Southern California Wetlands Recovery Project

Celebrating Fifteen Years

15

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT

WRP Member Agencies

Federal Partners

National Marine Fisheries Service
Natural Resources Conservation Service
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

State Partners

California Natural Resources Agency
California Coastal Conservancy
California Department of Fish and Wildlife
California Department of Parks and Recreation
Wildlife Conservation Board
California Coastal Commission
State Lands Commission
California Environmental Protection Agency
State Water Resources Control Board
Central Coast Regional Water Quality Contol Board
Los Angeles Regional Water Quality Contol Board
Santa Ana Regional Water Quality Contol Board
San Diego Regional Water Quality Contol Board

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CONTENTS

Cover photos
Main image: Tijauna Estuary
Inset photos, left to right: Ocean Discovery Institute; Carpinteria Creek, South Coast Habitat Restoration; Plover photo credit Hartmut Walter

Dear Friends:

We are thrilled to be celebrating the accomplishments of the Southern California Wetlands Recovery Project (WRP) since its inception in 1997. To those agencies and scientists who established the WRP, helped develop and manage the projects funded by the WRP, provided matching funds or support, or simply enjoyed a restored watershed or wetland, we say Thank You!

The Board of Governors, which acts as the overarching policy making body for the WRP, and the Coastal Conservancy, which provides staff support for the WRP, are proud of the astounding achievements over the years. This report outlines major accomplishments the WRP has achieved throughout the Southern California Bight and highlights some exemplary restoration projects.

The WRP is a novel, collaborative, and broad-based partnership of 18 state and federal agency Partners. We have been successful in working in concert with scientists, local governments, environmental organizations, business leaders, and educators over the years. Our collaborators outside the defined 18-agency partnership have included land trusts, cities and counties, fellow state agencies, federal resource agencies, environmental and community organizations, private foundations, local universities, elected leaders and the general public. Working together, we have implemented projects that benefit the people and wildlife of Southern California.

John Laird
Secretary
Natural Resources Agency

Samuel Schuchat
Executive Officer
Coastal Conservancy

U.S. Fish and Wildlife Service

Elegant Tern Colony Saltworks San Diego Bay

Who We Are

The Southern California Wetlands Recovery Project (WRP) is a unique partnership, chaired by the California Resources Agency and supported by the State Coastal Conservancy. Through the WRP, public agencies, scientists, and local communities work cooperatively to acquire and restore wetlands in coastal Southern California.

The WRP's geographic scope is from Point Conception in Santa Barbara County to the international border with Mexico. Using a non-regulatory approach and an ecosystem-based perspective, the WRP works together to identify wetland acquisition and restoration priorities, prepare plans for these priority sites, pool funds to undertake these projects, implement priority plans, and oversee post-project maintenance and monitoring.

The goal of the WRP is to accelerate the pace, extent, and effectiveness of coastal wetland restoration through a regional prioritization plan for the acquisition, restoration and enhancement of Southern California's coastal wetlands and watersheds. The long-term vision of the WRP is to re-establish a mosaic of functioning wetland and riparian systems that supports a diversity of species, while also providing refuges for humans within the urban landscape.

The WRP is comprised of 18 partner state and federal agencies. Representatives from each of the partner agencies form the WRP Board of Governors. The Wetlands Managers Group, made up of staff from each of the partner agencies and representatives of other key stakeholder organizations, along with the Science Advisory Panel, conduct the oversight and implementation of WRP projects and research. A County Task Force in each of the five Southern California coastal counties provides local input to WRP priorities and projects.

The WRP was created in 1997 as a regional voice for the valuable coastal wetland resources of Southern California and began its first projects in 1999, 15 years ago. Prior to the creation of the WRP, there was little regional coordination or communication among public agencies, nonprofit organizations and community members who had a vested interest in Southern California's wetlands. Many people held little hope for the wetlands that remained in the rapidly developing region of Southern California.

In this publication we celebrate the many projects and accomplishments of the WRP over the past 15 years of on the ground projects, research and education.

Since 2000, there has been unprecedented state investment in natural resources and the WRP has benefited from these investments. Two significant projects, the restoration of Bolsa Chica Wetlands ($144 million) and the acquisition of the Ballona Wetlands ($140 million) received $284 million of the total project funds. The Port of Los Angeles provided $40 million and the Port of Long Beach provided $50 million to the Bolsa Chica restoration project in exchange for mitigation credit.

Of the remaining projects, the majority of the funding came from State agencies. This funding has primarily come from statewide bond measures, including Proposition 12, Proposition 13, Proposition 40, Proposition 50 and Proposition 84.

Hartmut Walter

WETLAND PROJECTS

ACRES	13,130
Total acres restored:	4,884
Total acres acquired:	8,246

FUNDING	$631,324,722
Total restoration funds:	$301,984,228
Total acquisition funds:	$300,384,477
Total planning funds:	$ 28,956,017

FIFTEEN YEARS MORE THAN 200 PROJECTS

The WRP has completed 206 wetlands projects over the past 15 years and has 85 active projects underway. These projects consist of a variety of acquisition, restoration and habitat enhancement projects that range in size from a few acres to large scale projects that encompass hundreds of acres. Projects on the WRP Work Plan, approved annually by the Board of Governors, are larger projects ranging from $50,000 to multimillion dollar projects. Projects of the Community Wetlands Restoration Grants Program (CWRGP) are small scale projects with grants up to $30,000 that are designed to be completed in one or two years.

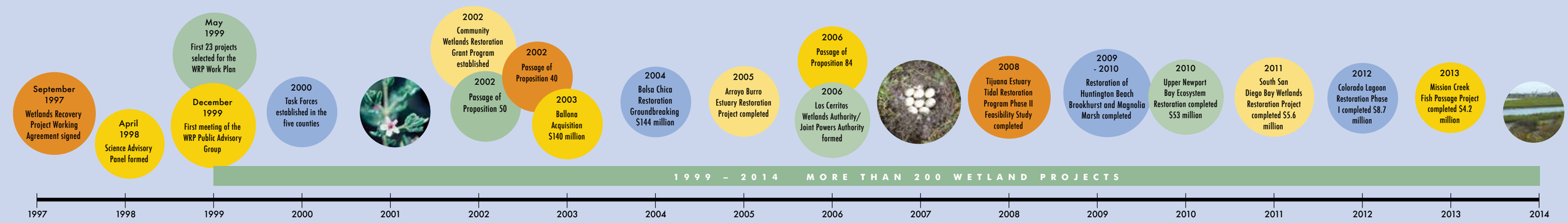
WRP Work Plan

The WRP Work Plan is the list of priority wetland acquisition, restoration and enhancement projects. The Work Plan is reviewed by the various branches of the WRP including the County Task Forces and the Wetland Managers Group, and is adopted by the Board of Governors. Projects on the Work Plan must be consistent with the priorities and strategies in the WRP Regional Strategy for Wetland Recovery. WRP partner agencies use the WRP Work Plan to identify potential projects for available grant funds. In addition, the WRP works to help identify other sources of project funding for Work Plan projects.

Community Wetlands Restoration Grant Program

The CWRGP provides funding for community-based restoration projects in coastal wetlands and watersheds in the region. The purpose of the program is to further the goals of the WRP Regional Strategy; build local capacity to plan and implement wetland restoration projects; promote community involvement in wetland restoration activities; and foster education about wetland ecosystems. Grants of up to $30,000 are awarded. The program is administered by Earth Island Institute in coordination with the Coastal Conservancy. Nonprofit organizations, tribes and local agencies are eligible to apply. CWRGP grants are awarded on an annual basis.

Over the past 15 years more than $631 million has been invested in 206 wetlands projects. The State of California has contributed more than half of that funding. This includes $2.5 million for 112 CWRGP projects.



Tidal Wetlands

South San Diego Bay Willets and Pickleweed

U.S. Fish and Wildlife Service

The long-term objective of the Southern California Wetlands Recovery Project is to re-establish a mosaic of fully functioning wetlands systems,

with a diversity of habitat types and connections to upland communities, which preserves and recovers self-sustaining populations of species. Southern California's coastal wetlands are among the most productive habitats on the Pacific coast. The wetlands provide habitat for hundreds of fish and wildlife species, including feeding and nesting habitat for migratory birds on the Pacific Flyway and habitat and food chain support for commercial and recreational fisheries. Restoration of tidal wetlands is a primary goal of the WRP.

South San Diego Bay

The South San Diego Bay Wetlands Restoration Project restored approximately 257 acres of coastal wetlands in the southwest corner of San Diego Bay. In September 2011 two former salt ponds were opened once again to the tides, after being converted from salt marsh approximately 50 years ago, and closed off from the bay. More than 70 percent of San Diego Bay's coastal salt marsh habitats were lost over the past 150 years from dredging and filling to accommodate maritime and urban development. Prior to restoration, the salt ponds had very low diversity and abundance of fish and other marine species due to poor water quality in the ponds.

The restoration of coastal salt marsh was achieved by removing and redistributing sediment to restore appropriate tidal elevations and create channels in the ponds and then breaching the levees to restore tidal circulation. The restoration areas were then planted with native salt marsh vegetation.

The San Diego Bay's coastal habitats support seven federally or state listed threatened and endangered species, tens of thousands of migratory birds that travel along the Pacific Flyway, and a diverse array of commercially and recreationally important fish. Coastal marshes will play an increasingly important role in buffering our coastline and communities from the impacts of sea level rise and climate change. Projects such as the South San Diego Bay Wetlands Restoration will reverse some of the damage that has been done, increasing the region's resilience in the face of climate change and improving water quality in San Diego Bay.

Amanda Bird

Upper Newport Bay Eelgrass Planting

Huntington Beach Wetlands Construction

Upper Newport Bay

Upper Newport Bay is the largest functioning full tidal wetland in Southern California. The California Department of Fish and Wildlife manages 752 acres of the Upper Bay as an ecological reserve that provides valuable habitat for a diverse array of migratory and resident birds, fish, vertebrates, invertebrates and plants. The threatened and endangered species that use the bay include the brown pelican, California black rail, light-footed clapper rail, western snowy plover, California least tern, coastal California gnatcatcher, Belding's savannah sparrow and plant species such as salt marsh bird's beak. The principal threat to fish and wildlife habitat in Upper Newport Bay is from excessive sediment and nutrients delivered from upstream, particularly from San Diego Creek, which drains 85 percent of the bay's watershed.

