



Photo © Dean Sullivan

2011 in review



MORRO BAY
NATIONAL
ESTUARY
PROGRAM

“The Morro Bay National Estuary Program is a perfect example of how environmental agencies can cooperate and complement the work of local government. The City of Morro Bay and the Program have partnered on a number of issues. The Program is an active participant in our community, and we are proud and appreciative of their work.”

-Janice Peters, Mayor of Morro Bay 2004-2010

Director's Message

This past year has been an exciting one for me and for the Morro Bay National Estuary Program. I have had the opportunity to explore the natural wonders of the Central Coast and learn from the dynamic group of partners who make the Estuary Program's success possible. I find it is true what they say about SLO County—it is one of the friendliest places in the U.S., and I have felt so welcomed to this dedicated, conservation-minded community.

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In 2011, the program was able to realize the concrete results from a number of its major projects, with data showing success at the Walter's restoration site and San Luisito Creek where the program has worked to reduce harmful bacteria levels. We were also able to finally achieve a milestone in our outreach efforts with the installation of watershed signs helping residents comprehend the geography of a watershed during their everyday activities.

While major ventures have ended, a new vision is emerging. This year the program began the important task of updating our comprehensive management plan, crafting the next iteration of the vision that will take us through this next decade. Change is coming – whether the fiscal result of government and other funding reforms or the environmental result of unknown changes in climate – the Estuary Program will be ready. In the coming year, the program will be implementing new demonstration projects for water conservation as we increase our scrutiny of water supply along with water quality issues. We will also be broadening our efforts to reach out to the community to ensure informed and engaged stewardship. I thank our many partners for your continued support of the program and look forward to tackling with you the new challenges and opportunities that lie ahead.

~ Adrienne Harris, Executive Director

President's Message

We share the common goal of protecting our watersheds and bay in the Central Coast. I am pleased to continue as the President of the Bay Foundation board, an experience that has been personally rewarding and has given me the opportunity to work with a myriad of individuals to protect and enhance our natural environment. Reflecting back on 2011, this past year was a great year for the Estuary Program. Not only did we accomplish much, but we also brought onboard a dynamic management team to lead the program into the future. We have had strong Congressional and local official support for the program, and I thank our elected officials for their continued support. Our work would not have been possible without the commitment of the program's partners and volunteers, whose assistance has been very valuable in sustaining momentum and driving us forward. Investment and expertise from our many partners makes the Program's work possible.

Our work would not have been possible without the commitment of the program's partners and volunteers

It is an exciting time and a daunting time for the Estuary Program. While traditional resources that have provided for our work are dwindling, new opportunities are emerging. As we finalize our updated management plan, I look forward to working with our partners to develop new approaches to solving the estuary's problems. More now than ever, we should strengthen our partnerships and grow together in order to achieve great things in the coming years. I offer my sincere thanks to those who have supported the program in the past and to those who support us in this next chapter of our history.

~ Joel Neel, President

The Morro Bay National Estuary Program brings citizens, local government, non-profit organizations, agencies, and landowners together to protect and restore the Morro Bay Estuary. The Estuary Program, a local non-profit organization, fosters collaboration at a watershed-level.

The Morro Bay estuary is a national and state treasure, a vital ecological resource whose health affects our health and the vibrancy of our community and economy. We still have the opportunity to protect and even enhance this vital resource to improve our quality of life and that of our children.

Part of a national network, the Morro Bay National Estuary Program works to protect and restore Morro Bay and its watershed by conducting monitoring and research to track the health of the estuary, repairing natural habitats to protect water quality and wildlife, and educating residents and visitors on how to be good stewards of the bay.

