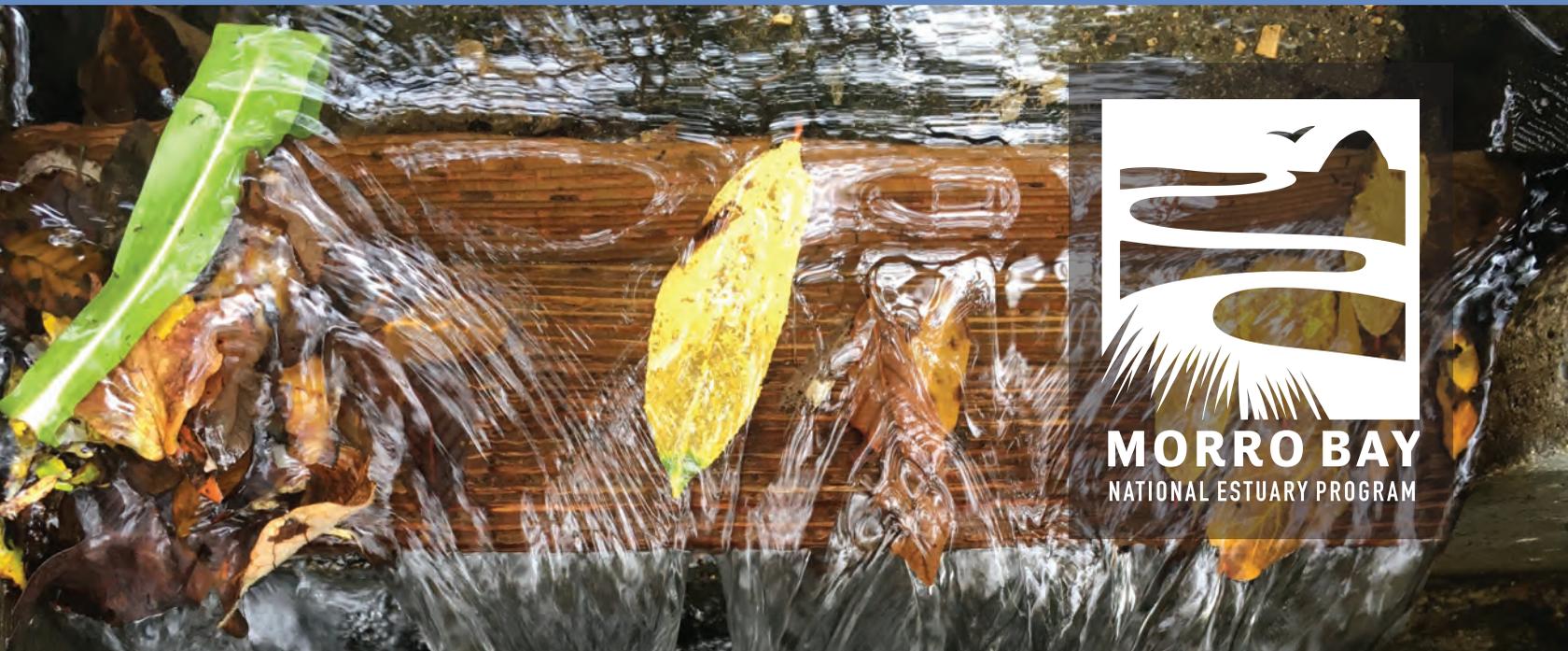
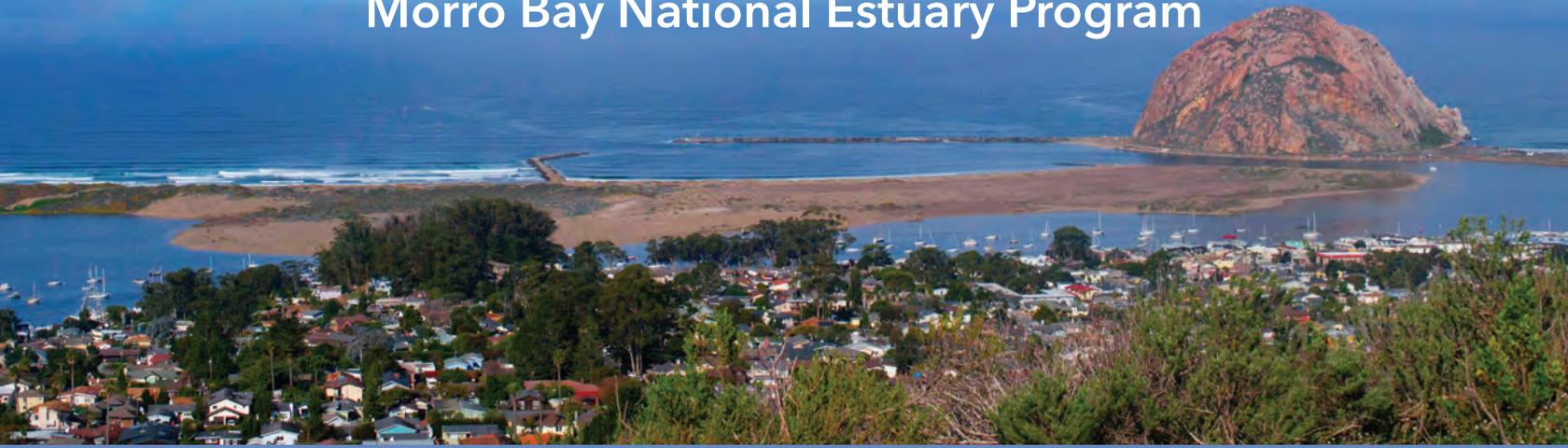


