



## **Morro Bay National Estuary Program 320 Base Funding Grant Semi-annual Report: October 2024 to March 2025**

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The Morro Bay National Estuary Program (Estuary Program) is a locally driven, non-regulatory program established under Section 320 of the Clean Water Act (CWA) and further supported by the Protect and Restore America's Estuaries Act (PRAE Act) of 2021. As one of 28 National Estuary Programs (NEPs) across the country, the Estuary Program works in partnership with federal, state, and local agencies, as well as community stakeholders, to protect and restore the health of Morro Bay and its watershed. The program operates under the guidance of its Comprehensive Conservation and Management Plan (CCMP) which serves as a strategic framework for addressing key water quality, habitat, and resource management challenges in the region.

The Estuary Program is moving forward on completing new and ongoing tasks in the Fiscal Year (FY) 2025 320 base funding workplan. All workplans are approved by the Environmental Protection Agency (EPA) and the Estuary Program's Executive Committee. The budget report shows that our Section 320 base funding expenses under the grant (Grant Number 98T25101) in the first half of the fiscal year were \$333,800. As of March 31, we have expended 73% of the 320 base funding grant that started in FY22. The Estuary Program has met approximately 182% of its match requirement for the cumulative grant with cash match and estimated current in-kind contributions (at approximately \$5,717,432).

The Estuary Program requests EPA's continued participation on the Executive Committee and assistance with meeting relevant administrative and programmatic grant conditions. During this reporting period, the Estuary Program prepared for the 2025 Program Evaluation process.

The following report summarizes activities and deliverables completed during the semi-annual report period. As the Estuary Program does not have any subawards under this federal grant, a reporting of subaward monitoring activities carried out under 2 CFR 200.331(d) does not apply.

The Estuary Program received federal grants to implement Infrastructure Investment and Jobs Act (IIJA) funding in January 2023 and February 2024. Some of the organization's work is funded by IIJA but supported and implemented by staff funded through the Estuary Program's 320 base funding grant. Thus, the status of IIJA-funded efforts are included in this semi-annual report. Deliverables for efforts with project costs other than staff time directly funded by IIJA will be reported in the IIJA semi-annual report.

### **Habitat & Water Quality Protection and Restoration**

The Habitat & Water Quality Projection and Restoration tasks directly support the Core Programs of Section 320 of the CWA by "protecting wetlands," "addressing diffuse, nonpoint sources of pollution," and "developing the relationship between in-place loads and point and nonpoint loading of pollutants to the estuarine zone and the potential uses of the zone, water quality, and natural resources." These efforts also align with the PRAE Act by supporting habitat restoration projects that "address the effects of recurring extreme weather events on the estuary, including the identification and assessment of

vulnerabilities in the estuary and the development and implementation of adaptation strategies.” Through these habitat restoration and protection initiatives, the Estuary Program continues to fulfill its mandate under the CWA and PRAE Act – ensuring that estuarine and watershed ecosystems are resilient, ecologically healthy, and well-managed for the benefit of both natural communities and human use.

## Land Conservation

Objective: Conserve land to achieve Management Plan goals as opportunities arise.

Status: Ongoing task

Progress Toward Milestones: The Estuary Program continues to work with The Land Conservancy of San Luis Obispo (LCSLO) to explore potential easement projects in the watershed. The Coastal San Luis Resource Conservation District (CSLRCD) is conducting a conservation easement planning effort in conjunction with the State Coastal Conservancy (SCC) to look at Chorro Flats and actions needed to protect nearby critical infrastructure. The CSLRCD is also in contact with private landowners and the City of Morro Bay regarding potential easements. Staff coordinated with the SCC on monitoring for an existing easement that they funded in the Morro Bay watershed.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: These efforts directly support the task outcome of completing land conservation projects as opportunities arise.

Problems Encountered: None.

Deliverables: Activities described in the semi-annual report (see above).

Activities Planned for Next Six Months: The Estuary Program plans to coordinate with the LCSLO and other partners to continue outreach to landowners and support new easements as opportunities arise.

Pending Deliverables: National Estuary Program Online Reporting Tool (NEPORT) reporting. Updated map tracking protected lands included in the 2026 State of the Bay (SOTB) report.

## Restoration Maintenance and Monitoring

Objective: Conduct maintenance and monitoring for conservation easements and restoration projects, as necessary.

Status: Ongoing task

Progress Toward Milestones: The Estuary Program conducted flow monitoring on Pennington Creek following a project to remove a fish passage barrier and improve a water diversion. Data are submitted to Trout Unlimited on a regular basis to manage the flow diversion and comply with water rights.

Staff are assessing conditions at Chorro Creek Ecological Reserve (CCER) following the storms of winter 2023 that caused significant shifts at the site. Staff hired a contractor to conduct channel surveys and

drone flights in September 2024 to better understand conditions at the site and support planning for adaptive management efforts. A final report was completed in December 2024, which highlighted areas needing adaptive management for continued fish passage under low flow conditions. Staff visited the site with California Department of Fish & Wildlife (CDFW) representatives and are planning next steps. The California Conservation Corps (CCC) continues to conduct annual site maintenance such as weed management and annual plant monitoring to track plant success rate.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The accomplished tasks directly support the outcomes of conducting easement monitoring and maintaining landowner communications.

Problems Encountered: None.

Deliverables: Pennington Creek data submitted to the California Environmental Data Exchange Network ([CEDEN](#)) and shared with partners.

