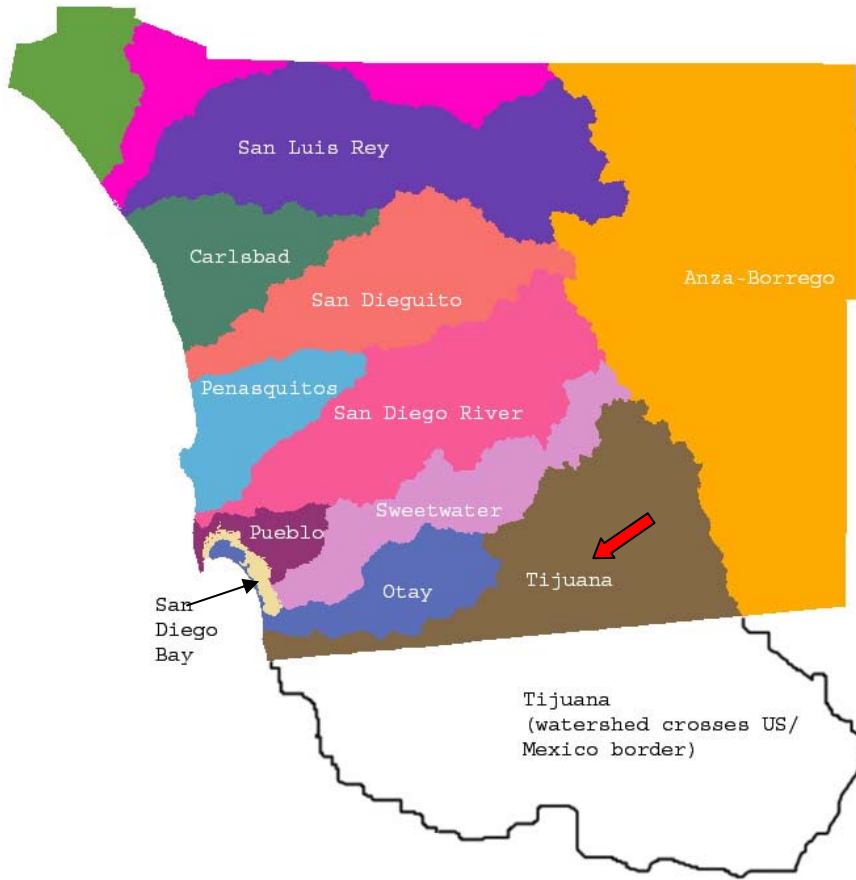


## Tijuana Watershed

Major Water Bodies:	Tijuana River, Cottonwood Creek, and Tijuana Estuary
CWA 303(d) List:	Tijuana River: eutrophic, coliform bacteria, organic enrichment/ low dissolved oxygen, pesticides, solids, synthetic organics, trace elements, and trash Tijuana River Estuary: eutrophic, coliform bacteria, lead, nickel, pesticides, thallium, trash Pacific Ocean at the Tijuana River mouth: coliform bacteria
Areas of Concern:	<u>Freshwater</u> : coliform bacteria, nutrients, trace metals, pesticides, miscellaneous toxics, low dissolved oxygen, and trash <u>Groundwater</u> : TDS, nitrates, petroleum, MTBE, and solvents
Sources of Problems:	urban runoff, sewage spills, industrial discharges, agricultural / orchards, livestock / domestic animals, and septic systems
Human Population:	1,000,000
Cities in Watershed:	USA- San Diego, Imperial Beach, Mexico- Tijuana, Tecate
Important hydrologic resources:	Tijuana Estuary
Major Issues/Problems:	surface water quality degradation, trash, sedimentation, eutrophication, habitat degradation and loss, flooding, erosion, and invasive species
Land Use:	
Other Facts:	<p>1. The Tijuana River watershed encompasses a region of approximately 1,750 square miles on either side of the California – Baja California border, and in terms of water quality degradation is probably the most severely impacted watershed in San Diego County. Although only 27% of the watershed area is within California, the river discharges to the Tijuana Estuary and Pacific Ocean on the U.S. side of the international border.</p> <p>2. The Tijuana River watershed is classified as a Category I (impaired) watershed by the State Water Resources Control Board due to a wide variety of water quality problems. Category I watersheds are candidates for increased restoration activities due to impaired water quality or other impaired natural resource goals. These problems are largely a result of non-point agricultural sources on the U.S. side of the border and a large variety of point and non-point sources on the Mexican side.</p> <p>3. The Tijuana Estuary, a National Estuarine Sanctuary that supports a variety of threatened and endangered plants and animals, is threatened by inflows from the Tijuana River containing high concentrations of coliform bacteria, sediment, trace metals (copper, lead, zinc, chromium, nickel, and cadmium), PCBs, and other urban, agricultural, and industrial pollutants.</p>