Our Collective Impact 2018

Morro Bay National Estuary Program



MORRO BAY
NATIONAL ESTUARY PROGRAM

A note from our Executive Director

"More and more people are watching birds, taking water samples, staring into the heart of a red spiral galaxy, marrying curiosity with collective power, waking up and thinking—what am I going to study today?"

—Sharman Apt Russell
Diary of a Citizen Scientist

Dear Friends of the Estuary Program,

Everything we do—from working to bring eelgrass back to the bay to protecting natural areas—is built upon the strength of our partnerships across the community. We achieve positive results for the estuary and surrounding lands when we recognize and build on the relative strengths of each organization that strives to improve water quality and natural areas.

This report shows the impact of our collaborative efforts during 2018.

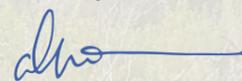
- The growth of our eelgrass transplant plots improved with support from Cal Poly research projects, changes in permitting by regulatory agencies, and donated time and energy from dozens of volunteers. Plots planted in January of 2018 have more than doubled in size! You can read more on page 4.
- We collected critical data on the health of our coastal creeks with engagement from landowners, local funders like the Harold J. Miossi Charitable Trust, and 21 volunteers. Turn to page 3 to see what we what we learned.
- More than 900 acres of private land has been protected from future development since November of 2017 through conservation easements completed by the Land Conservancy of San Luis Obispo and funded in part by the Morro Bay National Estuary Program. See pictures of these beautiful areas of preserved land on page 2.
- We engaged a wide audience with information about the health of the bay through outreach events and partnerships undertaken with Cal Poly, Audubon California, the United States Geological Survey, the San Luis Obispo Botanical Garden, the San Luis Obispo Marine Protected Area Collaborative, and Upward Bound, just to name a few.

- Read about Upward Bound students building innovative monitoring equipment and kids across California learning about marine protected areas on page 2.

Please join us in 2019 to make a difference in our estuary. You become part of this community when you make the choice to support a cleaner and healthier bay. Participate in Coastal Cleanup Day, our Earth Day Paddle Board Cleanup, or our Independence Day cleanup, and use our Trash Tracker (MBNEP.org/trash-tracker) to let us know what you find. Record the rain in your backyard and share your findings through our Rain Gauge Network (MBNEP.org/rain). Engage your inner scientist with the collaborative data-collection tools and projects on our website (MBNEP.org/citizen-science). Donate to help keep our bay clean and healthy at MBNEP.org/donate.

We look forward to seeing you (and your citizen-science data!) in the new year.

Sincerely,



Lexie Bell
Executive Director
Morro Bay National Estuary Program



Partnering for natural spaces

The 75-square-mile Morro Bay watershed spans residential areas, farms, ranches, and public lands. One of the Estuary Program's goals is to conserve natural spaces within and around developed areas to maintain essential habitat for native wildlife and protect the health of our creeks. Between November 2017 and December 2018, three new conservation agreements in the watershed preserved 993 acres of land.