Activities Planned for Next Six Months: The Estuary Program is conducting planning efforts to address impacts to CCER from the 2023 winter storms. We will also work with partners to address any needed restoration maintenance.

Pending deliverables: CCER Geomorphic Assessment Report.

## Other Restoration Efforts

Objective: Engage in other restoration efforts that arise to help achieve Management Plan goals.

Status: Ongoing task

Progress Toward Milestones: The Estuary Program participated in numerous efforts to meet Management Plan goals. These included participation in the following efforts:

- San Luis Obispo (SLO) County and Caltrans effort to replace the bridge over Los Osos Creek on South Bay Boulevard.
- Collaboration and support of CSLRCD restoration of their Los Osos Wetland project, including installation of additional plants.
- Worked with CSLRCD to install fencing and off creek water sources in the watershed. The work was conducted through a subaward under the IJIA grant.
- Local invasive management efforts in the estuary, including managing eradication of an invasive sea lavender within tidal marsh habitat and iceplant on the sandspit.
- Partnering with University of California, Santa Barbara (UCSB) on a Climate Adaptation grant to understand state-wide dune vulnerability and restoration, with Morro Bay acting as a pilot project for dune restoration efforts.
- Collaboration with SLO County on management of *Arundo* (giant reed) and mapping invasive riparian species in the Chorro Creek watershed. Surveys of riparian areas in the Chorro Creek watershed were conducted in spring 2024 to map and prioritize invasive species management. Next steps include obtaining funding for invasive removal efforts, with an initial focus on *Arundo* removal.

- Completed subaward reporting for a project with Cuesta College to support their Sustainable Agriculture program through installation of water infrastructure for grazing livestock and wildfire resilience. The project was completed in November 2023, and the subaward under our IJA grant has since been closed.
- Coordination with California Polytechnic State University, San Luis Obispo (Cal Poly) is ongoing in scoping out future floodplain enhancement and restoration projects along Walters Creek. Staff are partnering with Trout Unlimited to develop a low-tech process-based restoration conceptual design for middle and upper Walters Creek. Project installations could include beaver dam analogs, post-assisted log structures, and gully erosion repair. Permitting for the project is also in development. A prospective floodplain restoration project at the confluence of Walters and Chorro Creeks is also being explored with partners. Drone surveys of selected areas of Walters Creek channel and Chorro Creek were completed in winter 2024/2025.
- Staff completed a Habitat Protection and Restoration Strategy (HPRS) that meets EPA requirements. The plan was approved by EPA. Staff developed a [webpage](#) to share highlights from the document.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The Estuary Program met the anticipated outputs and outcomes by staying involved in partner efforts related to the estuary and watershed as opportunities arise that support CCMP implementation and partner projects.

Deliverables: Activities described in Semi-annual report (see above). NEPORT reporting. Final [HPRS](#), approved by EPA. 2024 USFWS grant annual report (funded eelgrass, iceplant, and bay fish monitoring work).

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue to participate in the local restoration and management efforts listed above.

Pending Deliverables: None.

## Conservation and Restoration Project Development

Objective: To develop projects and funding for conservation and restoration.

Status: Ongoing

Progress Toward Milestones: Staff works closely with multiple partners from the watershed and beyond to develop conservation and restoration efforts to help meet CCMP goals.

In FY19, the Estuary Program completed a grant from the Resource Legacy Fund to work with the CSLRCD to educate private landowners on conservation practices such as rotational grazing, keyline ploughing, etc. and to identify potential projects. With support from the Estuary Program, the CSLRCD was awarded a state grant to implement a subset of these projects. The Estuary Program is working with partners to evaluate future projects to address stormwater runoff quality, volume, and rates to mitigate downstream impacts in a section of Chorro Creek watershed. This evaluation focuses on developed

areas of Army National Guard Base Camp San Luis Obispo (Camp SLO) including the CCC Center and Cuesta College, which ultimately discharge to Chorro Creek and Pennington Creek. As part of the evaluation, a hydrology and geotechnical report was completed.

The Estuary Program partnered with the San Luis Obispo Council of Governments (SLOCOG) on a transportation planning grant to study protection of important infrastructure from extreme weather events on South Bay Boulevard (the only road directly connecting the city of Morro Bay and the community of Los Osos) and adjoining roads that ring the estuary. The grant also supports extending the existing bay-wide circulation/flooding model. The Estuary Program began providing match to the CSLRCD in fall 2023 for an SCC grant to model lower Chorro Creek flooding due to extreme weather events. The project will also consider potential solutions to flooding in the lower Chorro Creek area. Staff are engaged in ongoing stakeholder meetings associated with both projects.

Estuary Program staff also supported SLO County planning efforts to improve the coastal access point and restore habitat at Pasadena Point in Los Osos. This access point is popular for launching kayaks and paddleboards from the beach. Because the access is through soft sand, users have been walking over salt marsh habitat to avoid the sand. The County seeks to improve the original access area to protect the marsh habitat from trampling. The Estuary Program and partners are seeking funding for the effort.

Estuary Program staff are working with San Francisco Estuary Institute (SFEI) to complete a historical ecology study of the lower Morro Bay watershed and areas surrounding the bay. The project will document landscape conditions prior to recent Euro-American modification, providing information to inform management and restoration planning that will enhance habitat resilience. SFEI has compiled 32 maps such as U.S. coastal survey t-sheets that have been georeferenced for the study. SFEI has also reviewed an extensive range of archival institutions and online databases for material on ecological patterns and processes. Through these archive visits and database searches, SFEI compiled approximately 75 maps, 130 textual accounts, and 300 photos and sketches. A draft map of habitat conditions is completed. A Technical Advisory Committee (TAC) has reviewed the draft mapping with a final version planned for fall 2025.