(Information adapted from <http://www.projectcleanwater.org>)

# Tijuana River Watershed



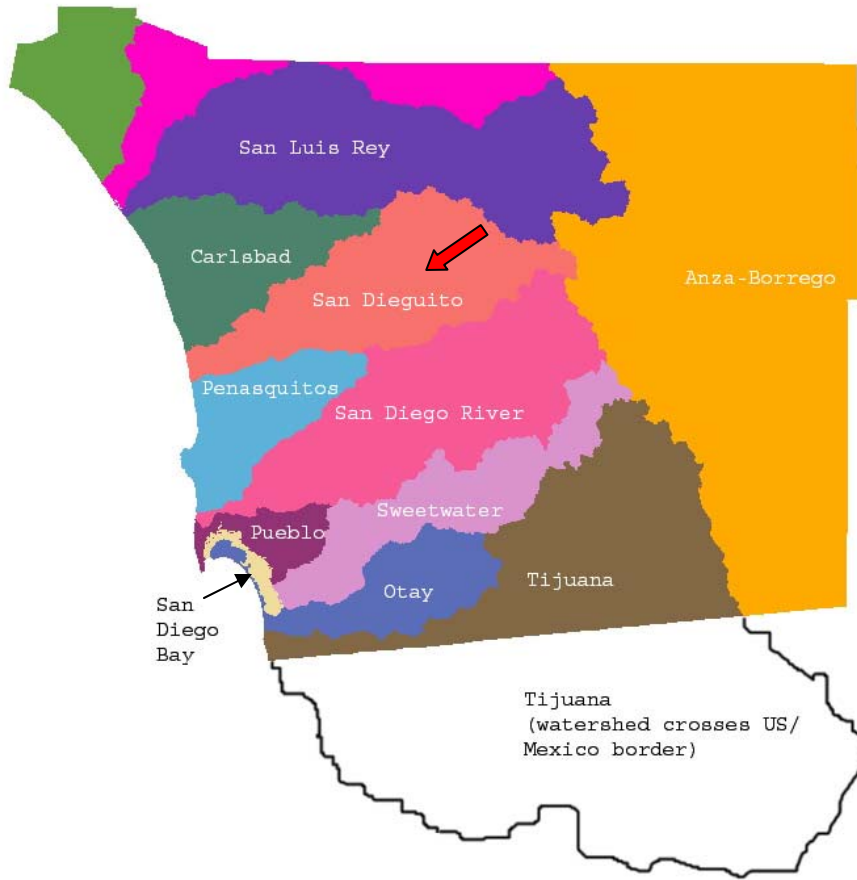
Watershed map showing major water features and topography