The Upper Newport Bay Ecosystem Restoration Project addressed the impacts of habitat conversion resulting from sedimentation in the upper bay by dredging 2.1 million cubic yards of sediment and enhancing salt marsh and mudflat habitats around the bay for a total project cost of $53.3 million.

The project was developed by the U.S. Army Corps of Engineers and the County of Orange in cooperation with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, and Santa Ana Regional Water Quality Control Board.

The Upper Newport Bay Eelgrass Restoration Project is addressing another critical issue for the bay. In the soft-bottom, subtidal areas within Upper Newport Bay, the submerged plant, Zostera marina (eelgrass), is threatened. Eelgrass is known as an ecosystem engineer because of its ability to provide structure, food, refuge and water quality benefits to subtidal species. Eelgrass is sensitive to decreases in light availability and with increased human populations and activities in the Upper Newport Bay, the excessive nutrient concentrations and increased water turbidity conditions are favoring algal blooms rather than eelgrass populations. In June 2012, the Orange County Coastkeeper and Coastal Resources Management Inc. transplanted and seeded a total of 236 m^2 of eelgrass on unvegetated mudflat habitat along the main channel side of the DeAnza Marsh Peninsula. After refining planting methodologies, a second round of transplants occurred in July 2013 (200 m^2). The project team has been monitoring water quality and eelgrass growth since and has documented an overall expansion of eelgrass habitat with a total of 1.4 acres across the project sites.

Huntington Beach Wetlands

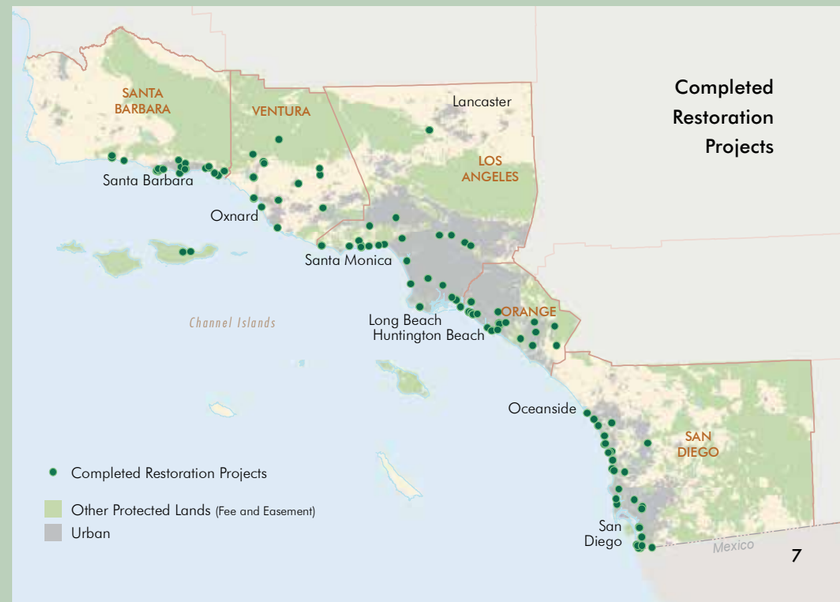
The Huntington Beach Wetlands comprise approximately 190 acres of salt marsh, seasonal wetlands and coastal dune habitat. Approximately 150 acres of the wetlands have been restored with the 40-plus acre Newland Marsh yet to be restored.

In 2006, with funding from the Coastal Conservancy, the Huntington Beach Wetlands Conservancy completed a conceptual restoration plan for the Huntington Beach wetlands ecosystem from Beach Boulevard to the Santa Ana River. The plan evaluated the engineering, ecological and economical feasibility of wetland restoration alternatives within the Huntington Beach Wetlands and developed a framework for a coordinated restoration program. Development of the restoration plan was overseen by a multi-agency team of federal, state and local partners.

Mitigation funds were secured to complete the engineering and environmental compliance to prepare for restoration. Construction began in 2008 with funding from the mitigation sources and the Wildlife Conservation Board. Additionally, Coastal Conservancy funded projects include the acquisition of 16.6 acres owned by the University of California, Riverside (completed spring 2008) and

WHY WETLAND RESTORATION IS IMPORTANT

Wetlands are valued worldwide for the many benefits they provide. They help regulate climate, store surface water, control pollution and flooding, replenish aquifers, promote nutrient cycling, protect shorelines, maintain natural communities of plants and animals, serve as critical nursery areas, and provide opportunities for education and recreation. Despite these vital services, wetlands have not always been appreciated. Throughout most of recorded world history, wetlands were regarded as wastelands and problem areas to be drained or filled. Wetlands tend to form on flat lands that are easily developed if adequately drained. Most of the wetlands that existed in California at the time of statehood were lost within the following hundred years. These drastic losses of wetland form and function have spawned an era of much-needed wetland restoration. While studying historical wetland functions is a key tool needed to guide restoration efforts, the Wetlands Recovery Project is dedicated to restoring wetlands that can sustain the current and future landscapes of Southern California. By cultivating resilient wetlands on a landscape scale, the WRP hopes to return the economic, environmental and recreational benefits of wetlands to Southern California human society.



Tidal Wetlands

construction of the Wetlands Education and Wildlife Care Center at the Huntington Beach Wetlands (completed spring 2008). Construction of recreation access trails (funded) and acquisition and restoration of Newland Marsh are the anticipated next steps of restoration.

Bolsa Chica Wetlands

The Bolsa Chica Wetlands are located in Orange County, surrounded by the City of Huntington Beach. This project is one of the largest wetland restoration projects to be constructed in Southern California. Tidal influence was restored to approximately 370 acres of wetland habitat. The project also improved muted tidal circulation to 200 acres, retained 120 acres of seasonal pond habitat, and reserved 252 acres for future full tidal restoration when oil field operations terminate in 15-20 years. Most of the area had been isolated from the Pacific Ocean since 1900, and was used for oil production for the past 65 years.

Project elements included buying out certain oil production facilities, recreating a tidal channel and stabilizing it with short jetties, pre-filling an offshore sandbar and augmenting the volume of beach sand, dredging a tidal basin, bolstering perimeter levees, installing a French drain and pump system, forming upland islands, improving culverts between the new tidal basin and muted tidal area, building a bridge on Pacific Coast Highway (including pedestrian and bicycle lanes separate from vehicle traffic lanes) and an oil field access bridge to span the new tidal channel, and setting aside an endowment for operation and maintenance.

Malibu Lagoon

The Malibu Lagoon Restoration and Enhancement Plan provided a comprehensive approach to restore and enhance the ecological structure and function of Malibu Lagoon, as well as to enhance the visitor's experience through improvements to public access, recreation and education. Stakeholder involvement was integral to the development of the Enhancement Plan. The project was a collaborative effort among the California State Department of Parks and Recreation, Coastal Conservancy, Lagoon Technical Advisory Committee, and Lagoon Restoration Working Group led by the nonprofit partner, Heal the Bay. The final enhancement plan was completed on June 2005 and subsequently implemented in two phases.

Phase 1 focused on water quality improvement by addressing the runoff flows into the lagoon that contributed to poor lagoon water quality. Phase 1 included relocation and redesign of the existing parking lot to maximize available wetland habitat area for restoration in Phase 2, and provided water quality benefits with a low impact design for the new parking lot including a crushed shale surface and native plant swales.

Phase 2 focused on wetland habitat restoration by recontouring the three western lagoon channels into a singular meandering channel more consistent with natural marsh hydrology with a reoriented connection to the main lagoon to allow for better exchange of flows into and out of the western complex. Islands were also created to enhance avian habitat and reduce predator encroachment. Along the edge of the main lagoon, the multi-bridge path was demolished to allow for improved circulation and flushing by removing physical barriers to flow and increasing the wind fetch across the lagoon. Removing the path bisecting the lagoon also reduced wildlife disturbance caused by humans and predators penetrating the lagoon's interior. In the main lagoon channel, native trees which were removed from another location on site were re-used, placed as snags to create additional subsurface habitat for sensitive fish species. All disturbed areas were replanted with native wetland and upland species as appropriate. More than 68,000 native plants were planted to complete the restoration.

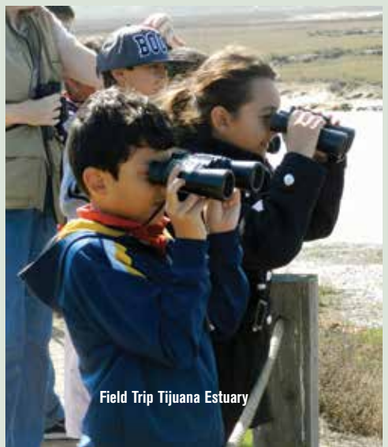
Both phases included improvements to the public access and recreational uses onsite. In addition, a comprehensive biological and water quality monitoring plan was developed to assess the water quality improvement and habitat restoration enhancement achieved by the two phases. State Parks, as the lead agency under CEQA, adopted the Final EIR for both phases of the plan in April 2006.

Carpinteria Salt Marsh

Goals of the Carpinteria Salt Marsh Restoration project were to restore 29 acres of wetlands, provide improved flood protection, and provide access to recreational trails to the public. The project was a continuation of a 20-year successful partnership at the Carpinteria Salt Marsh among the Coastal Conservancy, Santa Barbara Land Trust, U.S. Fish and Wildlife Service, University of California Reserve System, Santa Barbara County Flood Control District, City of Carpinteria, and the community.