Staff have partnered with Caltrans and SLO County to address two fish passage barriers on San Luisito Creek at Highway 1 and Adobe Road. Staff hired a consultant to complete a geomorphic report, hydrology report, and two alternative conceptual designs. Materials have been shared with project partners. Extensive utilities were found at the site during the feasibility study. These challenges will be summarized and reviewed with project partners to determine next steps.

Researchers at Cal Poly are monitoring the presence of native Olympia oysters within Morro Bay. In addition, through a partnership with Grassy Bar Oyster Company, Cal Poly researchers are continuing to track survival and growth of native Olympia oysters in an estuarine shellfish aquaculture setting.

Deliverables: Activities described in this Semi-annual report (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Working with partners such as the CSLRCD to provide resources and support to private landowners and agency partners with the end goal of implementing projects to improve water quality.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to work with partners to further the progress of stormwater management and water conservation projects. The Estuary Program will work with partners to review and finalize the historical ecology habitat map.

## Fisheries Management

Objective: To implement projects to benefit native species and other opportunities as they arise.

Status: Ongoing

Progress Toward Milestones: In fall 2024, staff and partners completed a management effort for invasive pikeminnow, which prey on steelhead populations.

A steelhead growth and tracking study is underway in Chorro Creek. Passive Integrated Transponder (PIT) tags were inserted into netted steelhead, and antennae arrays were set up in lower Chorro Creek. The movement of steelhead are tracked as they move from Chorro Creek into the estuary and back again. This movement of steelhead was measured during the storms of late 2024 and early 2025, which indicated that steelhead in Chorro Creek were making their way out to the estuary and then returning to the creek. Fish that are re-captured after the initial PIT tagging are measured to assess growth rates over time. Monitoring will continue through spring 2025.

A project was completed to study fish populations in the estuary. In fall 2023 and spring 2024, fish were captured in locations throughout the bay using various methods. Fish were measured, identified, counted, and returned unharmed to the bay. Data analysis has been completed and a final technical report was issued earlier this year. The results will be shared in the SOTB report for 2026 as well as with partners.

Deliverables: 2023 to 2024 bay fish monitoring final report. 2024 pikeminnow suppression final report.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Control of the invasive pikeminnow population and a better understanding of sustainable ratios of pikeminnow to steelhead that support steelhead recovery. Improved understanding of steelhead use of lower Chorro Creek helps inform locations for future potential management actions that improve flows, fish passage, and water quality. Improved understanding of bay fish populations and how they have shifted over time with eelgrass decline and recovery.

Problems Encountered: None.

Activities Planned for Next Six Months: Review and share analysis of bay fish data. Continue tracking of tagged steelhead movement in Chorro Creek.

Pending Deliverables: None.

## Environmental Monitoring and Assessment

The Environmental Monitoring and Assessment tasks directly support the Core Programs of the Section 320 CWA, including “establishing water quality standards,” “identifying polluted waters and developing

plants to restore them,” “addressing diffuse, nonpoint sources of pollution,” “protecting wetlands,” and “protecting coastal waters through the National Estuary Program.” These efforts also align with the mandate of the PRAE Act by “addressing the effects of recurring extreme weather events on the estuary, including the identification and assessment of vulnerabilities in the estuary and the development and implementation of adaptation strategies,” and by “increasing public education and awareness of the ecological health and water quality conditions of the estuary.” Through these monitoring and assessment initiatives, the Estuary Program fulfills its role under Section 320 of the CWA – providing critical information to protect water quality, manage natural resources, and support the long-term health of the Morro Bay estuary and watershed.

## Monitoring Program Coordination

Objective: Continue coordination of the Monitoring Program and collect data that meets Quality Assurance Project Plan guidelines.

Status: Ongoing

Progress Toward Milestones: Staff conducted monitoring in the watershed and estuary to track long-term ambient trends and project implementation effectiveness. During the first half of FY25, the following occurred:

- Staff continued to work with long-time volunteers and trained new volunteers to conduct monitoring to support understanding of bay and creek health. Staff and volunteers were able to conduct the following monitoring in the first half of FY25: 42 monitoring trips for bay water quality, 98 for bacteria, 151 for creek water quality, 12 for recreational use, 17 for phytoplankton, 5 for eelgrass monitoring, and 6 for macroalgae monitoring.
- Staff coordinated with the California Department of Public Health (CDPH) and local shellfish growers on monitoring related to storm flows and bacteria. This included monitoring bacteria in Chorro Creek, Upper Los Osos Creek, and Warden Creek. Staff also monitored nitrates in the freshwater seeps along the bay shoreline to track improvements in water quality following the Los Osos Water Reclamation Facility coming online.
- Staff continued a long-term partnership with Cuesta College, providing lecture and class materials for an oceanography course.
- Staff continued a bacteria monitoring effort in partnership with the Cuesta College Biology Department. Cuesta students completed their fall 2024 semester of monitoring and began the spring 2025 semester work. The partnership continues the Estuary Program’s long-running ambient bacteria data set while providing monitoring and research opportunities for local community college students.
- Staff monitored sites watershed-wide for nutrients every other month to track long-term trends.
- Staff monitored water quality conditions monthly at three sites to assess impacts from agricultural land use.
- Staff conducted planning to develop a pesticide monitoring effort to track the impacts from wastewater, agriculture, and golf course chemical application in the watershed.
- Staff maintained a network of water depth sensors to track flows year-round. Staff are planning for spring and summer low flow monitoring to determine if adequate water is present for fish passage during crucial times.