## San Dieguito Watershed

Major Water Bodies:	San Dieguito River, San Dieguito Lagoon, and Lake Hodges
CWA 303(d) List:	Pacific Ocean / San Dieguito: coliform bacteria
Areas of Concern:	Coliform bacteria, nutrients, sediment, lowered dissolved oxygen, and trace metals
Sources of Problems:	urban runoff, agricultural runoff, and domestic animals
Human Population:	125,000
Cities in Watershed:	Del Mar, Escondido, Poway, San Diego, and Solana Beach, and unincorporated San Diego County
Important hydrologic resources:	
Major Issues/Problems:	Surface water quality degradation, habitat degradation and loss, invasive species, and increased imperviousness
Land Use:	The San Dieguito River watershed is presently divided into vacant/ undeveloped (54%), parks/ open space (29 %), and urban (18%) land uses.
Other Facts:	<ol style="list-style-type: none"> <li>1. The San Dieguito River watershed is a drainage area of approximately 346 square miles in west-central San Diego County.</li>   <li>2. The current watershed population is approximately 125,000 however; this level is projected increase to over 210,000 residents by 2015. . In the absence of a comprehensive watershed planning effort, large-scale future development may exasperate current water quality problems and create additional beneficial use impairments.</li>   <li>3. The watershed extends through a diverse array of habitats from its eastern headwaters in the Volcan Mountains to the outlet at the San Dieguito Lagoon and the Pacific Ocean. There are several important natural areas within the watershed that sustain a number of threatened and endangered species. Among these are the 55-mile long, 80,000 acre San Dieguito River Park, the 150 acre San Dieguito Lagoon, and five water storage reservoirs including Lake Hodges, Lake Sutherland, and Lake Poway.</li>   <li>4. The San Dieguito Lagoon is especially sensitive to the effects of pollutants and oxygen depletion due to restricted or intermittent tidal flushing.</li> </ol>

(Information adapted from <http://www.projectcleanwater.org>)

# San Dieguito Watershed



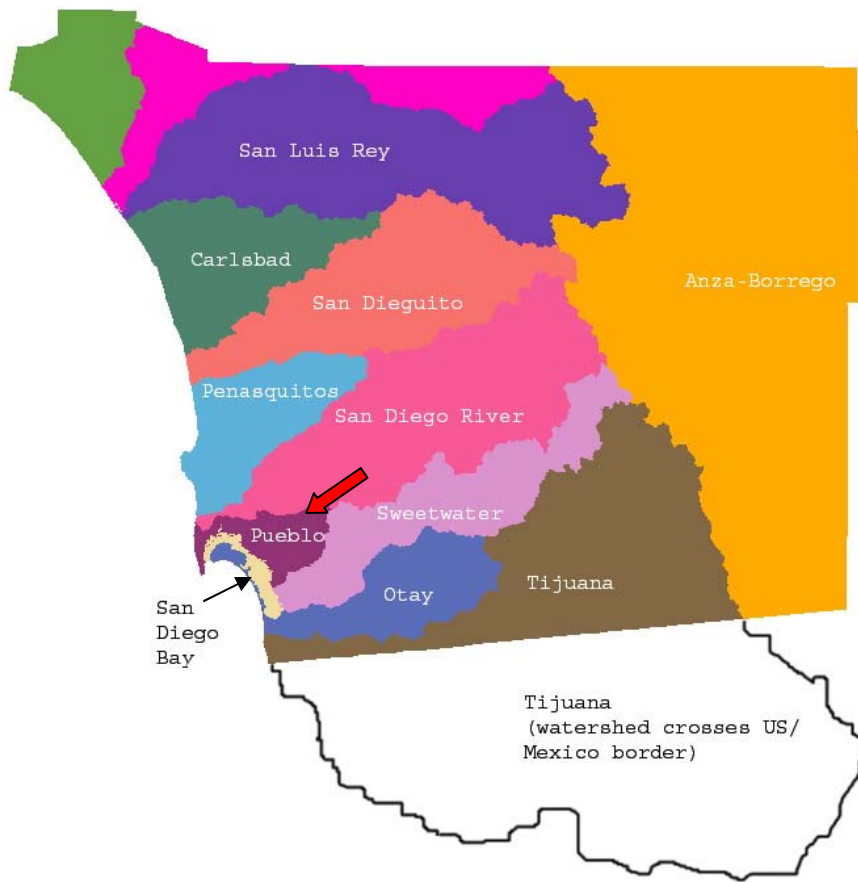
Watershed map showing major water features and topography