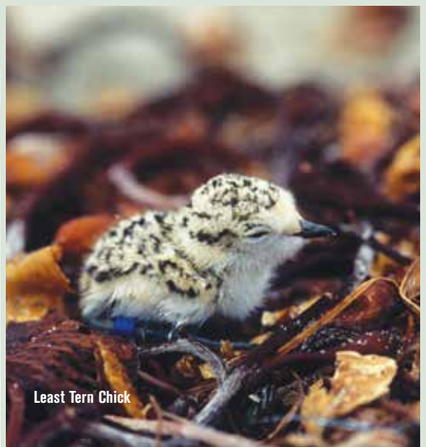
The $2-million-plus project was completed in March 2008. Major elements of the project included excavation of 22,000 cubic yards of sediment to reestablish tidal channels, removal of obsolete berms, and opening the mouth inlet to promote sediment flushing and improve tidal circulation. Six thousand cubic yards of the sediment also was used for beach nourishment. Additionally, nonnative vegetation and trash was removed from the site and approximately 17,000 native plants were planted. The project also constructed a new 90-foot steel truss pedestrian footbridge across Franklin Creek, to connect the Land Trust preserve to the City of Carpinteria's Salt Marsh Nature Park. Trails now lead the public to a 1,200-foot interpretive path on the Land Trust preserve.


Plants for South San Diego Bay


Field Trip Tijuana Estuary


Bolsa Chica Wetlands Snowy Egrets


Bolsa Chica


Phil Roullard
Least Tern Chick

"Through the Wetlands Recovery Project's remarkable partnership, WCB has complete confidence that the best available conservation science and the widest possible collaboration are being utilized in developing wetland projects on California's south coast."

John P. Donnelley
Executive Director
Wildlife Conservation Board

Urban Streams and Wetlands

Streams and wetlands in urban settungs face many unique challenges.

Urban run-off due to impervious surfaces within the watershed alters hydrologic regimes and increases nonpoint source pollution entering the waterways. Trash, channelization and burying streams and creeks in subsurface pipes can erase these resources from our collective memories. By looking back at the historical record, and through the vision and planning of committed organizations and individuals, we can begin to recover some of what has been lost or forgotten.

Colorado Lagoon

Colorado Lagoon is a 15-acre tidal lagoon in the City of Long Beach and is connected to Alamitos Bay and the Pacific Ocean through a tidal box culvert to Marine Stadium. Swimming, fishing, picnicking and wildlife viewing are popular recreational activities at the lagoon.

Since the lagoon is a natural low point in the watershed, it has historically accumulated pollutants deposited over the entire watershed that are washed into the storm drains by storm flows and dry weather runoff. The Colorado Lagoon Restoration project achieved treatment and disposal of contaminated sediments from the West Arm of Colorado Lagoon, a 44-acre saltwater lagoon connected to Alamitos Bay. Phase I of the project was completed in August 2012. Phase I consisted dredging and removal of 33,000 cubic yards of sediment, re-contouring lagoon banks, diverting low-flow runoff, installing trash collection levies, creating two vegetated bioswales, clearing tidal culverts, demolishing the northern paved parking lot, re-vegetating the former parking area, constructing public trails, and replacing an observation pier.

Phase II will expand the existing lagoon by cutting back the north shore area, creating more subtidal and intertidal habitat with potential for eelgrass colonization. Further, the lagoon will be reconnected to tidal action by excavating a portion of East Colorado Street.

Las Flores Creek

The Las Flores Creek Restoration is bounded by Pacific Coast Highway on the south, Rambla Pacifico on the west, and Las Flores Canyon Road. The Las Flores Canyon watershed is a 2,646-acre coastal watershed of Santa Monica Bay located on the southeastern flank of the Santa Monica Mountains.

The Las Flores Canyon Creek Restoration project improved channel stability, protecting the emergent wetland downstream and increased potential habitat for steelhead trout and other native species along 2,400 feet of the creek. The project included grading the flood plain terrace and installing rock weirs for improved in-stream habitat and channel stability. In-stream habitat features expanded the number of pools available to steelhead trout and created larger pools. Improved passage, resting pools and escape cover also provides for potential movement of steelhead to larger upstream spawning pools. The project also installed biotechnical bank stabilizing vegetated rock revetments to protect against sediment loading and landslides. Restoration included removal of the invasive exotic plant species Arundo donax. The project preserved and expanded the native tree canopy to improve in-stream and riparian habitat, and the project area was planted with native species to restore cover, vegetative structure and increase native diversity.

Coyote Creek and Carbon Creek Watershed Feasibility Study

The Coyote Creek and Carbon Creek Watershed Feasibility Study exemplified the challenges of working in highly urbanized environments. This cooperative effort between the U.S. Army Corps of Engineers and the County of Orange included 10 Orange County cities, the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, the Los Angeles and Orange County sanitation districts and the County of Los Angeles Department of Public Works, representing all the Los Angeles County cities in the Coyote Creek Watershed.

The multi-objective watershed feasibility study addressed water quality problems, habitat restoration, recreational improvements and storm water management. The study further examined increasing the quantity and quality of wetland and riparian habitats in the watersheds, reducing the concentrations of ammonia and silver, coliform, and algae in the watersheds, restoring beneficial uses, increasing passive and active recreation opportunities, improving beach nourishment opportunities, and other public objectives.

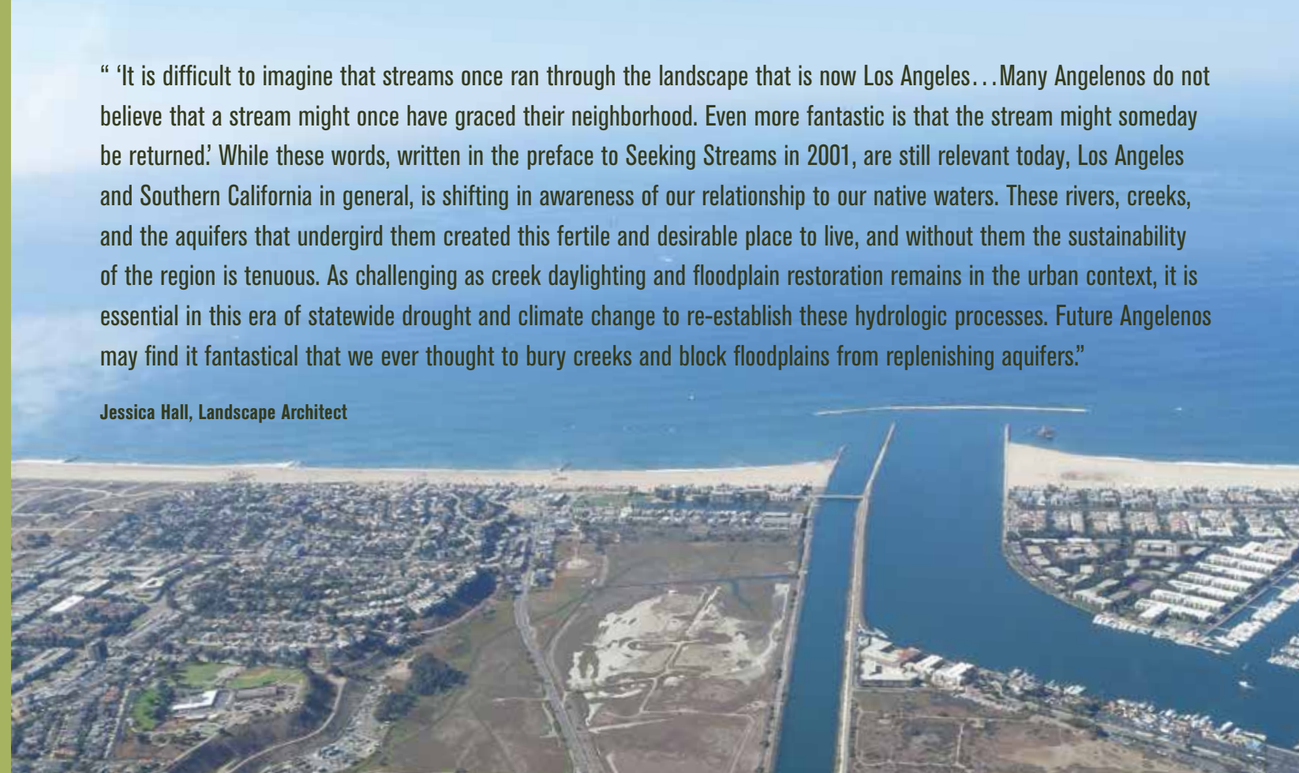
Taylor Parker

Colorado Lagoon

Chollas Creek

" 'It is difficult to imagine that streams once ran through the landscape that is now Los Angeles…Many Angelenos do not believe that a stream might once have graced their neighborhood. Even more fantastic is that the stream might someday be returned.' While these words, written in the preface to Seeking Streams in 2001, are still relevant today, Los Angeles and Southern California in general, is shifting in awareness of our relationship to our native waters. These rivers, creeks, and the aquifers that undergird them created this fertile and desirable place to live, and without them the sustainability of the region is tenuous. As challenging as creek daylighting and floodplain restoration remains in the urban context, it is essential in this era of statewide drought and climate change to re-establish these hydrologic processes. Future Angelenos may find it fantastical that we ever thought to bury creeks and block floodplains from replenishing aquifers."

Jessica Hall, Landscape Architect



Ballona Wetlands

Ocean Discovery Institute

Salicornia

Community-Based Projects

The Community Wetland Restoration Grant Program (CWRGP) is a program of the WRP jointly managed by the State Coastal Conservancy and Earth Island Institute.

The program provides annual funding for community-based restoration projects in coastal wetlands and riparian corridors in the Southern California Bight.

The CWRGP helps to further the goals of the WRP Regional Strategy in several ways. The program builds local capacity to plan and implement wetland restoration projects, promotes community involvement in wetland restoration activities, and fosters education about wetland ecosystems. Projects funded through the program must include strong educational and community involvement components, and are designed to be completed in a year or two.

Each year, CWRGP solicits proposals from nonprofit organizations, university departments, local government agencies and other eligible organizations. Proposals are reviewed by a technical advisory committee that includes staff from the State Coastal Conservancy, Earth Island Institute, the Wildlife Conservation Board, and other WRP partner agencies. CWRGP typically funds 10 to 12 projects per year. Over the past 15 years, the CWRGP has provided funding to 142 community-based projects.

Zedler Marsh Meadows and Hellman Lowlands Restoration Project

This project, lead by Los Cerritos Wetlands Land Trust, expanded the community-based restoration efforts at Los Cerritos Wetlands to the newly purchased Hellman Ranch Lowlands. The project restored the native plant community in 6 acres of alkali meadow in the Zedler Marsh restoration area. This work was incorporated into a public program focused on wetlands education, community outreach, stewardship and conservation for the continued and long-term preservation and enhancement of Los Cerritos Wetlands. The project installed coastal wetlands vegetation, controlled non-native plant species, removed thousands of pounds of debris, conserved rare plant populations, propagated wetlands plant species and introduced non-traditional environmental constituents to these urban wetlands.