- Staff conducted bay macroalgae monitoring to track macroalgae abundance over time and space. This is particularly of interest due to the potential of macroalgae to crowd out eelgrass.
- Staff conducted the annual fall eelgrass transect monitoring to assess long-term eelgrass health.
- Staff trained and coordinated volunteers for phytoplankton monitoring in the bay in partnership with a Cal Poly researcher to better understand phytoplankton dynamics and the impacts on local shellfish farms.
- Staff managed a monitoring effort to track recreational use at popular spots around the estuary. This data helps in estimating the economic value of recreational use of the bay.
- Staff deployed continuous monitoring sensors to measure temperature, dissolved oxygen, pH, chlorophyll-a, and conductivity at watershed sites.
- Staff are planning for spring bioassessment monitoring throughout the watershed at ten sites. Preparation included renewal of a CDFW permit needed for the work.
- Staff coordinated with the city of SLO and Cal Poly on bioassessment monitoring in the SLO watershed. Staff lent technical expertise and guidance in data analysis and reporting.

Deliverables: A quality dataset that meets the parameters outlined in the Quality Assurance Project Plan (QAPP). Activities described in Semi-annual report (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities for this task involved collecting and sharing data, resulting in an increased understanding of the long-term trends in ambient water quality in the watershed and estuary.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to conduct the following types of monitoring: creek water quality (including bimonthly nutrient monitoring and monthly agricultural site monitoring), creek and bay bacteria, bioassessment, bay water quality, seeps water quality, water toxicity, streamflow, phytoplankton, recreational use, macroalgae, and eelgrass monitoring.

Pending Deliverables: Creek Health and Bay Health memos for Water Year (WY)24. Bioassessment memo for WY24. Sediment report for WY23.

## Monitoring Program Reporting and Analysis

Objective: Analyze data and share results with grantors, partners, local landowners, and the public.

Status: Ongoing

Progress Toward Milestones: Estuary Program staff compiled data in formats appropriate for various audiences, including academic classes, researchers, regulators, landowners, and the general public. Staff responded to requests for program-generated data. Several blog posts on monitoring-related topics were created over the year, including popular monthly “Field Updates” posts that provide a rundown of what staff have been up to in the estuary and watershed. Analysis is underway on creek water quality, bioassessment, and sediment data.

Deliverables: Activities described in Semi-annual report (see above). Example monthly bacteria memo.



Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities conducted under this task involved analyzing and sharing data and results with partners, landowners, and the general public. These activities directly support the task outcome of making analysis available for others to support their own efforts to protect and restore Morro Bay and its watershed.

Problems Encountered: None.

Upcoming Activities: The Estuary Program plans to respond to requests for data, create blog posts to share data, and compile bioassessment, bacteria, and water quality data to share monitoring results.

Pending Deliverables: Sediment report for WY23. Creek Health and Bay Health memos for WY24. Bioassessment memo for WY24. Eelgrass report for 2024.

## Monitoring Program Data Management

Objective: Maintain data in Surface Water Ambient Monitoring Program (SWAMP)-compatible format.

Status: Ongoing

Progress Toward Milestones: Estuary Program staff prepared monitoring data and completed submittal to CEDEN. Staff worked with the State Water Resources Control Board (SWRCB) on submittal of our bioassessment, toxicity, and water quality data. Data through the end of WY24 has been submitted to CEDEN. Staff conducted follow-up with Water Board staff on the incorporation of program data into the Integrated Report (IR) process.

Deliverable: Activities described in Semi-annual report (see above). Data submittal to [CEDEN](#).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities such as storing and submitting data accomplished the outcome of making available to the public and state a high-quality data set that supports Total Maximum Daily Load (TMDL) analysis, 303(d) assessment, land management, etc.

Problems Encountered: The SWRCB had a backlog of update requests for CEDEN, delaying the implementation of Estuary Program updates required for data submittal for the IR process. Staff worked with Central Coast Regional Water Quality Control Board (CCRWQCB) staff to resolve the issue so that all current Estuary Program data could be submitted.

Activities Planned for Next Six Months: The Estuary Program will continue to manage data and work with the SWRCB to upload data to CEDEN.

Pending Deliverables: Submittal of WY24 and WY25 data to CEDEN.

## Monitoring Program Quality Assurance

Objective: Update and submit a Quality Assurance Project Plan, work with reviewers to approve document, and implement necessary quality assurance measures.

Status: Ongoing

Progress Toward Milestones: The Estuary Program continues to implement the quality assurance (QA) measures contained in the QAPP to ensure data quality. Staff compiled three addenda to the QAPP for short-term monitoring efforts: phytoplankton, bay genetic analysis, and bay fecal coliform monitoring. All three were approved by EPA. Staff also continue to develop a QAPP to address upcoming pesticide monitoring analysis. Staff completed the 2025 QAPP update and submitted it to EPA's Office of QA for review and approval.

Deliverables: Activities as described in this Semi-annual report (see above). Three QAPP addenda, submitted and approved by EPA's Office of QA. 2025 QAPP update submitted and awaiting approval by EPA.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: An accurate and up-to-date QAPP document directly supports the task outcome of producing a high-quality data set to support efforts throughout the watershed, including 303(d) and TMDL assessment.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will conduct the QA measures needed to ensure the quality of program-generated data. Staff will update any additional addenda for 2025. Staff will work with EPA staff to finalize the 2025 QAPP update.