The Estuary Program helped fund the purchase of a protection agreement completed by the Land Conservancy of San Luis Obispo and Kandarian Organic Farms to permanently protect 133 acres of the Los Osos Valley. Though this parcel of land is miles from Morro Bay, it impacts the health of the estuary because it drains into Los Osos Creek, which runs directly into Morro Bay. We are happy to be able to provide support in the Land Conservancy's efforts to protect the future of these coastal lands. Photograph of Kandarian Organic Farms above and Buckingham ranch on the right are courtesy of The Land Conservancy.



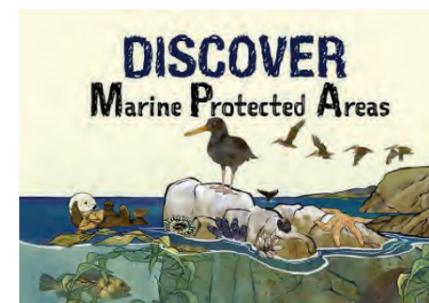
The Land Conservancy completed two additional conservation agreements within the Morro Bay watershed during the calendar year. One agreement permanently protects 320 acres of private rangeland that drains into Chorro Creek. The other agreement preserves 540 acres of land owned by the Buckingham family on the southern slope of Hollister Peak. Both parcels support diverse wildlife including bald eagles, black bear, California red-legged frogs, and southwestern pond turtles. Conserving habitat for these species will help ensure their survival and the biodiversity of the Morro Bay watershed.

Strengthening community connections

The Estuary Program brings people together for the good of the bay. This year, we formed new partnerships and reached more than 8,000 people through science talks, classroom visits, field trips, and other activities.

EXPLORER'S GUIDE TO MPAs

The San Luis Obispo Marine Protected Area (MPA) Collaborative created a kids' activity book that introduces MPAs and encourages environmental stewardship. Estuary Program staff and other collaborative members created the content. Pick up an activity book in our Nature Center!



UPWARD BOUND PARTNERSHIP

High school students in Cal Poly's summer Upward Bound program engineered housing units for water quality monitoring equipment and created an artistic exhibit on marine debris for our Nature Center.

MORRO BAY SCIENCE EXPLORATIONS

At our Science Explorations events, experts presented research and other work related to the night's theme. Speakers sparked astute questions and discussion on the topics of eelgrass, climate change, and local fisheries. Join us for the 2019 season! Details at MBNEP.org/events.



Watershed Stewards Program members pose after giving a strong presentation.

Creek health improves with rainfall

Each spring, Estuary Program staff work with dozens of volunteers to conduct in-depth bioassessment surveys along local creeks. These surveys help inform our restoration and conservation work by evaluating the health of the creeks that drain into Morro Bay.

Working in two teams, volunteers take more than 1,000 data points per survey. One team tracks the size of rocks along the creek bottom, the percentage of plant cover over the creek, the width and depth of the water, and other factors that indicate habitat quality.



Two volunteers on the rock team measure the creek width.

Another team collects aquatic macroinvertebrates, water bugs that can be seen without a microscope, and preserves them for analysis by laboratory staff who count and identify the samples. The habitat measurements and the number and types of bugs we find indicate the overall creek health.



Rocks in local creeks provide a place to live for water bugs, like these caddis fly larvae.

The record drought between 2011 through 2016 left some local creeks struggling. The following year, the Morro Bay watershed received more than 37 inches of rain, 150 percent of the average rainfall. However, the effects of the drought continued to show in lower-than-average creek health scores.



A staff member collects and rinses specimens.

This year, we found small decreases in health scores at two sites, but there was an upward trend for health scores at the other eight sites. San Bernardo Creek showed the greatest improvement with an increase of 89% from 2017. If we continue to receive adequate amounts of rainfall, this may be the beginning of an upward trend in the health of our creeks.



Stoneflies like this one require clean, cold water to survive. They indicate a healthy creek that can support bugs, frogs, fish, and other aquatic wildlife.



Seep monkey flowers grow along upper Dairy Creek, a tributary of Chorro Creek. The bright yellow blooms attract pollinators including bees and hummingbirds.



Trees roots, branches, and other natural, woody debris contribute to creek habitat health by providing places for fish to find food and hide from predators.

We are very grateful to the Harold J. Miozzi Charitable Trust, which has given \$50,500 to the Estuary Program's bioassessment monitoring efforts since 2013. Thanks to the Miozzi Trust's generous award of \$10,800, we will conduct another set of bioassessment surveys in spring of 2019. To participate, fill out an interest form at MBNEP.org/volunteer.