Bay Facts

- ◆ Approximately 48,000-acres of watershed drain into the roughly 2,300 acre bay
- ◆ Morro Bay hosts an incredibly diverse array of unique, fragile or rare habitats which are home to nearly two dozen threatened and endangered species —including many that only exist in the vicinity of the Morro Bay watershed
- ◆ Morro Bay is a stop on the Pacific Flyway, the major migration path for birds on the West Coast
- ◆ The Audubon Society’s annual count regularly identifies more than 200 species of birds
- ◆ Morro Bay is considered the most significant wetland system in the central coast of California
- ◆ Morro Bay’s clean water supports commercial oyster farming

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“The bay and estuary are our identity and our economy. Be it fishing, or tourism or our quality of life, everything revolves around a healthy bay. We have a responsibility to be good stewards of this wonderful gift.”
- Craig Schmidt, CEO Morro Bay Chamber of Commerce

Addressing Water Quality Hot Spots

Linking Monitoring to Project Design and Implementation

For years, Program volunteers have ventured out into watershed creeks and the bay, testing to assure that waters are safe for swimming and playing.* Results from San Luisito Creek, a perennial stream in the Chorro Creek sub-watershed, consistently stood out as problematic, showing elevated bacteria concentrations. *E. coli* levels in San Luisito exceeded recommended levels in 84% of tests between 2003 and 2008.

The Estuary Program worked with the county Public Health Department, reaching out to local landowners, educating them about the problem and requesting their help to identify its source. With landowner support, the Program expanded monitoring efforts along the creek, searching for a likely source. Resulting data indicated that cattle on private creekside ranches could be the major contributor. Estuary Program staff and partners worked closely with two local ranchers to remedy the problem, fencing cattle out of more than 13,000 feet of the creek and installing an alternate source of water.

Results after project completion have shown a significant decline in bacterial levels in the creek, as well as an increase in riparian vegetation. Before the fencing, most samples taken from the downstream monitoring site exceeded the bacteria standard for safe swimming, following project completion, that number had dropped substantially. When comparing pre and post-project data, the analysis showed strong evidence of a project effect, and the reduction in bacteria was greatest in the area where cattle most heavily impacted the creek (see Figure 1).

Through the efforts of the volunteer monitoring program, the Estuary Program identified a problem area, joined with local partners and private landowners to address the problem, and demonstrated measurable water quality improvements from restoration work at a local scale.

*recreational standards set by the US EPA

“The Estuary Program has supplied me with data and visual aids that allow us to understand exactly what is going on around the bay and watershed. At Morro Bay Oyster Company, we use the routine plankton observations made by the Estuary Program to protect our customers by ensuring that there are no harmful biotoxins present in Morro Bay. The water quality data collected in the watershed is vital for alerting us to any possible sources of harmful pollution.”

-Neal Maloney, Morro Bay Oyster Company

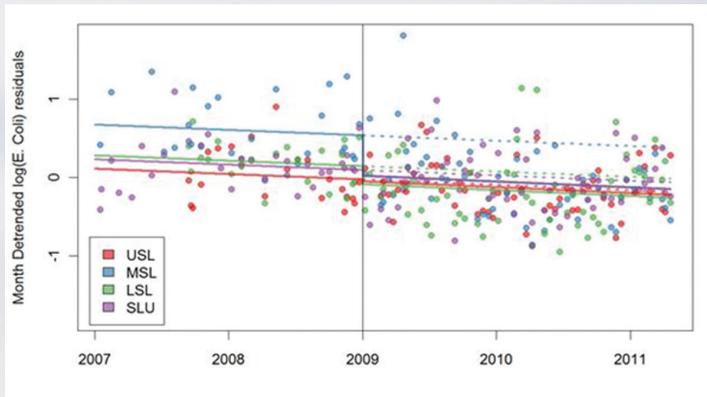


Figure 1. Each line represents the *E. coli* levels over time at each of the four monitoring sites. The black vertical line represents when the project was installed. The dotted lines predict what *E. coli* concentrations would have been if the project had not been installed.

Measuring Success

Effectiveness of the Estuary Program's efforts is ultimately measured by the health of the estuary and watershed. Are we slowing sedimentation? Is the water safe for swimming and kayaking? Are fish and shellfish safe to eat?