Devereux Slough Margin Enhancement Project

This project, led by the Santa Barbara Audubon Society, enhanced the slough margin at Coal Oil Point Reserve by removing invasive plant species, primarily iceplant and New Zealand spinach, from approximately 8 acres of wetland habitat. The project site was then planted with native plant species. Taking advantage of the project location being close to the University of California, Santa Barbara, the project utilized the volunteer help of 21 undergraduate interns and approximately 63 community volunteers.

Invasive Removal in Bell Creek

The Audubon Society at Starr Ranch organized community volunteers to remove periwinkle, smilo grass, and English ivy from a 1.5-acre work area in Bell Creek, a tributary of San Juan Creek in Orange County. Volunteer groups were named "Weed Warriors" and consisted of families, scout troops, a high school National Honor Society group, and Cal State Fullerton Circle K International members. Volunteers came to Starr Ranch from Los Angeles, Riverside, San Diego and Orange counties. A crew of at-risk young adults from the Orange County Conservation Corps also removed olive and palm trees from the entire length of the 4.71 miles (125 acres) project area of Bell Creek.

Ormond Beach Native Plant Restoration

The goal of this project was to improve the quality of a coastal freshwater and brackish marsh and bordering back dune area at Ormond Beach in Ventura County. The project served as an experiential education tool for local elementary school and college groups. Depending upon the class level, students were involved in different aspects of the restoration process including permitting, habitat surveys and evaluation, creating plant lists, mapping the project area, obtaining seeds and cuttings, nursery cultivation and ultimately eradication of non-native, plant species.

Bell Creek

Emory Elementary, South Bay District

"Earth Island Institute is proud to be a funder and partner of the Community Wetland Restoration Grant Program. The program is achieving incredible grass-roots successes restoring wetlands in Southern California and reaching many diverse communities to become stewards of these ecosystems. It's exciting to see what a big difference this makes."

David Phillips, Executive Director, Earth Island Institute

Zedler Marsh

Tidal Influence

"We learned that we have to protect the wetlands because if we destroy them, we will be taking homes away from many animals."
Esmeralda

"I learned that the wetland soil holds water like a sponge."
Andrea

"I didn't get how to plant, but then on my 5th plant I started to get it. I planted 11 plants."
Ulysses

"Plants in the watershed help clean it. It's amazing!"
Miranda

Santa Barbara Audubon Society

Devereux Slough

Watershed Avengers

Watershed Avengers

Nallelis Family

Rivers and Streams

Rivers and streams throughout the WRP region provide critical habitat for many threatened and endangered species

including southern steelhead trout, California red-legged frogs, and many bird species. These riparian corridors also provide linkages for wildlife between coastal habitats and adjacent forest and mountain wilderness habitats. Many of these systems have been channelized and altered for flood control and water treatment purposed, overrun by invasive vegetation, and had hydrologic regimes destroyed by urban runoff. Restoring natural riparian systems and removing invasive plant species is another priority goal for the WRP.

Topanga Creek

The Topanga Creek Rodeo Grounds Berm Removal Project restored the natural floodplain, creek channel, and sediment transport functions at the southern end of Topanga Creek, approximately 2,500 feet upstream from the Pacific Ocean. The project enhanced habitat for endangered southern steelhead trout by improving fish passage opportunities and providing summer rearing habitat for juveniles. Topanga Creek is one of only three watersheds in the Santa Monica Bay with a reproducing population of these fishes. The total number of anadromous adults has plummeted since the 1960's and the current National Marine Fisheries Service population estimate is a total of 500.

State Parks purchased the project area in 2001 as part of a 1,600-acre acquisition in the lower Topanga Creek watershed. Residences were vacated and State Parks removed the structures prior to removal of the berm. In fall 2008, State Parks in cooperation with the Resource Conservation District of the Santa Monica Mountains removed the 1,000-foot-long, 30-foot-high berm from Lower Topanga Creek. The berm was installed without a permit by local residents following the 1980 flood. The berm was constructed on top of material deposited since the 1960s by residents fearful that heavy rains would swell the creek and flood their homes, disrupting the creek's 10-mile path to the ocean for over three decades. The project removed 19,000 cubic yards of soil, asphalt, concrete and car parts, weighing 27,880 tons (1,394 20 ton truckloads) and was able to recycle all of the material except 98 loads of lead contaminated fill.

The removal of the berm restored the creek for fish passage, opening up access for endangered steelhead trout to 3.3 miles of suitable habitat that was previously seasonally restricted due to the sub-surface flows associated with the berm. The project also restored 12 acres of riparian habitat. Native riparian species including willow, mule fat, alders, cottonwoods, sycamores and oaks were planted and non-native plants, including Arundo donax, were removed.

The berm removal was completed in 2008 and habitat restoration has been on-going with thousands of volunteer hours removing arundo and euphoria, planting natives and removing trash. On January 23, 2010, 11 smolts were found heading downstream to the ocean.

Upper Sulphur Creek

In 2006 the Upper Sulphur Creek Project restored approximately 7,900 linear feet (or 1.5 miles) of stream corridor along Upper Sulphur Creek in Orange County. The Coastal Conservancy, the City of Laguna Niguel, the State Water Resources Control Board, three homeowners associations, and several individual owners of land adjacent to Sulphur Creek worked in a partnership to mitigate biological and water quality impacts of intense urbanization.

The project included the removal of approximately 3,600 linear feet of concrete ditches to create a wider and natural soft bottom stream channel. Other project elements included creation of streamside terraces to enhance flood protection, removal of invasive and exotic species, revegetation with native plant species and pre- and post-construction biological and water quality monitoring.

The principle benefit to coastal resources of restoring more natural stream functions in this coastal watershed is improved water quality achieved by reducing erosion and sedimentation. The improved water quality serves to protect fish and wildlife habitat in coastal waters.

Starr Ranch Sanctuary

Bell Creek

Serrano Creek

Serrano Creek is a tributary to San Diego Creek draining an area of about 2,590 acres. San Diego Creek is a tributary to Upper Newport Bay whose wetland habitats have been degraded by excessive sediment flows. Serrano Creek has been a major contributor of sediment to Upper Newport Bay and during the 1997-1998 El Niño winter, an estimated 400,000 cubic yards of sediment eroded from the creek banks. Portions of the creek had 30 foot to 40 foot vertical banks.

The Serrano Creek Stabilization and Restoration Project planning phase was completed in 2004. Construction followed the planning phase in which 1.1 miles of Serrano Creek in the City of Lake Forest were stabilized through installation of several creek stabilization features coupled with a riparian restoration program. Project elements included rock grade stabilization structures, rock bank slope protection, weirs and extensive replanting of the creek edges and bank. The Serrano Creek Stabilization Project evolved out of a multi-year planning process among the City of Lake Forest, County of Orange and the Serrano Creek Conservancy. The planning process had significant involvement from the local community including several community workshops. The project was designed to balance flood management, habitat and recreation objectives. The project ultimately helped reduce sediment loadings to Newport Bay.

Cottonwood Creek

The Cottonwood Creek Park Restoration Project recreated approximately 2.4 acres of riparian habitat along one-quarter mile of stream corridor on Cottonwood and Moonlight creeks in northern San Diego County. The City of Encinitas took on the creek restoration as part of a larger effort to develop the 8 acre Cottonwood Creek Park. The project achieved three main goals: 1) restore and enhance riparian habitat along the two creeks; 2) improve water quality; and 3) provide educational opportunities for park visitors.

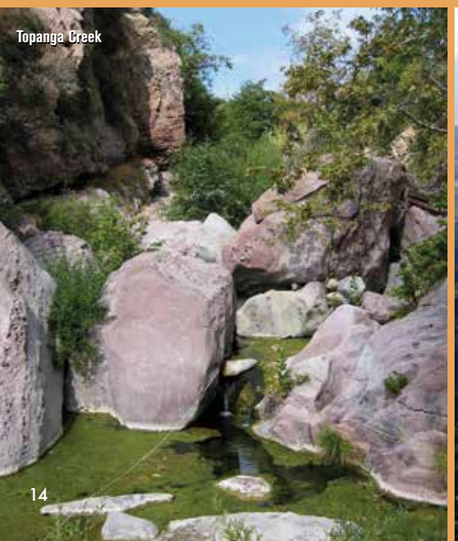
The project day-lighted approximately 650 feet of Cottonwood Creek returning the creek to the surface. Moonlight Creek was extended and now joins Cottonwood Creek in the southeast section of the park. The City of Encinitas also developed a variety of public outreach and education tools in conjunction with the creek restoration. Pamphlets and brochures about the stream restoration effort, water quality concerns and native habitat were distributed in the park. Interpretive signs have been installed and classroom demonstrations have been held in the restored area.

"Rivers and streams are the critical connections between the upper watershed and the ocean. They are the lifeblood of our local ecosystems, supporting a wide variety of aquatic plants and animals. The aquatic "freeways" needed by anadromous fish like steelhead only work when the rivers and streams are accessible and healthy. By investing in restoring these critical ecological links, the WRP has contributed substantially to protecting the future of these systems, but the ripple effects also contribute to the health and well being of the many millions of humans who also rely on these functioning systems. As the saying goes, "we all live downstream." The future of people in Southern California is directly tied to the future of our natural resources. The contributions of the WRP to restore and protect these resources has been a major benefit to us all."

Rosi Dagit, Senior Conservation Biologist
RCD of the Santa Monica Mountains

Orange County Public Works

Serrano Creek



Topanga Creek

Santa Clara River

Fish Passage

California's salmon, steelhead and other aquatic life depend on the health of our coastal rivers and streams.

Healthy streams provide cool water, clean gravel, natural meandering channels and access to upstream habitat. Almost every stream along the Southern California coast has been fragmented by roads, dams, culverts, concrete channels, low-water crossings or other structures that create difficult or impassable migration barriers for fish.