Pending Deliverables: Update to QAPP and addenda.

## Project Effectiveness Monitoring

Objective: Complete monitoring to demonstrate project effectiveness for various restoration projects.

Status: Ongoing

Progress Toward Milestones: Staff conducted monitoring of the freshwater seeps at the bay's edge to assess the impacts of the Los Osos Water Reclamation Facility. The Estuary Program conducted monitoring for a project on Pennington Creek to assess the impacts of a water diversion improvement project.

Deliverables: Activities as described in the Semi-annual report (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities under this task support the outcome of conducting monitoring and developing analysis that informs future management and restoration efforts.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue monitoring the seeps. Staff will collect Pennington Creek flow data and share it with Trout Unlimited to manage a water diversion. Staff will coordinate with Cal Poly researchers on future monitoring and potential

publications. Staff will also communicate with project partners to share data results and coordinate efforts.

Pending Deliverable: None.

## Eelgrass Monitoring and Research

Objective: Monitor eelgrass to determine its condition and distribution in the bay.

Status: Ongoing

Progress Toward Milestones: Staff coordinated with Cuesta College faculty on their eelgrass research efforts. This includes genetic analysis of the prokaryotic and wasting disease slime mold communities in Morro Bay eelgrass. Cal Poly conducted drone flights in December 2024 and January 2025, and analysis is underway to create a baywide eelgrass map. Staff completed the winter macroalgae monitoring to track its presence throughout the bay and how it changes over time. Staff communicated with the Army Corps of Engineers (ACOE) on spring dredging of the bay mouth to support efforts to ensure that the work does not negatively impact sensitive species and habitats in the bay. Staff are developing a 2025 baywide eelgrass mapping effort and are working to complete the 2024 Eelgrass Report.

Deliverables: Monitoring activities documented in the Semi-annual report (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Monitoring and planning for mapping efforts as well as working with research partners all support the outcome of better understanding eelgrass stressors and dynamics. This improved understanding directly supports the outcome of development of restoration and monitoring strategies and goals.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will complete the 2024 eelgrass report. Staff will conduct 2025 eelgrass mapping and monitoring efforts.

Pending Deliverables: Baywide eelgrass map for 2025. Eelgrass report for 2024.

## Partner Research Efforts

Objective: Support science partners in pursuing research efforts relevant to the goals of the Estuary Program.

Status: Ongoing

Progress Towards Milestones: Estuary Program staff coordinated and collaborated with Cal Poly, CDFW, the National Oceanographic and Atmospheric Administration (NOAA), Cuesta College, ACOE, the city of Morro Bay, and other project partners to research bay eelgrass and related water quality issues. Staff sought results of research efforts in Morro Bay and other relevant coastal areas related to nutrients, macroalgae, sedimentation, bay water quality, and other data. Staff coordinated with Cal Poly on bay water quality monitoring efforts. Staff collaborated with partners such as Cal Poly and USGS on future

research efforts related to eelgrass, extreme weather events, and marsh habitat. Monitoring of sediment accretion and water levels was conducted to support a project with the U.S. Geological Survey (USGS) to study impacts of ocean water levels and storms to the tidal marsh habitat. Cal Poly completed the 2024 to 2025 drone flights. Staff collaborated with a Cal Poly team on a modeling project to automate eelgrass classification from drone imagery. Staff collaborated with the UCSB dune resiliency project on a drone flight on the sandspit in fall 2024. Staff coordinated with researchers from Southern California Coastal Water Research Project (SCCWRP), the California Estuary Monitoring Workgroup, the Estuary Marine Protected Area monitoring effort, EPA, and others on potential collaborative monitoring efforts.

The Estuary Program has coordinated with Cal Poly on numerous ongoing monitoring efforts, including bay nutrient monitoring, Olympia oyster research, microplastic research, and phytoplankton monitoring. Staff coordinated with CDPH on a project to sample shellfish growing waters following storms. The data will help CDPH determine whether the current rainfall closure guidelines are still relevant or whether they need to be updated.

The Estuary Program continued supporting a neighboring watershed whose stakeholders recently established a bioassessment monitoring effort. Estuary Program staff supported data management and field training for the group's bioassessment monitoring in spring 2025, conducted by Cal Poly students in partnership with the city of San Luis Obispo.

Research efforts conducted in the Morro Bay estuary and watershed include:

- USGS tidal marsh elevation and plant species monitoring to help assess future impacts from changing ocean water levels and extreme weather events.
- Cal Poly research into the impact of crabs on eelgrass.
- Cal Poly research on microplastics in Morro Bay.
- Cal Poly research on Olympia oysters in the bay.
- Cal Poly research on bay nutrient levels.
- Cal Poly research on bay phytoplankton populations in water and sediment.
- UCSB environmental DNA monitoring related to Morro Bay eelgrass.
- Cuesta College research on impact of *Labrynthula spp.* wasting disease on eelgrass.
- Cal Poly research on water quality in Morro Bay, in partnership with Central and Northern California Ocean Observing System (CeNCOOS).
- SCCWRP research related to ocean water quality on the Central Coast of California.
- EPA analysis of bay water quality data throughout the NEPs.
- California Estuary Monitoring Workgroup efforts to coordinate monitoring and research throughout the state.

We also track research that is occurring elsewhere but is relevant to Morro Bay, including nutrient target development in Elkhorn Slough and pathogen TMDL development in Southern California.