The Program's monitoring effort provides a framework for tracking these kinds of environmental changes in Morro Bay. Detecting shifts over the short term is hard. Years, even decades, of data collection are often required to establish trends. The Program is the only entity with extensive data of this kind for the watershed. The Volunteer Monitoring Program and Program staff collect data on the extent of eelgrass beds, water quality, plankton, and erosion along creeks, to provide an answer to these sorts of questions. Dozens of volunteers assist the effort by measuring stream flow and the shapes of creek beds, collecting and testing water samples, and netting and analyzing plankton, among other activities.

Organizations such as the Regional Water Quality Control Board, the county's Public Health Department, CA Department of Fish and Game, Cal Poly State University, Cuesta College, the City of Morro Bay, the state Department of Public Health and more use this data to determine where to best target their efforts.

2011 Volunteer Monitoring at a Glance

- 60 volunteers logged 1225 volunteer hours
- Conducted 373 water quality site visits
- Collected and analyzed 397 bacteria samples
- Assessed 4900 feet of creek habitat for macroinvertebrates and habitat quality
- Monitored eelgrass shoot density of 200 square meters of bay habitat
- Analyzed 13 marine phytoplankton samples

To learn how to volunteer, visit www.mbnep.org/help



WALTERS CREEK

Restoring a Gun Range

Surrounded by grassland pastures, Walters Creek is also home to an active shooting range. The US government seized the ranchland in 1942, drastically modified the landscape and used it for military training during both World War 2 and the Korean War. Over fifty years later, undersized culverts were collapsing into the stream, the stream channel had severely eroded, unexploded ordinances littered the area, and the site was overrun by non-native vegetation.

The Estuary Program began restoration of Walters Creek in 2007 in an effort to restore habitat and ecological function for aquatic and terrestrial species native to the area. Removing the failing culverts and berms, re-establishing a more natural creek path, connecting the channel with its natural floodplain and replanting with native species were the first steps to return the region to pre-military conditions. A subsequent three-year maintenance and monitoring period, which concluded in 2011, has brought the site to the stage at which it can now naturalize with minimal human interference.

Estuary Program staff developed a strategy to maintain and monitor both the physical and biological responses to the restoration work, battling non-native species, irrigating propagated plants, and addressing minor repairs. The completely re-engineered creek channel provided a 'blank slate' to re-establish native riparian plant communities as well as improve fish passage and capture fine sediment before it makes its way to the estuary.

Preliminary results look promising at the site. Plant cover has changed from mostly non-native, weed species to native plant communities which should provide shade and stabilize banks. Monitoring efforts have provided CA Dept. of Fish and Game managers with their first bird inventory data set, which will be helpful when making management decisions. The planted vegetation is growing at an average of 2 feet per year. The hope is that once established, more biological and physical trends will become apparent.

It takes a long time for a restoration site to mature, so monitoring will now be scaled back to a five-year regime, providing a comprehensive data set that enables Program staff to address the goals of the project and to provide insight into future habitat protection and adaptive management projects.

Monitoring Result Highlights

1) 81 avian species were identified on site, accounting for 18% of all the avian species detected in San Luis Obispo County as of November 2010 (Morro Coast Audubon)



Photo © Alan Schmierer

The blue grosbeak, shown at left, is dependent on riparian habitat. Populations of the species in California have been reportedly declining due to habitat loss. Monitoring at Walters Creek revealed blue grosbeak breeding activity at the site.



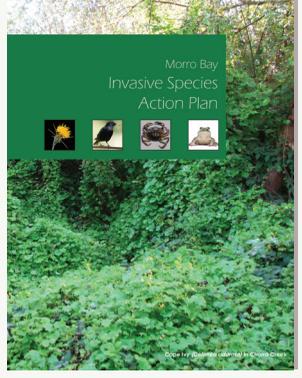
2) Monitored plots showed a majority of native plant cover: 79% native and 19% non-native as illustrated in graph at right



Above, the project site before restoration. Culverts seen here were decommissioned and bank erosion remedied.

