species
- Lack of information on water quality

### **Projects funded through Proposition 13 and Clean Water Act Section 319(h) and 205(j) grants:**

- None

### **Projects funded through Clean Beaches Initiative (CBI) administered by State Board:**

- Dry Weather Diversion and Tidal Circulation Feasibility Study, Avalon Beach

Potential future water quality improvement projects:

**Regionwide**

<b>Project Type and Description</b>	<b>Relative Priority</b>
<i>Implement BMPs/Improve Water Quality</i>	
Implement nonpoint pollution control strategies	<b>B</b>
<i>Assess loadings and impacts</i>	
Investigate loading contributions from nurseries	<b>A</b>
Investigate loading contributions from golf courses	<b>A</b>
<i>Research-oriented studies</i>	
Evaluate which BMPs are most effective for the various industrial sectors	<b>A</b>
Evaluate design and performance standards for implementation of storm water BMPs	<b>A</b>
Research and develop indicators and a "report card" format	<b>A</b>
Develop nonpoint pollution control strategies	<b>B</b>
Study effectiveness of non-structural BMPs (public outreach)	<b>C</b>
Analyze storm water quality data and trends from various industrial sectors (e.g. metal yards, waste management facilities, etc.)	<b>A</b>
<i>Monitoring</i>	
Create GIS repository for watershed data	<b>B</b>
<i>Education and Outreach</i>	
Septic tank education/outreach	<b>C</b>
Conduct activities to increase public awareness of nonpoint source pollution and the related solutions available	<b>C</b>