Deliverables: Water quality data collected by Cal Poly and shared on the CeNCOOS web portal for the [front bay](#) and [back bay](#). Activities as described in this semi-annual report.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Coordination with research partnership efforts directly supports the task outcome of improving understanding of resources in order to better target efforts such as monitoring and restoration.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will coordinate with Cal Poly, Cuesta, and other partners on ongoing research efforts. Staff will continue to work with USGS staff on salt marsh monitoring.

Pending Deliverables: Eelgrass report for 2024.

## State of the Bay Analysis

Objective: Conduct analysis of trends and project effectiveness data for the triennial State of the Bay environmental report card.

Status: New

Progress Towards Milestones: Estuary Program staff are working to compile data, conduct quality control checks, and begin analysis for the 2026 SOTB report. Staff are reaching out to partners to gather all available data sets focused on restoration, research, and monitoring.

Deliverables: None.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Compiling data and analysis enhances understanding of progress in watershed and estuary health. The results update EPA and other partners on the state of Morro Bay and the lands that surround it. Results can also support management of habitats and development of future monitoring, restoration, and education efforts.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will complete analysis and compile report content.

Pending Deliverables: 2026 SOTB report in printed and online versions.

## Public Participation, Education and Outreach

The Public Participation, Education and Outreach tasks directly support the Core Programs of Section 320 of the CWA by “protecting coastal waters through the National Estuary Program.” These efforts ensure that residents, visitors, educators, and community members have the knowledge and tools to actively participate in the protection and stewardship of Morro Bay. Additionally, stewardship activities align with broader CWA goals by addressing nonpoint source pollution and promoting community-driven conservation actions. Efforts also align with the PRAE act to “increase public education and awareness of the ecological health and water quality conditions of the estuary.” Through these education and outreach efforts, the Estuary Program advances the objectives of the Clean Water Act and the PRAE Act by fostering environmental awareness, promoting science-based stewardship, and ensuring the long-term protection of the Morro Bay estuary and its watershed.

## Communications

Objective: Communicate with a variety of audiences using presentations, printed materials, online presence, social media, and other avenues.

Status: Ongoing

Progress Toward Milestones: Estuary Program staff regularly conducted the following communications tasks in the first half of FY25:

- Created regular blog posts that were shared via email, website, and social media. 548 subscribers receive the blog via email each week. The blog is posted on Facebook and corresponding content is posted to Instagram and LinkedIn when appropriate for the platforms. Popular blog posts have as many as 2,500 reads, not including subscribers. In the first half of FY25, we posted 13 blogs.
- Developed fall and winter issues of a quarterly newsletter that was posted on the website, delivered to over 260 email subscribers, and distributed on social media channels.
- Maintained a Facebook feed for the Estuary Program that currently has 2,687 followers. Utilized two-way communication with these users, such as recognition of beach cleanup participants and Mutts for the Bay sponsors.
- Maintained an Instagram feed for the Estuary Program that currently has 3,664 followers and a Mutts for the Bay Instagram account that currently has 170 followers.
- Maintained a LinkedIn account with 466 followers.
- Three news stories were published that covered Estuary Program-specific content and projects in the watershed.
- Continued updates on the program website to refresh current content. In the first half of FY25, the website had over 37,400 visits.
- Continued our Science on Tap science talk series that rotates among different venues around the watershed and county. Staff hosted an event featuring the HPRS and habitat trivia in October 2024 that had 18 attendees.
- Organized and hosted a Science Explorations science talk event was held in January 2025 that focused on bay water quality, with 22 attendees.

Deliverables: Blog posts published on a regular basis at [www.mbnep.org/blog](http://www.mbnep.org/blog). Website and social media statistics (see above). Relevant news stories available online and press releases submitted at [www.mbnep.org/news](http://www.mbnep.org/news). Quarterly newsletter at <http://www.mbnep.org/newsletter>.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities listed above enhanced communication with residents, visitors, and the general public. This works toward the task outcome of increasing their understanding of their roles as stewards of the estuary and encouraging behaviors that protect clean water.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue the communications tasks outlined above including blog posts, published reports, seasonal newsletters, upcoming events, and stewardship tips.

Pending Deliverables: Regular blog posts. News stories posted to website.

## Education

Objective: Develop partnerships and services to support formal education and other education efforts.

Status: Ongoing

Progress Toward Milestones: Efforts to support education in the first half of FY25 included the following:

- Hosted eight field trips in various locations around the watershed for school groups and youth organizations, reaching 205 individuals. Topics included watershed health, local wildlife, nature journaling, tide pooling, and estuarine habitats.
- Presented to Cuesta College classes on water quality monitoring, the Estuary Program, and science careers that reached 108 students.
- Held one outing with adults from the El Camino Homeless Organization shelter in the Elfin Forest to learn about the Morro Bay watershed and habitats. This reached six participants.
- Staff are active participants in the SLO County Environmental Education Coalition hosted through One Cool Earth.
- Hosted a marine biology class project through SLO High School that included tide pool monitoring field work with 30 students.
- Trained eight Camp Ocean Pines naturalists for this school year on watersheds and the Morro Bay estuary.
- Trained 15 garden educators at One Cool Earth on watersheds and the Morro Bay estuary in preparation for the joint Watershed Week curriculum at the 36 SLO County schools.
- Continued to work with Camp Ocean Pines to develop a watershed and marine lab at their Cambria campus. Estuary Program staff supported curriculum development and activities related to estuary and watershed science.
- Hosted the 2025 teacher training/educator workshop series. The series of three workshops provided curriculum and support for teaching nature journaling, ocean literacy, and stewardship through restoration. The same cohort of 22 educators attended all three workshops of the series. The attendees included 19 traditional schoolteachers. The remaining attendees were a combination of informal educators, docents, volunteers, and environmental educators. The participants were from SLO and Santa Barbara counties. Participants received free memberships to the Southwest Marine Educators Association as well as a Project WET water education teaching guide.
- Continued to work with California State Park Interpreters at the Morro Bay State Park Natural History Museum and the SLO Coast District on educational programming.