Collaborating to Combat Invaders

Invasive species can harm our economy, environment and human health. They can crowd out existing native species and drastically alter ecosystems. Once these non-native plants, animals, insects and diseases are established, controlling the problem is costly and eradication is unlikely, making quick identification and response to an invader critically important in combating the problem.



In 2010, the Estuary Program began efforts to create an invasive species early detection and rapid response network. The Morro Bay Invasive Species Action Network facilitates cooperation between



land managers, resource specialists, scientists and citizens seeking to detect and respond to invasive species quickly and efficiently. The network

collaborated to publish the Morro Bay Invasive Species Action Plan, available at centralcoastinvasives.org.

In the summer of 2011, the network had its first call to action. A small population of an invasive sea lavender was found in the salt marsh. In estuaries to the north and south of Morro Bay, invasive sea lavenders have spread rapidly, crowding out sensitive native species. Morro Bay is home to two federally endangered species that could be severely impacted by such an invader. Within a week of discovery, State Park employees had mounted a rapid response to eradicate the plant before it could become established, communicating with and accessing information provided by other Action Network members.

COMMUNITY

Cultivating Stewardship

The estuary is home to a diverse community of people – both residents and visitors. Whether student, parent, retiree, volunteer or tourist, people make the difference in the health of the estuary.

The Estuary Program employs a variety of efforts to encourage stewardship within our community. In 2011, those efforts included:

- The Estuary Nature Center, with over 53,000 visitors
- Holding the first estuary photo contest
- Publishing the quarterly newsletter Turning the Tide
- Updating www.mbnep.org and creating a Facebook presence
- Hosting field trips and cleanup efforts



Marking a Milestone

“Watershed” is a fourth grade science topic that many students have forgotten before middle school. A watershed is the area of land that drains rainfall and groundwater into the estuary (or ocean) through a series of creeks and rivers, delivering either clean water or land-based pollution to our waterways.

The watershed signs are gentle reminders of that fourth grade science lesson, creating awareness of the watershed, encouraging visitors and residents alike to protect water quality, encouraging community stewardship and reminding the public to “Keep it Clean.”

In 2011, the Estuary Program installed signs at the watershed’s borders on Los Osos Valley Road and on Highway 1. The Program worked with CalTrans, the County of SLO, CA Conservation Corps and other local partners to install signs that conform with new statewide design standards. As signs are installed throughout California, Morro Bay’s signage will become part of a message reinforced throughout the state - a message, hopefully, that will become familiar to most Californians.



Volunteers Make the Difference

Volunteers make a difference with every hour they contribute.

In 2011, 76 Estuary Program volunteers contributed 2,783 hours to important monitoring efforts and community programs.

This year saw formation of the new Community Volunteer Program, in addition to the long-running, highly successful Volunteer Monitoring Program. Community volunteers handle the Mutt Mitt program, undertake beach cleanups and will soon include a DockWalkers program to help educate boaters about bay-friendly boating practices.



Volunteers help install a greywater system at the Los Padres CA Conservation Corps campus.

Thank you to all our volunteers— past, present and future!



Volunteers of 2011

VMP VOLUNTEER OF THE YEAR

Kate McAbee (shown at left front), handles water quality monitoring at one of the Program's more challenging sites, participates in the water quality monitoring (which has taken her to some other challenging sites), and assists with macroinvertebrate monitoring. Kate's volunteered for just over one year, but contributed 40 hours during that time while maintaining a full-time course load at Cal Poly.

COMMUNITY VOLUNTEER OF THE YEAR

Diane Moore is the heart and soul of the Mutt Mitt program. Contributing nearly 900 hours in 2011 alone (with the help of her husband, Fred), Diane raises funds, stores and distributes refill mutt mitts, interfaces with State Parks and the City of Morro Bay to coordinate efforts throughout Morro Bay, and still finds time to help partners' efforts to keep dispensers throughout Los Osos funded, maintained and stocked.