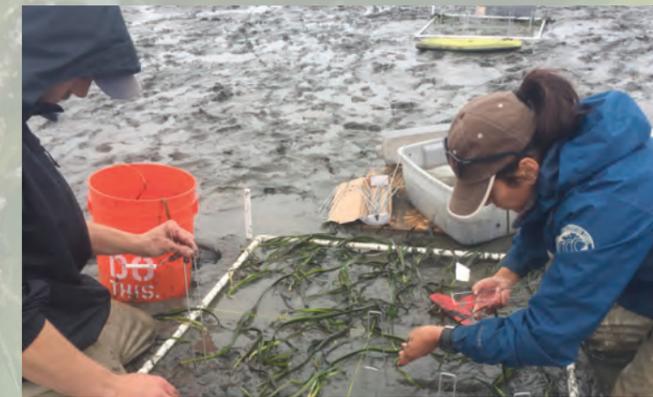
An update on eelgrass in Morro Bay

If you've seen people boating over to Morro Bay's mudflats carrying boogie boards, trowels, and rebar this year, odds are they were helping restore eelgrass in Morro Bay. During spring of 2018, we planted more than 3,000 shoots at five locations from the backbay to the forebay using two planting methods.

Most plantings involve placing 72 shoots at regular intervals in a one-square meter area, using garden stakes to hold the roots in place.



Staff from both local oyster farms helped our planting crews reach the transplant sites by boat.



Staff and volunteers plant eelgrass in a square meter plot.

The other method has been tested by scientists in Puget Sound (another National Estuary Program!) and involves bending smooth rebar into a long L shape and tying eelgrass shoots to the long side with twine. The short end anchors the eelgrass to the ground and the rebar can be removed once the plot is established.



A volunteer ties eelgrass shoots to an L-shaped piece of rebar with twine. The short end will anchor it to the bay floor.

Volunteers braved strong wind, hard rain, cold water, and deep mud to harvest and transplant shoots. This intrepid group included AmeriCorps Watershed Stewards Program members, Cal Poly faculty and students, staff from both local oyster companies, and community members. We greatly appreciate their time and hard work. In November, eight months after our last effort, we monitored all of the transplant sites from 2018 and some from 2017. We were excited to see that every plot had grown denser and expanded. Some patches were as much as 400% larger than their original size. In addition to these intentionally transplanted areas, we were surprised to see new patches of eelgrass across the bay that had grown spontaneously from eelgrass seeds or roots. Although the acreage of eelgrass in the intertidal zone remains very low, we are glad to see the transplant plots thriving and new, naturally occurring eelgrass sprouting up.

In 2019, we will continue to monitor the growth of eelgrass throughout the bay, conduct several new restoration efforts, and create a detailed map of the bay bottom. This map will help us see how tides and sediment move through the bay and inform our understanding of how these forces affect eelgrass. Subscribe to our weekly blog at MBNEP.org/blog to stay up to date on our progress.

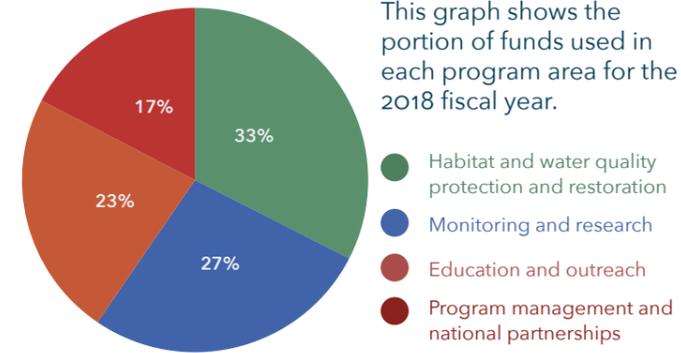


The images above show the growth of one transplant plot over eight months, from March through November of 2018.