Carpinteria Creek

The Carpinteria Creek watershed has been a major focus of steelhead recovery efforts since the Carpinteria Creek Watershed Coalition was founded in 2001. The coalition and its member organizations spearheaded the creation of a watershed management plan. This led to completion of the first fish passage project in 2004. This was followed with four more projects completed in 2008. In total nine barriers have been removed or modified to allow fish passage.

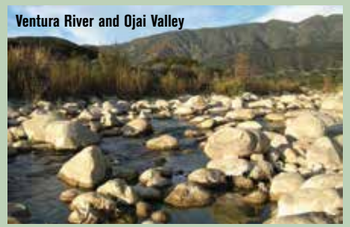
Led by South Coast Habitat Restoration, Carpinteria Creek steelhead recovery efforts have been successful to date as a result of the Carpinteria Creek Watershed Coalition members coming together and implementing the long-term vision of restoring steelhead access throughout the watershed.

More than 5 miles of high quality fish habitat has been opened for steelhead passage and spawning. One final barrier removal project is underway. The projects completed so far have included modification of a debris basin, creek bank stabilization, barrier removal and modification to allow passage and habitat restoration. Through completion of the above projects and the continued efforts of South Coast Habitat Restoration and WRP partners it is hoped this watershed will have a critical role in the recovery of southern steelhead.

Ventura River and Ojai Valley

The primary goals of the Ojai Valley Trail Fish Barrier Removal Project were to improve passage and instream habitat for endangered southern steelhead and public safety along the Ojai Valley Trail. The project site is located at the confluence of San Antonio Creek with the Ventura River, about 8 miles from the estuary. By removing an existing culvert and replacing it with a bridge set above the 100-year floodplain, the project improved steelhead passage to 15 miles of streams within the San Antonio Creek watershed. In addition, the new bridge provides a low maintenance, all-weather crossing over San Antonio Creek, improving user safety on the Ojai Valley Trail during high flows and minimizing storm-related closures of the trail along this segment.

The Ojai Valley Trail is a popular bicycle, equestrian, jogging and pedestrian path that runs along the Ventura River from Soule Park in Ojai to Foster Park in Ventura, where it



Ventura River and Ojai Valley

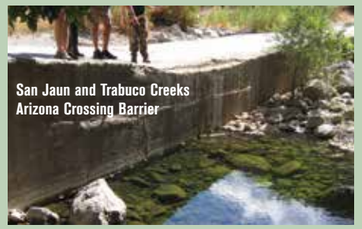
connects with the 6-mile Ventura River Trail to downtown Ventura, the estuary and the Coastal Trail.

During years with heavy rainfall the culvert filled with sediment and debris, causing the trail to flood continuously and blocking both steelhead passage as well as use of the trail by cyclists and pedestrians.

Mission Creek

The project implemented fish passage improvements in lower Mission Creek in Santa Barbara. The city modified the lower concrete flood control channel to improve conditions for southern steelhead to migrate upstream to access year-round water with suitable spawning habitat in the upper watershed.

The project created a low flow channel (fishway) and resting areas within the bed of the channel. The design slows down water flow and increases water depth within the channel to aid fish passage. The project opened up 3.9 miles of riparian habitat for steelhead, including approximately 2 miles of moderate- to high-quality spawning habitat, and was integral to the success of other fish passage projects on Mission Creek. The project also removed a complete barrier to fish migration, allowing steelhead to migrate upstream to spawn and reduced the threat of extirpation of this important species.



San Jaun and Trabuco Creeks
Arizona Crossing Barrier

Matilija Dam

The Matilija Dam Removal Project in Ventura County includes preliminary engineering and design for the removal of the Matilija Dam on the Ventura River. The project will restore fish passage to historic spawning and rearing habitat for southern steelhead in the upper watershed. It will also restore natural sediment transport downstream and improve sand replenishment at beaches along the coast. When the project is fully implemented, the Ventura River watershed and its related estuarine and ocean habitats offshore will more closely resemble historic conditions.

San Juan and Trabuco Creek

The San Juan and Trabuco Creek Steelhead Recovery Project in Orange County will implement the top three priority projects identified in the watershed's Management Plan. These include alteration of the Metrolink crossing of Trabuco Creek, assessment and restoration of the San Juan Creek Lagoon and restoration of a 3,000-foot long reach of Trabuco Creek including alteration of the stream structure and removal of exotic species.

Carpinteria Creek Bridge

San Jaun and Trabuco Creeks

Ed Henke with stringer
1946 Matilija Dam

Carpinteria Creek Fish Passage Barrier Survey

Mission Creek

Matilija Dam

Restoration Planning Projects

Based on a solid scientific foundation, best management practices and knowledge and experience of partner agency resource staff, the unique structure of the WRP builds a bridge between local planning and restoration priorities and regional recovery goals.

The WRP is advancing the science of restoration planning to incorporate historical ecology data, current condition and extent data, and models of how to account for climate change and future sea level and storm pattern scenarios.

San Elijo Lagoon

The goal of the San Elijo Lagoon Restoration Project in San Diego County is to enhance and restore the biological functions and values of the San Elijo Lagoon Reserve with a balance of habitat types. The San Elijo Lagoon has been dramatically altered over the years by transportation projects including the railroad, the Pacific Coast Highway and Interstate 5. These projects have constricted the tidal flow in the lagoon, which has had an impact on habitat types and species usage. The project will protect, restore and maintain the San Elijo Lagoon ecosystem and adjacent uplands to support native flora and fauna of Southern California, as well as restore and maintain estuarine and brackish marsh hydrology.

The final engineering phase of the project will add on to the completed technical studies, models and conceptual restoration designs needed to complete the draft EIR/EIS. The final plan development includes additional technical studies, completion of the Final EIR/EIS, completion of the 60 percent design plans, preparation of permit applications and establishing a scientific monitoring program.

Los Cerritos Wetlands

This project provides funds to Los Cerritos Wetlands Authority (LCWA) to complete a comprehensive conceptual plan for restoration of Los Cerritos Wetlands complex in Long Beach and Seal Beach. Los Cerritos is 519-acre mosaic of publicly and privately owned properties, land uses and resources located along Pacific Coast Highway and the lower reach of the San Gabriel River. LCWA is a joint powers authority among the Coastal Conservancy, Rivers and Mountains Conservancy, and the cities of Long Beach and Seal Beach. It has acquired approximately 170 acres of the wetlands complex in addition to 33 acres of wetlands owned by the City of Long Beach. LCWA wants to ensure that any near-term work will be compatible with restoration of adjacent properties that remain in private ownership but could someday be acquired and restored. As a result, all 519 acres of the complex will be included within the geographic scope of the plan.

The preliminary goals for the conceptual restoration plan are to: restore wetland processes and functions; maximize contiguous wetland areas and minimize the edge between wetlands and sources of disturbance; restore habitat for resident and migratory bird species along the Pacific Flyway; ensure the long-term viability and sustainability of the project in the face of such threats as urbanization and climate change; create a public access and interpretive program for a memorable visitor experience; and implement a program that will be practical and economically feasible.

Ormond Beach

The goal of the Ormond Beach Wetlands project in Ventura County is to acquire and restore at least 1,200 acres and integrate these wetlands with the 3,000-acre Mugu Lagoon dunes and wetlands complex. A restoration feasibility study has been completed evaluating options for restoring tidal action to portions of the property, restoring historic drainage patterns, and recreating a mix of tidal and seasonal wetlands with associated grasslands.

Public ownership will allow for restoration of most of the historic extent of the coastal lagoons and associated uplands that were there before conversion to industry and agriculture. The preferred alternative has been selected, which will restore historical lagoons, including related ecotones and grasslands, and allow room for shoreline transgression from sea level rise and storm erosion in accordance with climate change models. Ormond Beach is one of the only coastal wetlands in Southern California where sea level rise can occur without shrinking the wetland acreage due to the absence of confining development.

Ballona Wetlands

State and federal agencies and many other stakeholders are engaged in the planning process for the enhancement of 600 acres of the Ballona Wetlands owned and managed by the State of California. This is the largest coastal wetland restoration project in Los Angeles County. The restoration planning process involved extensive public outreach. More than 20 public meetings and workshops were held to receive input from and provide updates to stakeholders and interested parties. A Scientific Advisory Committee has been established to ensure that the restoration plan is based on the best available science. Five restoration scenarios were developed based upon input from more than 100 stakeholders.

In 2009, the Coastal Conservancy and its partners completed a restoration feasibility study that evaluated restoration alternatives. Through public, scientific and technical review, a preferred restoration option was selected. The restoration feasibility report and other project documents are available online at www.ballonarestoration.org. In 2010, the formal environmental review process for the proposed project began. The CA Department of Fish and Wildlife, with support from technical consultants, is preparing an Environmental Impact Report/Statement to evaluate the potential impacts of project alternatives.

Los Cerritos Creek

Taylor Parker

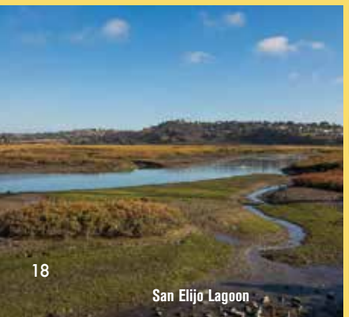
"Our long term partnership with the Wetlands Recovery Project and Coastal Conservancy has resulted in successful restoration and innovative research projects. The Conservancy has provided a solid foundation on which SWIA has built and enhanced relationships with research institutions, agencies and surrounding communities to further the recovery and protection of coastal wetlands."

Michael A. McCoy, President, Southwest Wetlands Interpretive Association

Tijuana Estuary

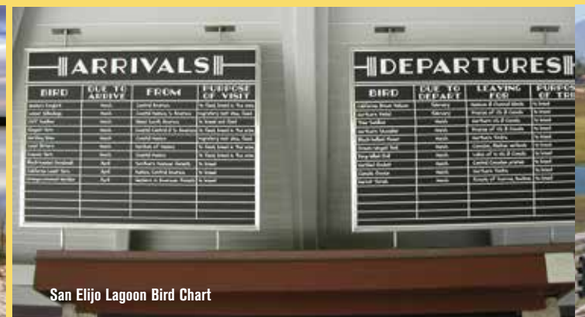
The Tijuana River and its estuary have faced disturbance due to human activities since the mid-19th century. Challenges have included diking, land filling and extended periods of sewage contamination. The Tijuana Estuary Tidal Restoration Program is a large, multi-phased wetland restoration program. The proposed 500 acres of restoration will restore valuable habitats by enhancing the tidal prism and flushing, improving water quality and managing sedimentation.