In addition, Diane volunteers to help keep Morro Bay parks clean and well-maintained.

Dogs have always been a big part of my life since I was born. I saw a need to help our local parks and beach environmentally to solve a really big problem. Keeping our parks and beach accessible to everyone and providing education to the community is what keeps me committed to volunteering for the Mutt Mitt program.
~ Diane Moore, Community Volunteer of 2011

Fiscal Year 2011

As a member of the National Estuary Program network, the Morro Bay National Estuary Program receives an annual grant from the U.S. Environmental Protection Agency (EPA). The combination of the EPA grant and other matching funds helps the Estuary Program achieve important conservation goals in the Morro Bay watershed.

Consistent federal funding allows the organization to bring a variety of fiscal resources to the watershed. “Leveraged funds” describes funds garnered through the strategic use of federal grant money. Over the last five years, the Estuary Program has leveraged \$2.9 million in EPA grant funding into \$7.4 million of additional funding – a ratio of 2.5 to 1. These additional funds support local restoration and water quality monitoring projects, education and outreach, and efforts by Estuary Program partners to improve water quality and habitat in the Morro Bay watershed (see illustrations below). The vast majority of these funds are provided to partners and local organizations through grants and collaborative projects.

DONATED SERVICES

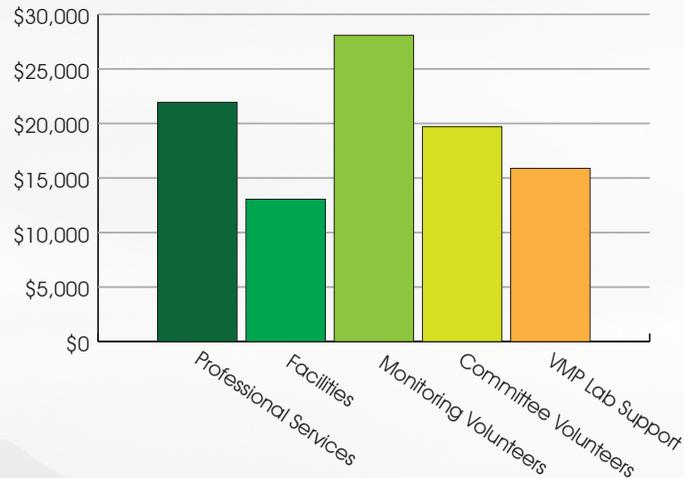
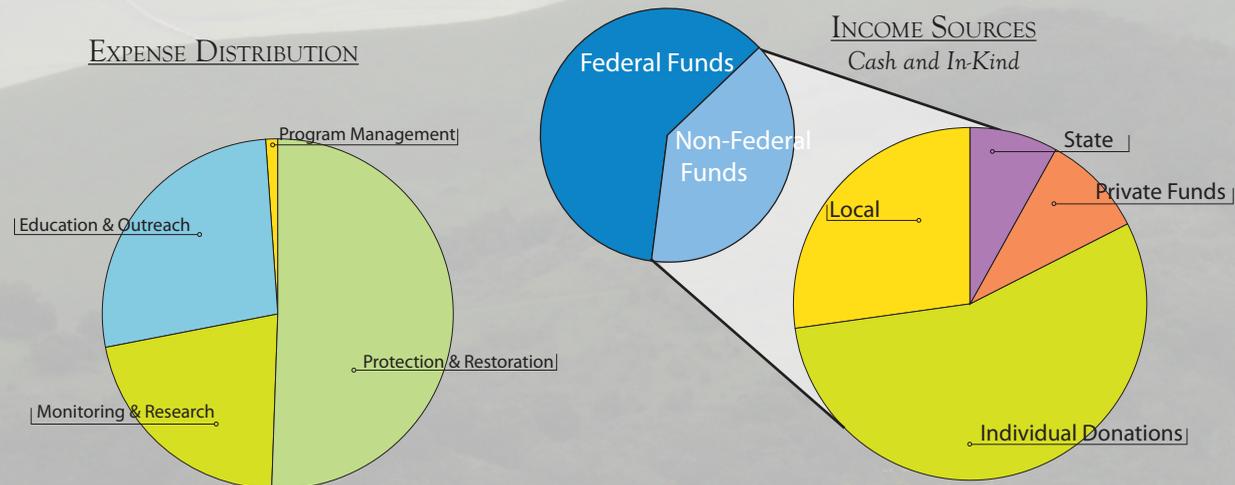