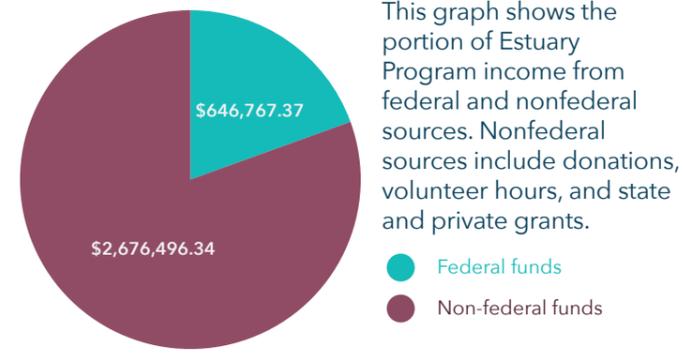
Estuary Program funding at a glance

The Morro Bay National Estuary Program is a locally-managed nonprofit that is recognized by the United States Environmental Protection Agency (EPA). Financial and technical assistance from the EPA, along with other grants and donations, sustain Estuary Program projects and collaborative efforts with a wide variety of partners in the watershed. These figures illustrate how Estuary Program funds were spent during the 2018 fiscal year (October 1, 2017–September 30, 2018).

EXPENSES



INCOME



DONORS & SUPPORTERS AT \$100 AND UP

\$5,000 and up

The Sopris Fund
Virginia L. Cahill
John Caldwell Donor
Advised Fund
Paul Neel

\$1,000 to \$4,999

Elsie & Ken Casida
Mike Multari & Denise Fourie
Joel Neel
Rosalie Valvo

\$250 to \$499

Anonymous
Homer & Dede Alexander
Kate & Chris Anderson
Bayfront Inn
Rhonda & Keith Crowfoot
Elizabeth Curren, in honor of Sue & Myron Hood
Dale Kaiser Real Estate, Inc.
Thomas Edell
ESTERO
Grassy Bar Oyster Company
Charlotte Kelley in honor of the Kelley family
Betsy Ann & Michael Kinter
Kitchen & Bath Works/Luhr
Design & Construction Inc.
Julie Loe

William & Delayna Luffee
Morro Cove HOA
Piedra Environmental
Consultants
Rotary Club of Morro Bay
Santa Lucia Fly Fishers, Inc.
Ted Schade
Stephanie Seay
Peter Starlings
David & Helianthe Stevig
Taco Temple
Tamara Cox & Simon Hamid
in honor of Shirley & Duane
The Shell Shop
Charles & Beth Tolfree
Shirley & Paul Vinson
Richard & Linda Williams
in honor of Meade
Canine Rescue
Steven & Lisa Mia Williams

\$100 to \$249

Frank & Adele Andersen in honor of Beckett Andersen
Barbara & Oscar Munoz
Bear Valley Animal Clinic
Ian & Janis Bell
Lexie & Michael Bell
Sharon Brown in memory of Timothy G. Brown
Judith & William Carlson
Nina Clark
James Crescenzi

Rotary Club of Morro Bay
Sunset
Sharon Fitch
Mary & Henry Gallegos
Bonnie Heikes
Laura & Douglas Hill
Myron & Sue Hood
Rebecca Leventhal
Diane & Roger Ludin
Monica & Edward Bischof
Jay & Gerry Mueller
Bill Newman
John Pepple
Ronald E. Rasmussen
Karen Robert & Rick
Gilligan
Glenn Silloway
Stillwater Sciences on behalf of Stillwater
Sciences, Morro Bay
James & Christina
Van Beveren
Christi VanCleve
Kris Vardas & PG&E
Linda Veale
Yolanda & Jay Waddell
Fred & Candi Wickman
Carla Wixom

PROJECT FUNDING PARTNERS

- U.S. Environmental Protection Agency
- National Oceanic and Atmospheric Administration
- Harold J. Miossi Charitable Trust
- The Community Foundation of San Luis Obispo County
- California Department of Fish & Wildlife
- California State Water Resources Control Board
- Central Coast Salmon Enhancement
- California Polytechnic University, San Luis Obispo

Find our complete list of donors at MBNEP.org/donate

Thank you for helping to protect & restore the Morro Bay estuary!