## Pueblo Watershed

Major Water Bodies:	Chollas Creek, Paleta Creek, and San Diego Bay
CWA 303(d) List:	Chollas Creek: copper, lead, zinc, cadmium, coliform bacteria, stormwater toxicity, San Diego Bay: coliform bacteria, benthic community effects, copper, sediment toxicity
Areas of Concern:	trace metals and other toxic substances, and coliform bacteria
Sources of Problems:	urban runoff
Human Population:	500,000
Cities in Watershed:	San Diego, La Mesa, Lemon Grove, and National City
Important hydrologic resources:	
Major Issues/Problems:	Surface water quality degradation, habitat degradation, sediment toxicity in San Diego Bay, and sewer overflows
Land Use:	Approximately 75% of the watershed is developed, including residential (45%), retail/ office (11%), and industrial land uses (10%). In addition, there are relatively large percentages of land used for transportation corridors and highways.
Other Facts:	<ol style="list-style-type: none"> <li>1. The Pueblo San Diego watershed is the smallest in San Diego County, encompassing approximately 60 square miles.</li> <li>2. Five sites in San Diego Bay that are impacted by runoff from the Pueblo San Diego watershed have been identified as hot spots by California's Bay Protection Toxic Cleanup Program.</li> <li>3. The watershed drainage consists of a group of relatively small local creeks and pipe conveyances, many of which are concrete-lined and drain directly into San Diego Bay. The creeks in the watershed are highly impacted by urban runoff, and Chollas Creek and the mouth of the creek in San Diego Bay are listed as 303(d)-impaired water bodies for various trace metals parameters and aquatic toxicity.</li> </ol>

(Information adapted from <http://www.projectcleanwater.org>)

# Pueblo Watershed



Watershed map showing major water features and topography

## Sweetwater Watershed

Major Water Bodies:	Sweetwater River, Sweetwater Reservoir, Loveland Reservoir, and San Diego Bay
CWA 303(d) List:	San Diego Bay/ Telegraph Creek: coliform bacteria
Areas of Concern:	coliform bacteria, trace metals and other toxics
Sources of Problems:	Agricultural and urban runoff
Human Population:	500,000
Cities in Watershed:	San Diego, La Mesa, Lemon Grove, National City, Pine Valley, Descanso, Alpine, Viejas Indian Reservation
Important hydrologic resources:	Reservoirs
Major Issues/Problems:	Surface and groundwater quality degradation, habitat degradation and loss, and invasive species
Land Use:	The dominant land uses in the Sweetwater River watershed are urban (29%), open space/ agriculture (22%), and undeveloped (49%). Approximately two-thirds of the land area categorized as urban is composed of residential communities.
Other Facts:	<ol style="list-style-type: none"> <li>1. The Sweetwater watershed covers approximately 230 square miles.</li> <li>2. Approximately 300,000 people currently reside within the Sweetwater River watershed, and this amount is projected to increase to 365,000 by 2015.</li> <li>3. The most important watershed issues are related to the protection of municipal water supplies, and the protection and restoration of sensitive wetland and wildlife habitats. Between the headwaters and the outlet to San Diego Bay, the watershed contains a variety of habitat types including oak and pine woodlands, riparian forest, chaparral, coastal sage scrub, and coastal salt marsh. The upper watershed contains large undeveloped areas within the Cleveland National Forest and Cuyamaca Rancho State Park.</li> </ol>

(Information adapted from <http://www.projectcleanwater.org>)