Figure 1

Beyond cash funds, the Estuary Program relies on the numerous volunteers and businesses that donate their time and services to the organization. Without these donations, the Program would not be able to achieve many of its core functions. In 2011 (October 2010-September 2011), nearly \$100,000 in volunteer time and services, including donated rent, legal services, accounting services, local business support for the volunteer monitoring program, and volunteer time were donated (see Figure 1). More than a thousand hours were donated in 2011 by volunteer monitors, without which the Estuary Program would not be able to collect important water quality data and samples. Other volunteer efforts include the members of our Executive and Implementation Committees, which guide the organization in our conservation efforts.



The figures above illustrate how Estuary Program expenses are distributed across the different focus areas of the organization (left) and the Program’s income sources (right). As federal funds become increasingly limited, non-federal funds will play an even more critical role in the Program’s continued success.

Funding Community Efforts

Since 2001, over \$1.5 million has been awarded to community members and local partner agencies to fund projects that implement the Morro Bay National Estuary Program's Comprehensive Conservation and Management Plan.

In 2011, the Estuary Program awarded over \$80,000 to support community efforts to protect, enhance and restore the Morro Bay Estuary.

2011 Grants Awarded

Educational Tide Books awarded to Central Coast Natural History Association/Faylla Chapman \$1,000

El Morro Elfin Forest Mutt Mitt Program awarded to Small Wilderness Area Preservation \$2,340

Laundry Facility Greywater Project awarded to California Conservation Corps Los Padres Center \$5,000

Zero Waste Demonstration Park at Dairy Creek Golf Course awarded to Environmental Protection Associates \$5,000

Infrastructure for Dairy Creek Zero Waste Demonstration Park awarded to County of SLO \$5,000

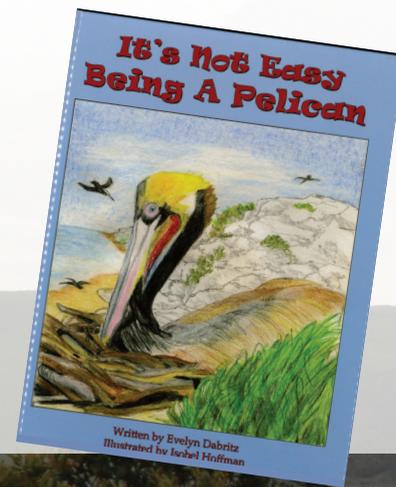
It's Not Easy Being a Pelican Children's Book awarded to Evelyn Dabritz \$3,000

Cuesta College Bridge Garden Interpretive Signage awarded to Carmichael Environmental \$5,000

Controlling Cape Ivy & Other Invasive Plants in Chorro Creek awarded to CA Nat'l Guard, Camp San Luis Obispo \$25,500

Western Snowy Plover Management for Montaña De Oro State Park awarded to CA State Parks, SLO Coast District \$30,000

The ribbon cutting at the Dairy Creek Golf Course Zero Waste facility included County Supervisor Bruce Gibson, and representatives from the Estuary Program, Eco-Rotary, County Golf Operations and Environmental Protection Associates.



Updating Our Management Plan

The Estuary Program, in conjunction with our many partners, has worked hard to restore, protect and conserve the estuary and its watershed since our inception in 1995. Each successful restoration project, monitoring effort and educational campaign is rooted in the management plan, known as the Comprehensive Conservation and Management Plan, or CCMP. That plan, born from a watershed-based, grassroots effort, was approved by the state of California and the US EPA more than 10 years ago. The community's forward-thinking approach ensured the plan's relevance for over a decade. However, as tasks were completed and new issues emerged, an update was needed for the plan to continue guiding important conservation work in the watershed and estuary.