Deliverables: Fieldtrip and presentation statistics (see above in the Communications section).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities under this task directly support the outcome of providing formal education partnerships to share watershed and estuary-related messaging with students and youth.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue the education tasks outlined above. We also plan on hosting a variety of family-friendly field trips during the summer.

Pending Deliverables: None.

## Nature Center Maintenance & Operations

Objective: Maintain the content and displays in the Nature Center.

Status: Ongoing

Progress Toward Milestones: Staff conduct activities to maintain the Nature Center. In the first half of FY25, the Nature Center had over 7,200 visitors. The Nature Center was used as a meeting space for Camp Ocean Pines and One Cool Earth staff trainings, as well as for field trips with youth. Staff continue to update the Kid's Corner with new activities. A new logo and entrance artwork will be installed in the next six months along with other needed maintenance. Estuary Program staff are planning for the addition of new exhibits and updates to maps and interpretive information.

Deliverables: Visitor statistics for the Nature Center (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The maintenance and updates to the Nature Center conducted as part of this task directly support the outcome of providing a learning center for the estuary that contains updated and engaging exhibits.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program will continue activities to maintain the Nature Center. The Estuary Program will continue to provide field trips and educational programming in the Nature Center.

Pending Deliverables: None.

## Community Engagement & Stewardship

Objective: Support outreach projects in the community that further the goals of the Management Plan.

Status: Ongoing

Progress Toward Milestones: Efforts to support outreach projects in the community included:

- Estuary Program staff continued discussions with ECOSLO to plan adopt-a-spot cleanups across SLO County. The Estuary Program will be the organizational liaison for any adopt-a-spot cleanup groups formed in Morro Bay and Los Osos. Site selection and program launch is anticipated for the second half of FY25.
- Staff participate in the SLO Marine Protected Area (MPA) Collaborative to work with partners on initiatives related to education and outreach.



- Staff have been active members in the newly formed Environmental Education Coalition of SLO County, hosted by One Cool Earth. The group works to effectively communicate and collaborate on environmental education initiatives and programs in the county.
- Staff partnered with local organizations to engage the community, including Woods Humane Society, Sea Otter Savvy, Camp Ocean Pines, Creek Lands Conservation, El Camino Homeless Organization, SLO Beaver Brigade, and others.
- Staff hosted one cleanup at Morro Rock in the first half of FY25, with 65 students, parents, and teachers from Monarch Grove Elementary School collecting 15 pounds of trash.

Deliverables: Outreach statistics (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities conducted under this task directly support the outcome of coordinating with partner organizations on developing and sharing key messages.

Problems Encountered: Staff changes at ECOSLO and the Estuary Program have delayed progress on the Adopt-a-Spot cleanup partnership.

Activities Planned for Next Six Months: Staff will develop an effort to establish and manage the Los Osos and Morro Bay groups of adopt-a-spot cleanup crews. Staff will continue to be active members of the SLO MPA Collaborative as well as the Environmental Education Coalition and to host and attend community events.

Pending Deliverables: None.

## Mutts for the Bay

Objective: Support pet waste management program to prevent bacterial contamination in the bay.

Status: Ongoing

Progress Toward Milestones: The Estuary Program continued to manage the Mutts for the Bay program, which included accepting and managing donations, installing and maintaining dispensers, and coordinating volunteers. In 2018, the program received a grant from a private foundation to fund staff time and related costs for three years. In March 2021, the grant was extended to support the Mutts for the Bay Program through 2025. The grant also funds the development and sharing of outreach materials with pet owners. There are 36 dispensers that are maintained by the program. More than 150,000 bags were given away to pet owners in the first half of FY25. These bags prevented an estimated 40,000 pounds of pet waste from reaching the estuary. The Estuary Program continued its Mutts for the Bay Instagram account (see above in Communications). The Estuary Program continued its partnership with Woods Humane Society on educating pet owners on eco-friendly practices.

Staff continued social media campaigns including sponsorship appreciation, Mutts for the Bay trivia, and Fun Fact Fridays. Staff updated and added new activity pages to the Mutts for the Bay coloring book about how to be an eco-friendly dog owner and the impacts of pet waste on the environment. Staff will continue distributing these activity books throughout FY25. Staff will continue to partner with the SLO

County Stormwater Program to fund the bags in all the Los Osos dispensers. An interactive map of dispenser locations is available at <https://www.mbnep.org/mutts-for-the-bay/>.

Deliverables: Mutts for the Bay program statistics (see above). Mutts for the Bay educational materials available [online](#).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities under this task directly support the outcome of encouraging responsible behavior by pet owners to reduce bacterial loading to the estuary, thus improving water quality and protecting beneficial uses such as shellfish farming and recreation.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will continue its financial management and coordination of activities to maintain the program. Staff will complete design and publication of a Dog-friendly Trails brochure to distribute to the public. The partnership with Woods Humane Society's educational programming will be further developed to bring Mutts for the Bay curriculum and materials to students across SLO County. Estuary Program staff will continue to table at pet-focused events and farmers markets.