This project addresses critical planning needs for the continued adaptive restoration of the Tijuana River Estuary. This next project phase includes final design, engineering and permitting for the Tijuana Estuary Tidal Restoration Program, a long-term restoration program led by the Southwest Wetlands Interpretive Association and the Tijuana River National Estuarine Research Reserve. Planning for the project also includes development of a model for incorporating historical ecology, current condition data and future scenario planning to account for climate change and associated sea level rise. This project level planning tool will then be scaled up for application at a regional level to the WRP's geographic region.



San Elijo Lagoon

Ormond Beach



San Elijo Lagoon Bird Chart

Tijuana Estuary

Ballona Wetlands SMASH Filed Trip

Ballona

Acquisition Projects

Acquisition of property from willing sellers is one of the primary strategies to recover wetlands that the WRP employs.

Acquiring coastal wetlands and associated upland habitats that are primarily privately owned, and not subject to any conservation guarantees, is a high priority. Additionally, acquiring contiguous wetland and upland areas helps preserve entire wetland ecosystems and can provide space for the wetland to migrate in response to a rise in sea level. These preserved lands help provide spaces of refuge for humans and other species within the urban landscape.

Santa Monica Mountains

The Santa Monica Mountains lie within Los Angeles and Ventura counties. Acquisition of wetland and riparian areas throughout this region preserves and protects some of the last remaining undeveloped areas along the Southern California coast and establishes recreational space for the 13 million residents of the Los Angeles metropolitan area.

The WRP over the last 15 years has helped to acquire lands in the Santa Monica Mountains, including La Sierra Lake and Malibu Creek watershed (90 acres), Solstice Canyon (117 acres), Santa Monica Mountains National Recreation Area and reaches of Corral Canyon Creek (849 acres), Cold Creek (71.5 acres), Tuna Canyon (417 acres), and Topanga Creek watershed (120 acres) for a total of nearly 1,665 acres.

The WRP partner agencies with Mountains Restoration Trust, National Park Service, Mountains Recreation Conservation Authority and others have worked together to identify priority acquisition sites, willing sellers, and to pool funds to realize regional wetland preservation goals.

Santa Clara River

The Santa Clara River Parkway project is working to acquire and restore the Santa Clara River from the coast to the Ventura and Los Angeles county line. The project includes a 35-mile continuous trail. With its partner, The Nature Conservancy, the Coastal Conservancy has acquired 19 properties totaling 3,400 acres along 16 miles of the river. The Coastal Conservancy has completed several riparian studies and plans including a restoration feasibility study, a two dimensional hydrologic model for use in levee removal and habitat restoration planning, an Arundo removal strategic plan and a public access vision plan.

Ballona

The Ballona Wetlands acquisition project acquired 192 acres of the Ballona Wetlands complex in Los Angeles County. As part of the transaction, additional acreage was donated, resulting in the protection 600 acres of salt marsh and freshwater wetlands. This acquisition resolved one of the oldest and largest land use battles in Los Angeles and created an extensive natural area in an urban setting.

Restoration of the Ballona Wetlands will be the largest wetland restoration project in Los Angeles County. The Ballona wetlands once spread across the coastal plain at the mouth of Ballona Creek. However, the area has been substantially altered during the last century with the channelization of Ballona Creek and construction of Marina del Rey. Despite these changes, significant wetland habitat remains at Ballona including pickleweed, marsh heather, saltgrass, arrowgrass and glasswort. Bird surveys indicate that the site is used seasonally by a variety of migratory shorebirds, as well as shoreline resident species including gulls, terns and ducks. Upland birds including small raptors also make use of the wetland habitat. Bird species of special interest observed in the project area include nesting pairs of Belding's Savannah sparrow and foraging use by California least terns.

David Peevers

Devereux Slough: Ocean Meadows

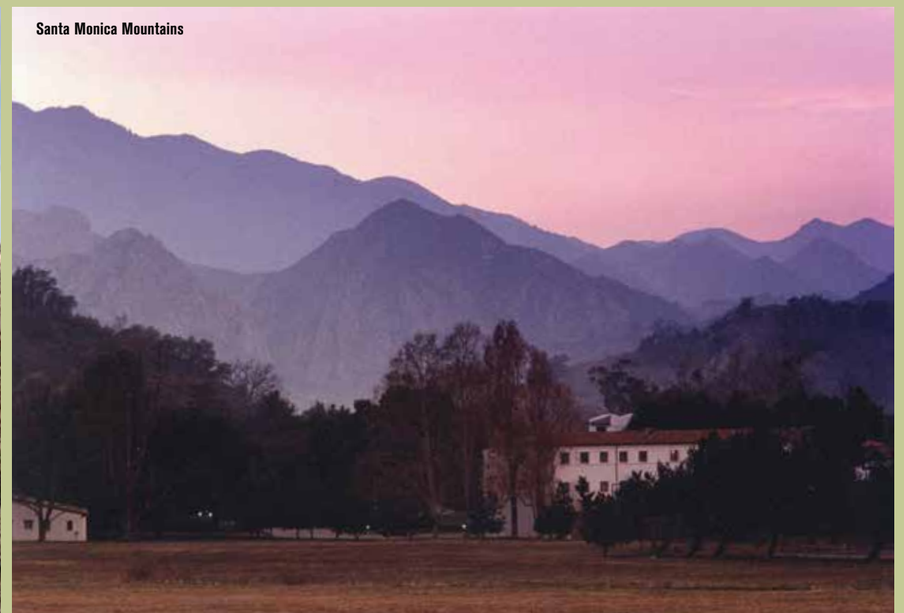
The Ocean Meadows acquisition in Santa Barbara County was completed with $2.5 million in Coastal Conservancy funds and $500,000 in U.S. Fish and Wildlife Service funds granted to the Trust for Public Land. The Ocean Meadows property was formerly part of upper Devereux Slough, but most of the wetland habitat was filled for construction of a nine-hole golf course. Upon acquisition the property was conveyed to University of California, Santa Barbara, which will develop a restoration plan and act as the permanent land steward.

"The Santa Clara River represents the largest and least altered major river system in Southern California. Fifteen years ago none of its rich habitat was conserved. Today over 3,500 acres representing 15 miles of the river have been conserved and several restoration projects are in progress. This conservation success is a result of a strong and efficient partnership between the State Coastal Conservancy and The Nature Conservancy that is continuing to expand conservation of the Santa Clara River.."

E.J. Remson, Senior Program Manager, The Nature Conservancy

Devereux Slough

Santa Barbara Audubon Society



Santa Monica Mountains

Ballona Wetlands

WRP Science Initiatives

Past, Present, Future

The Southern California Wetlands Recovery Project is committed to basing its decision-making on the best available science.

Through its projects and research, the WRP is advancing the science of wetland restoration and management throughout Southern California and beyond.

To identify regional goals and priorities for wetlands restoration for the Southern California coast, the WRP has worked during the past decade and a half to gather data and develop methodologies for understanding the answers to several questions essential to developing an effective regional strategy for wetlands restoration.

- Where are our wetlands?
- What is the condition of our wetlands?
- Where were our wetlands in the past?
- How have the extent and condition of wetlands changed over time?
- How can we assess and measure the success of our wetland restoration projects not just in terms of dollars spent and acres restored but also in terms of function and resilience?
- What future conditions do we need to consider and account for due to climate change and associated changes in sea level, precipitation and storm patterns?

The WRP initiatives below were developed to begin to answer these questions as well as to synthesize more than a decade of scientific data on regional wetlands assessments, historical ecology and climate change predictions.

Historical Ecology

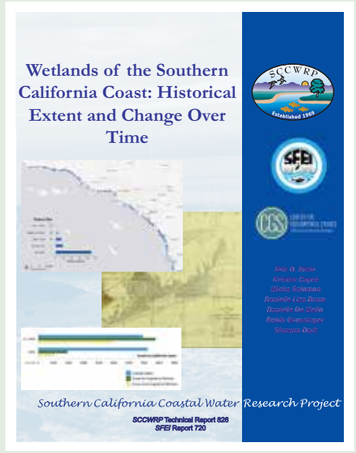
WRP partners have funded the Southern California Coastal Watershed Research Project (SCCWRP), San Francisco Estuary Institute, and CSU Northridge Center for Geographical Studies to conduct numerous studies to analyze the historical extent, composition and change over time of Southern California's coastal wetlands.

Historical Wetlands of the Southern California Coast: An Atlas of U.S. Coast Survey T-Sheets, 1851 – 1889

Through this initiative the project team acquired, interpreted, digitized and performed initial analysis of 26 historical U.S. Coast and Geodetic Survey topographic maps (T-sheets). This T-Sheet Atlas presents the first regional assessment of the relative distribution and abundance of different wetland habitat types along the historical Southern California coastline. These data can be accessed through the T-Sheet Atlas, a GIS database, and an interactive website (www.caltsheets.org). Images of each T-Sheet, with corresponding habitat information overlaid on aerial photography, are presented in the Atlas along with guidance for appropriate interpretation and application. The Atlas provides a "snapshot" of historical coastal wetlands ca. 1850-1880.

Wetlands of the Southern California Coast: Historical Extent and Change Over Time

Building on the T-Sheet Atlas analysis, the goal of this study was to assess change in extent and composition of coastal wetlands ca. 1880 – 2005. The analysis is based on a comparison of wetlands mapped on the historical U.S. Coast and Geodetic Survey topographic maps (T-sheets) to the contemporary 2005 U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) maps.



Knowledge of the changes in the extent and distribution of coastal wetlands should be an important component of restoration and conservation planning. Along with other information, this knowledge can help inform decisions about the composition and structure of restoration projects at both site-specific and regional scales.