Volunteers make all the difference



Volunteers gave 3,460 hours

- 683 hours monitoring the bay and local creeks
- 148 hours restoring eelgrass to Morro Bay
- 1,608 hours sharing information about the bay
- 901 hours stocking dog-waste bags in dispensers for our Mutts for the Bay program
- 120 hours working on the Bay Foundation Board



343 visits for creek water quality monitoring



84 visits for bay water quality monitoring



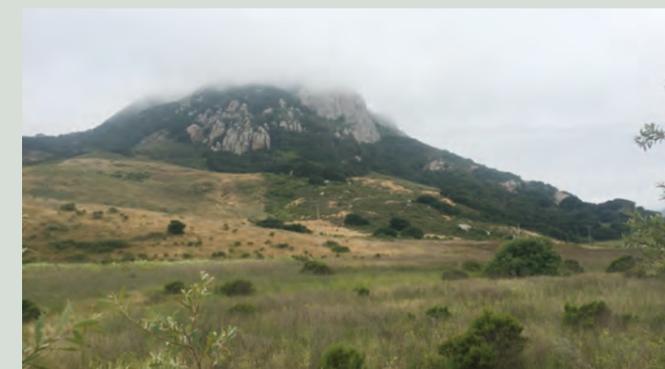
189 visits for bacteria monitoring

Thank you, volunteers!

Project preview 2019

RESTORING FLOODPLAINS TO PROTECT THE BAY

The Chorro Creek Ecological Reserve is a 580-acre parcel of land located in the Morro Bay watershed at the base of Hollister Peak. The Estuary Program helped purchase it in 2003, then transferred it to the California Department of Fish & Wildlife for management. This summer, with funding from the California Coastal Conservancy and the California Department of Fish and Wildlife, we will begin restoration work. In partnership with the California Conservation Corps, we will stabilize the creek and allow it once more to flood its banks during storms. This will reduce erosion, improving the quality of the water in Chorro Creek before it makes its way to the bay.



EELGRASS RESTORATION

This spring we will continue work to restore eelgrass in Morro Bay with the help of partners and volunteers. We will transplant the same number of shoots in 2019 as we did in 2018, targeting areas where we expect eelgrass to do well.

MORRO BAY ESTUARY NATURE CENTER UPDATES

In 2018, we installed a new wildlife viewing station in our Nature Center. In 2019, with the help of a \$5,000 grant from The Community Foundation of San Luis Obispo County, we will add a permanent exhibit that focuses on climate, weather, and tides through the lens of climate change.



Who we are & what we do

The Morro Bay National Estuary Program is a private nonprofit that works collaboratively to protect and restore the Morro Bay estuary and surrounding lands for people & wildlife.

Board, staff, and committees in 2018

Bay Foundation Board

As the Estuary Program's nonprofit home, the Bay Foundation applies for grants, manages funding, & employs staff.

Joel Neel—President
Gary Ruggerone—Vice President
Bill Henry—Secretary
Kris Vardas—Treasurer
Dr. Jason Curtis
Tom Edell
Sally Krenn
Leonard Moothart
Dr. Deanna Richards
Shaunna Sullivan, Esq.

Executive Committee

The Executive Committee provides policy direction, assesses progress, and approves the annual workplan. It is advised by a Technical Advisory Committee and Workgroups. The Executive Committee is composed of twelve members who represent specific organizations and interests. Find a complete list of Executive Committee members on our website.

MBNEP.org/board-committees

Estuary Program Staff

Includes staff who worked all or part of 2018.

Lexie Bell—Executive Director
Ann Kitajima—Assistant Director
Cynthia Milhem—Office Manager
Carolyn Geraghty—Restoration Projects Manager
Karissa Willits—Monitoring Coordinator
Shane Bennett—Monitoring Coordinator
Tim Delany—Monitoring Coordinator
Kelley Boland—Field Technician
Melia Green—Field Technician
Tyler Cook—Field Technician
Matt McKechnie—Field Technician
Rachel Pass—Communications & Outreach Coordinator
Cathryn Michel—Communications & Outreach Intern
Evelyn Barajas-Perez—Communications & Outreach Specialist

Visit & explore

Morro Bay Estuary Nature Center

Free, family-friendly, fun!

Open daily at 601 Embarcadero 10 a.m. to 6 p.m.

Virtual Nature Center

Explore the bay from home or school.

*Funded in part by the Harold J. Miossi Charitable Trust
and the California Coastal Conservancy.*

Learn.MBNEP.org

Keep in touch

Follow us & subscribe to our weekly blog.

 [Facebook.com/mbestuary](https://www.facebook.com/mbestuary)

 [@MorroBayNEP](https://www.instagram.com/MorroBayNEP)

 [@MorroBayNEP](https://twitter.com/MorroBayNEP)

 MBNEP.org/blog