# Sweetwater Watershed



Watershed map showing major water features and topography

## San Diego River Watershed

Major Water Bodies:	San Diego River, El Capitan Reservoir, San Vicente Reservoir, Lake Murray, Boulder Creek, Santee Lakes
CWA 303(d) List:	Pacific Ocean at San Diego River mouth: coliform bacteria
Areas of Concern:	Coliform bacteria, TDS, nutrients, petroleum chemicals, toxics, and trash
Sources of Problems:	Urban runoff, agricultural runoff, mining operations, sewage spills, and sand mining
Human Population:	475,000
Cities in Watershed:	San Diego, El Cajon, La Mesa, Poway, and Santee and several unincorporated areas
Important hydrologic resources:	Five water storage reservoirs, a large groundwater aquifer, extensive riparian (river) habitat, coastal wetlands, and tidepools.
Major Issues/Problems:	Surface water quality degradation, habitat degradation and loss, sediment, invasive species, eutrophication
Land Use:	58.4% of the San Diego River watershed is currently undeveloped. The majority of this undeveloped land is in the upper, eastern portion of the watershed, while the lower reaches are more highly urbanized with residential (14.9%), freeways and roads (5.5%), and commercial/ industrial (4.2%) land uses
Other Facts:	<p>1. The five reservoirs in the San Diego River watershed supply water to as many as 760,000 residents in San Diego.</p> <p>2. Areas such as Cleveland National Forest, Mission Trails Regional Park, and the river flood plain near Lakeside represent three important undeveloped areas that host a wide variety of intact habitats and endangered species like the arroyo toad, least bell's vireo, and the southwestern pond turtle. In addition, Famosa Slough, near the mouth of the San Diego River contains extremely productive wetlands habitat.</p> <p>3. The mouth of the San Diego river discharges into the Pacific Ocean at the community of Ocean Beach. Beach postings and closures from elevated levels of coliform bacteria more than doubled between 1996 and 1999 due to urban runoff and sewage spills. Discharge from the San Diego River outlet may also influence water quality in other nearby coastal areas including Sunset Cliffs, Pacific Beach, and Mission Beach.</p>

(Information adapted from <http://www.projectcleanwater.org>)

# San Diego River Watershed



Watershed map showing major water features and topography

## Otay Watershed

Major Water Bodies:	Upper and Lower Otay Reservoirs, Otay River, San Diego Bay
CWA 303(d) List:	Pacific Ocean (Coronado): coliform bacteria
Areas of Concern:	coliform bacteria, trace metals and other toxic constituents
Sources of Problems:	urban runoff, agricultural runoff, resource extraction, septic systems, marinas and boating activities
Human Population:	150,000
Cities in Watershed:	Chula Vista, Imperial Beach, Coronado, National City, and San Diego
Important hydrologic resources:	Upper and Lower Otay Lakes are two water supply reservoirs that also provide important habitat and recreational opportunities.
Major Issues/Problems:	Surface and groundwater quality degradation, habitat degradation and loss, and invasive species
Land Use:	The predominant land uses in the watershed are open space (67%) and urban/ residential (20%).
Other Facts:	<ol style="list-style-type: none"> <li>1. The Otay River watershed encompasses approximately 160 square miles in southwest San Diego County and is one of the three watersheds that discharge to San Diego Bay.</li> <li>2. Approximately 36 square miles of the watershed is part of the Multiple Species Conservation Plan effort that provides habitat for a wide range of endangered plant and animal species. Other important conservation areas within the watershed include the San Diego National Wildlife Refuge, the Rancho Jamul Ecological Reserve, and the vernal pool lands in the region.</li> <li>3. The current population in the Otay River watershed is approximately 150,000 people. At the present time, serious water quality problems are limited to the presence of elevated coliform bacteria in the Pacific Ocean receiving waters near Coronado. However, an expected population increase of 88% from 1998 – 2015 will substantially increase the volume of urban runoff in the watershed, and could significantly alter the present water quality status. In the absence of effective watershed-based management, the natural resources of the Otay River watershed may be significantly degraded.</li> </ol>

(Information adapted from <http://www.projectcleanwater.org>)

# Otay Watershed



Watershed map showing major water features and topography