> "Through the partnership of the Wetlands Recovery Project and establishment of the Science Advisory Panel, we have been able to advance wetland science and monitoring within the Southern California Bight. It is rewarding to see this research being applied throughout the state. The dialogue between scientists, resource managers and the public is critical to wetlands recovery."
>
> **Stephen Weisberg, Executive Director, SCCWRP**

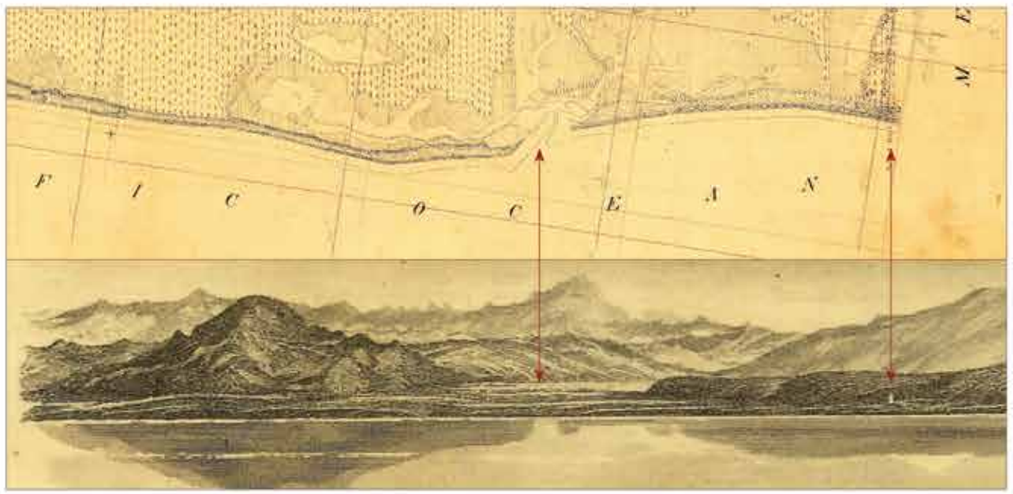
Watershed and Site-Specific Historical Ecology Studies

Numerous other historical ecology studies of Southern California wetlands and watersheds have been conducted or are in progress. WRP partners have provided funding for these projects, including the Coastal Conservancy, State of California Rivers and Mountains Conservancy, Santa Monica Bay Restoration Commission, Los Angeles Regional Water Quality Control Board and U.S. Fish and Wildlife Service Coastal Program. These projects include:

- Historical Ecology of the Lower Santa Clara River, Ventura River, and Oxnard Plain: An Analysis of Terrestrial, Riverine, and Coastal Habitats (2011)
- Historical Ecology and Landscape Change of the San Gabriel River and Floodplain (2007)
- Historical Ecology of the Ballona Creek Watershed (2011)
- Historical Ecology of Northern San Diego County Lagoons (2014)
- Historical Ecology of the Tijuana River Valley (in progress)

Monitoring

Early on in the WRP's development, the Science Advisory Panel and Wetlands Managers Group identified the need to develop a regional monitoring program. The Integrated Wetland Regional Assessment Program (IWRAP) was designed to provide a cost-effective way to evaluate the status and trends in extent and condition of wetland and riparian areas, and to assess the WRP's progress toward achieving its regional wetland recovery objectives. The program was designed to be able to measure success the of WRP projects from a functional perspective. The program included three levels of monitoring: inventory and mapping of wetlands; regional wetland condition and



Series of historical topographical maps (T-sheets) with historical habitat types displayed as a GIS layer on the T-sheet as well as the present-day satellite image.

WRP Science Initiatives

extent assessment protocols; and a project site specific and more in-depth monitoring protocol. The California Rapid Assessment Method (CRAM) was developed to fill the need of the site-specific monitoring.

The IWRAP is an integrated program developed in a collaborative process with all partners of the WRP. The IWRAP monitoring framework became the basis for the State Wetland and Riparian Area Monitoring Program (WRAMP).

The WRP and chair of the Science Advisory Panel continue to work closely with the California Wetland Monitoring Workgroup to improve the monitoring and assessment of wetland and riparian resources by developing a comprehensive wetland monitoring program for California and increasing coordination and cooperation among local, state and federal agencies, tribes and non-governmental organizations. The continued cooperation further ensures coordination between statewide and regional monitoring efforts.

Regional Strategy Update

Building on more than a decade of new research data and tools — and a growing momentum to address climate change and to protect and restore resilient and dynamic ecosystems — the WRP has embarked on a three-year process to update the WRP Regional Strategy. The updated Regional Strategy will be a scientifically based management framework developed through a collaborative approach. It will contain quantifiable recovery objectives developed by synthesizing data on past, present and future conditions. The updated Regional Strategy also will contain a decision support tool to aid in prioritizing preservation and restoration activities, which will assist the WRP in developing the Work Plan. This initiative is being undertaken by WRP Wetlands Managers Group and the Science Advisory Panel with financial help from WRP key partners including the Environmental Protection Agency, the Coastal Conservancy and the Landscape Conservation Cooperative.

Conferences, Workshops and Technical Training

The WRP, through the combined efforts of the Science Advisory Panel, Wetlands Managers Group and staff, develops trainings, workshops and symposia in cooperation with the WRP partner agencies, the NOAA Coastal Training Program, universities and technical consultants to build capacity of local agencies and organizations to support and carry out wetland restoration.

Topics of past trainings have included invasive species (*Arundo donax*) removal

Eyron Borgnis

techniques and research, fish passage barrier removal, regional acquisition planning for the Santa Monica Mountains, low impact development, climate change and sea level rise modeling, restoration project permitting and more. These programs help support communication between research scientists, technical experts, agency staff and resource management practitioners to facilitate the best possible resource planning and management.

Headwaters to Ocean (H2O) Conference

The annual Headwaters to Ocean (H2O) Conference covers a wide spectrum of coast and ocean issues, including climate change, sea level rise, coastal and estuarine processes, wetlands restoration planning and design, beach nourishment, water quality, ecosystem and habitat management, invasive and exotic species, wetlands biology and ecology, regional sediment management and shore protection. The conference is organized by the California Shore and Beach Preservation Association, California Coastal Coalition, Southern California Wetlands Recovery Project, Society of Wetland Scientists — Western Chapter, and Tijuana River National Estuarine Research Reserve Coastal Training Program.

The conference draws a diverse range of professionals including researchers, coastal engineers, wetland ecologists, coastal resource managers, coastal scientists, aquatic ecologists, landscape architects, urban planners, coastal geologists, students, professionals from local, regional, state and federal government, the private sector and NGOs.

For further information and updates, please check our webpage:

www.scwrp.org

"The Wetlands Recovery Project brings together scientists from universities, nonprofit organizations and agencies to improve the scientific understanding of Southern California's wetlands. Through the WRP, the Coastal Conservancy and its partners are applying that knowledge to on-the-ground decisions about wetland conservation and management."

Mary Small, Deputy Executive Officer, Coastal Conservancy


CRAM surveys


CRAM surveys


CRAM surveys

WRP Organizational Chart

Branches of the WRP

The WRP's structure is comprised of a Board of Governors, Wetlands Mangers Group, Science Advisory Panel, Public Advisory Committee and County Task Forces.

Board of Governors

The Board of Governors meets annually to set policy direction for the WRP and to approve the annual Work Plan. The Secretary of the California Natural Resources Agency chairs the Board of Governors, which is comprised of officials from the 18 state and federal member agencies.

Wetlands Managers Group

The Wetlands Managers Group consists of staff members from the public agencies that make up the WRP. The group meets on a monthly basis to guide programmatic and project goals. The group also facilitates inter-agency coordination, generates policy proposals for consideration by the Board of Governors, and coordinates technical workshops, symposia, and conferences. The Wetlands Managers Group works closely with the WRP Science Advisory Panel to ensure decisions are based on best available science. In addition to the 18 partner agencies the following organizations and agencies are ex-officio members of the Wetlands Managers Group: California Department of Transportation; NOAA Coastal Training Program; Rivers and Mountains Conservancy; San Diego Association of Governments; Santa Monica Bay Restoration Commission; and Science Advisory Panel Chair.

Science Advisory Panel

The Science Advisory Panel consists of leading researchers and restoration practitioners in fields related to wetlands science. They identify key scientific questions, develop position papers for the Board of Governors' consideration, and work with the Wetland Managers Group to ensure that management decisions are based in sound science. The SAP has attracted more than $3 million in grants and in-kind services to develop regional wetlands assessment models and tools to help the WRP measure progress towards its regional goals.

County Task Forces

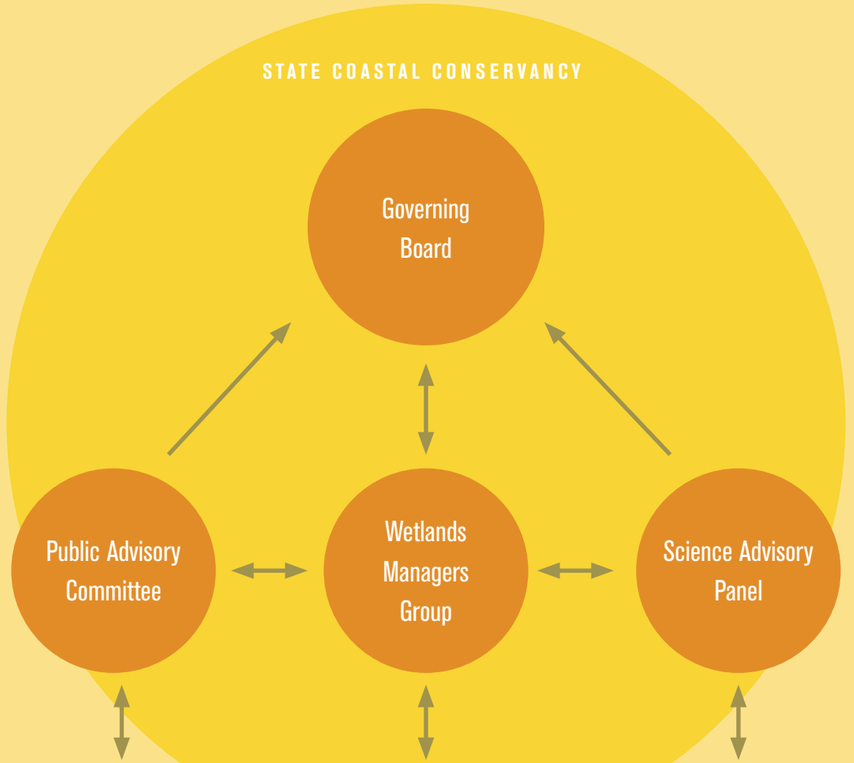
The grassroots base and innovative structure of the five County Task Forces endows the WRP with its distinctive vitality. Task Forces are co-chaired by a County Supervisor and an environmental leader. The Task Forces provide a county-wide forum for public, private, and non-profit wetlands and watershed stakeholders. Participants work collaboratively to identify critical wetland resources, help implement feasible projects, mobilize support for funding, channel community concerns to the WRP member agencies, incorporate wetlands protection and recovery more fully into local government processes, and promote wetlands education and information-gathering.