In 2011, the Program began the process of updating the plan, involving the community in a series of public meetings and engaging experts to identify emerging issues. Four technical workshops were held to gather input on specific issues in the plan, such as climate change and water quality monitoring. To date, the Estuary Program has received public comment on emerging issues to add to the plan, created a list of draft actions, and developed a new organizational framework for the plan. In early 2012, a more complete draft will be released for public comment. The final updated plan will be released by the end of 2012. More information on the status of the plan update and public meetings can be found at www.mbnep.org/Library/ccmp_update.html.

EXECUTIVE COMMITTEE MEMBERS

Los Osos Community Service District - **Marshall Ochylski**, Director
City of Morro Bay - **Noah Smukler**, Morro Bay City Council
Implementation Committee Chair - **Daniel Bohlman**,
Land Conservancy of SLO

San Luis Obispo County - **Bruce Gibson**, Board of Supervisors
Federal Government - **Suzanne Marr**,
US Environmental Protection Agency

Bay Foundation of Morro Bay - **Joel Neel**, Bay Foundation President
Environmental Interests - **Holly Slettland**,
Morro Coast Audubon Society

State Government - **Dominic Roques**, Central Coast RWQCB
Government (At Large) - **Sam Schuchat**, State Coastal Conservancy
Agricultural Interests (At Large) - **Dave Alford**, Local Rancher
Tourism/Recreation Interests (At Large) - **Dean Sullivan**,
Small Business Owner

Fishing Interests (At Large) - **Sharon Rowley**,
Central Coast Women for Fisheries
Science and Research (At Large) - **Dean Wendt**,
Cal Poly State University/SLOSEA

PARTNERS

Bay Foundation of Morro Bay
Brunswick Public Foundation
California Polytechnic State University, SLO
California Coastal Commission
California Coastal Conservancy
California Conservation Corps
California Department of Boating and Waterways
California Department of Conservation
California Department of Corrections and Rehabilitation
California Department of Fish and Game
California Department of Forestry
California Department of Parks and Recreation
California Department of Public Health
California Department of Transportation
California Department of Water Resources
California Men's Colony
California National Guard (Camp San Luis)
California Native Plant Society
California Ocean Protection Council

California Polytechnic University:
Cal Poly Corporation and College of Science and Mathematics
California Wildlife Conservation Board
Central Coast Natural History Association
Central Coast Regional Water Quality Control Board
Central Coast Salmon Enhancement
City of Morro Bay
Coastal Alliance on Plant Expansion
Coastal Resources Institute
Coastal San Luis Resource Conservation District
County of San Luis Obispo
Cuesta Community College
Farm Bureau
Land Conservancy of San Luis Obispo County
Los Osos/Baywood Park Chamber of Commerce
Los Osos Community Services District
Marine Mammal Center
Monterey Bay National Marine Sanctuary
Monterey Bay Sanctuary Foundation
Morro Bay Beautiful
Morro Bay Chamber of Commerce
Morro Bay Commercial Fishermen's Organization
Morro Coast Audubon Society
National Oceanic and Atmospheric Administration
Natural Resources Conservation Service
Partners for the Conservation of the Los Osos Coastal Dunes
San Luis County Air Pollution Control District
Sierra Club
San Luis Obispo Science and Ecosystem Alliance (SLOSEA)
San Luis Obispo Botanical Garden
SLO Green Build
Small Wilderness Area Preservation
The Nature Conservancy
Trust for Public Land
UC Cooperative Extension
US Army Corps of Engineers
US Bureau of Land Management
US Coast Guard
US Environmental Protection Agency
US Fish and Wildlife Service
US Forest Service
US Geological Survey

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