Public Advisory Committee

Local elected officials, environmental leaders, business people and educators serve on the Public Advisory Committee as well as the co-chairs from each County Task Force. The PAC engenders support for wetlands recovery throughout the region and represents community interests in the WRP partnership. Past efforts have included region-wide supervisorial summits to strategize cross-county support for wetlands recovery, and participation in legislative educational outreach events and keynote presentations in Sacramento. The Public Advisory Committee has been on hiatus and will reactivate in 2015 with planned participation in the annual Watershed Day event in Sacramento.

Central Elementary School Field Trip, Tijuana Estuary

Southern California Wetlands Recovery Project



"I was ecstatic when I first heard about the Southern California Wetlands Recovery Project in 1998 – and signed up immediately to serve on the Public Advisory Committee. It ushered in a very welcome shift in statewide attitudes about the value of wetlands, especially in Southern California. The WRP has been a successful prototype for all parties working together."

Jean Watt, President,
Friends of Harbors, Beaches and Parks

WRP Projects Map

This map shows all of the current projects on the WRP's Work Plan as of 2014. WRP partner agencies are continuing to fund and seek additional support for these prioritized projects as well as identifying new projects that align with the WRP's Regional Strategy.

Aliso Estuary 1930s


Alamitos Shell Placement


Oysters

Orange County Coastkeeper

Orange County Coastkeeper


Aliso Estuary

Alamitos Bay

The Alamitos Bay Oyster Restoration Project will augment suitable habitat by building a 60 square meter oyster bed using oyster shells. The public will participate in the project through "oyster gardening" where community members will hang strings of oyster shell off of private or public docks around Alamitos Bay where the oyster strings will collect native oyster recruits. Following the recruitment period, the volunteers will attend a volunteer day where they will place the shells with recruited spat, removed from their strings, onto the mudflat to create the new oyster reef.

Aliso Creek

The Aliso Creek Estuary Restoration Project takes the first step toward restoring a fully functional estuary for Aliso Creek. It will develop a Conceptual Restoration Plan to restore coastal wetland habitats designed to support a wide range of fish and wildlife, including listed species. The Conceptual Restoration Plan will be developed through a stakeholder-driven process that builds consensus for restoration and identifies objectives, constraints and feasible design alternatives.

Our Partners

The Southern California Wetlands Recovery Project is fortunate to work with fantastic partners. Our wetlands recovery and education goals could not be met without the hard work and expertise of partner agencies and organizations. The organizations and public agencies listed here have received funding through the WRP, provided technical expertise and support, and provided training and educational outreach in support of WRP goals and projects.

Nonprofit Organizations

- Agua Hedionda Lagoon Foundation
- Alta Terra
- Amigos De Los Rios
- Audubon Starr Ranch Sanctuary
- Back to Natives Restoration
- Ballona Wetlands Foundation
- Batiquitos Lagoon Foundation
- Bolsa Chica Conservancy
- Bolsa Chica Land Trust
- Buena Vista Audubon
- California Audubon
- California Coastal Coalition
- California Native Plant Society
- Channel Island Marine Institute
- Community-Based Restoration and Education Program
- Community Environmental Council
- Concerned Resource and Environmental Workers (the C.R.E.W.)
- Cottonwood Creek Conservancy
- Council for Watershed Health
- Crystal Cove Alliance
- Earth Island Institute
- Earthroots Field School
- Environment Now
- Friends of Ballona Wetlands
- Friends of Colorado Lagoon
- Friends of Famosa Slough
- Friends of Gardena Willows Wetland Preserve, Inc.
- Friends of Harbors, Beaches, and Parks
- Friends of San Diego Wildlife Refuges
- Friends of Shipley Nature Center
- Groundwork San Diego Chollas Creek
- Growing Solutions
- Heal the Bay
- Heritage Museum of Orange County
- Huntington Beach Wetlands Conservancy
- Keep Sespe Wild Committee
- Laguna Ocean Foundation
- Long Beach Organic Inc.
- Los Cerritos Wetlands Land Trust
- Los Penñasquitos Lagoon Foundation
- Mountains Restoration Trust
- Mission Resource Conservation District
- National Fish and Wildlife Foundation
- Newport Bay Conservancy
- North East Trees
- Ocean Discovery Institute
- Ocean Institute
- Ojai Valley Green Coalition
- Ojai Valley Land Conservancy
- Once Upon A Watershed
- Orange County Coastkeeper
- Orange County Conservation Corps
- Palos Verdes Penninsula Land Conservancy
- Preserve Calavera
- Resource Conservation Partners
- Rose Creek Watershed Alliance
- San Diego Audubon Society
- San Diego Canyonlands
- San Diego EarthWorks
- San Diego River Park Foundation
- San Dieguito River Valley Conservancy
- San Elijo Lagoon Conservancy
- San Gabriel Mountains Regional Conservancy
- Santa Ana Watershed Association
- Santa Barbara Botanical Garden
- Santa Barbara Channelkeeper
- Santa Barbara County Audubon
- Santa Barbara County Land Trust
- Santa Monica Bay Restoration Foundation, aka. The Bay Foundation
- Sierra Club, San Diego Chapter
- South Coast Habitat Restoration
- Southwest Wetlands Interpretive Association
- The Ocean Foundation
- The River Project
- The Nature Conservancy
- The Trust for Public Lands
- Tree People
- Trout Unlimited
- Urban Corp of San Diego
- Ventura County Coastkeeper
- Ventura Hillsides Conservancy
- Whittier Narrows Nature Center Associates
- WILDCOAST
- Wishtoyo Foundation

Southern California Cities

- City of Carlsbad
- City of Carpinteria
- City of Compton
- City of Costa Mesa
- City of Dana Point
- City of Del Mar
- City of Encinitas
- City of Goleta
- City of Imperial Beach
- City of Irvine
- City of La Jolla
- City of Laguna Beach
- City of Laguna Niguel
- City of Lake Forest
- City of Long Beach
- City of Los Angeles
- City of Huntington Beach
- City of Malibu
- City of Newport Beach
- City of Oceanside
- City of Oxnard
- City of Palos Verdes
- City of San Clemente
- City of San Diego
- City of Santa Ana
- City of Santa Barbara
- City of Santa Clarita
- City of Santa Monica
- City of San Pedro
- City of Seal Beach
- City of Solana Beach
- City of Ventura

Southern California Counties

- County of Los Angeles
- County of Orange
- County of Santa Barbara
- County of San Diego
- County of Ventura

Ports

- Port of Long Beach
- Port of Los Angeles
- Port of San Diego

Special Districts and Joint Powers Authorities

- Antelope Valley Resource Conservation District
- Council for Watershed Health
- Los Cerritos Wetlands Authority
- Metropolitan Water District
- Mission Resource Conservation District
- Resource Conservation District of the Santa Monica Mountains
- San Dieguito River Park Joint Powers Authority
- Southern California Coastal Water Research Project
- Ventura County Resource Conservation District

State Agencies, Conservancies, and Programs

- California Coastal Commission
- California Conservation Corps
- California Department of Fish and Wildlife
- California Department of Parks and Recreation
- California Environmental Protection Agency
- California Natural Resources Agency
- California Sea Grant College Program
- California State Coastal Conservancy
- Central Coast Regional Water Quality Control Board
- Conejo Open Space Conservation Agency
- Los Angeles & San Gabriel Rivers Watershed Council
- Los Angeles Conservation Corps/ SEA Lab
- Los Angeles Regional Water Quality Control Board
- San Diego Regional Water Quality Control Board
- San Diego River Conservancy
- Santa Ana Regional Water Quality Control Board
- State Lands Commission
- State Water Resources Control Board
- Wildlife Conservation Board

Federal Agencies

- International Boundary and Water Commission
- National Park Service
- National Marine Fisheries Service
- National Oceanic and Atmospheric Administration
- Tijuana River National Estuarine Research Reserve
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

Universities

- California State University, Fullerton
- California State University, Long Beach
- California State University, Northridge
- Loyola Marymount University
- San Diego State University
- Scripps Institute of Oceanography
- University of California, Irvine
- University of California, Los Angeles
- University of California, San Diego
- University of California, Santa Barbara
- University of Southern California

Thanks to the partner organizations and individuals who have made our 15 years of success possible.

A list of representatives of WRP member agencies on the Board of Governors and Wetlands Managers Group, as well as Science Advisory Panel members, Task Force leaders and WRP staff can be found at www.scwrp.org.

Report Preparation
Thanks to the Coastal Conservancy staff who wrote this report and to our partners who provided photos and reviews. Special thanks to Travis Armstrong, Evyan Borgnis and Ellen Toomey.

Coastal Conservancy

SOUTHERN CALIFORNIA WETLANDS RECOVERY PROJECT

"Southern California's wetlands – coastal regions where saltwater and fresh water meet and plants and animals thrive – are vital to the health of the environment. Unfortunately, these wetlands are quickly disappearing.

"Thankfully we have the Southern California Wetlands Recovery Project to help stem the loss. Over the last 15 years, the Wetlands Recovery Project has acquired more than 8,200 acres and restored nearly 5,000 acres of wetlands throughout coastal Southern California, including the important Upper Newport Bay Ecological Restoration Project. I'm grateful for the contributions this group makes to the environment and look forward to its continued success."

The Honorable Dianne Feinstein,
United States Senator for California

WILDCOAST