Pending Deliverables: None.

## State of the Bay Planning

Objective: Planning for outreach and events associated with the upcoming State of the Bay report, including audience engagement strategies, timelines, and coordination needs.

Status: New

Progress Toward Milestones: Every three years, the Estuary Program hosts a SOTB event series to share the results of an environmental report card on the health of the estuary and watershed. Initial planning is underway for report design and printing, potential events, and possible partnerships. Events may include science talk events, Earth Week events, farmers market tabling, and more to engage with a diversity of audiences about the SOTB report results.

Deliverables: None.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities under this task directly support the outcome of sharing the results of monitoring by the Estuary Program and its partners, with the goal of increasing education on nonpoint source pollution, restoration, etc.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will continue planning for report production, advertisement, event coordination, etc. for the spring 2025 events.

Pending Deliverables: 2026 SOTB report card, updated website with 2026 version of report. Posters, advertisements, etc.

## Program Management

The Program Management tasks provide the foundation for implementing all actions outlined in this workplan. These efforts directly support the full range of priorities established under Section 320 of the CWA and the PRAE Act by ensuring the effective administration, oversight, and execution of projects that protect water quality, restore habitat, engage communities, and improve coastal resilience.

### Manage Committees and Build Partnerships

Objective: Hold quarterly meetings and support partnerships.

Status: Ongoing

Progress Toward Milestones: Staff compiled meeting materials and coordinated quarterly meetings of the Executive Committee (EC) throughout the year. Technical Advisory Committee (TAC) members were called on as needed for review of Community Project applications, restoration, monitoring, data analysis, and technical plans.

Partnerships are also supported through collaborative project development and technical support. The Estuary Program continues its work on partnership projects developed and implemented in collaboration with partner organizations. These include:

- Staff served on the Pacific Marine and Estuarine Fish Habitat Partnership Science and Data Committee.
- The Estuary Program is a partner on the Santa Monica Bay NEP's vessel pump-out monitoring program. Staff monitor three pump-outs three times a year and share the results via a publicly-accessible app.
- The Estuary Program is working with Caltrans, SLO County, and other partners to study the feasibility of removing fish passage barriers on San Luisito Creek.
- The Estuary Program staff serve on a TAC for a lower Chorro Creek floodplain improvement project with CSLRCD.
- The Estuary Program staff serving on a TAC for SLOCOG's planning study of South Bay Boulevard to support public access and transportation given extreme weather event impacts.
- Staff served on the California Coastal Dune Science Network Advisory Team. The organization strives to expand understanding of coastal dunes and their role in building a resilient, transitional, and adaptive coast for the future.
- Staff participate in the SLO County Weed Management Area program to discuss emerging invasive species and partner on implementation projects.
- Staff served on the board of the California Shore and Beach Preservation Association.

Deliverables: Minutes, agendas, staff reports, and materials completed for each EC meeting. List of partnerships and project activities (see above).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities conducted under this task directly supported the task outcome of providing input and direction for the program and ensuring that partnerships are well supported.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue to coordinate quarterly meetings and work with Management Conference members. We will continue to work with the TACs to develop projects, funding, and collaborations. We will continue to partner with the CSLRCD to seek funding to implement projects developed with funding from Resource Legacy Fund and support work at the Los Osos Wetland property. Staff will continue monitoring efforts in partnership with USGS to support modeling and planning to address the impact of changing ocean levels and extreme weather events on the tidal marsh.

## Grants and Contracts Administration and Financial Management

Objective: Develop workplan, administer grants, and complete annual financial management tasks.

Status: Ongoing

Progress Toward Milestones: Staff worked on financial reporting, progress reports to the EPA and the Management Conference, and participation in NEP conference calls and committees. We coordinated with EPA to provide required materials for oversight of the 320 base funding and IIJA grants and managed numerous outside grants to the Estuary Program to support our project work. Staff developed semi-annual reports on the second half of FY24 for the IIJA and 320 base funding grants. Staff managed the 320 base funding workplan for FY25 and the IIJA workplans and budgets for FY22 to FY24. Staff implemented the 320 base funding grant for FY25, which was approved by the Management Conference. Staff completed development of a workplan and budget for FY25 for the IIJA funding, which was reviewed and approved by the Management Conference in November. The Executive Director attended the fall 2024 ANEP meeting on the East Coast and the spring 2025 Association of National Estuary Programs (ANEP) meeting in Washington, D.C.

Staff began the 2025 Program Evaluation (PE) process. The PE team was identified and the schedule was developed. Staff compiled information on the status of workplan and CCMP implementation, and the PE narrative is under development. The narrative will be submitted by the mid-April due date and planning is underway for a July site visit by EPA staff and the ex-officio member.

Deliverables: Minority Business Enterprises-Women Business Enterprises (MBE-WBE) submitted to EPA Region 9 Grants Office. Semi-annual reports for FY24 320 base and IIJA funding. Workplan for the IIJA grant for FY25.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: Activities under this task directly supported the outcome of conducting grant administration and financial management tasks in a timely and accurate manner.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program will implement the FY25 IJA and FY25 320 base funding workplans. The Estuary Program will create a 320 base funding workplan for FY26. Staff will develop semi-annual reports for FY25. Staff will submit the PE narrative, meet with EPA staff to review, and plan and implement the PE site visit.

Pending Deliverables: Annual FFR and MBE-WBE. FY26 320 base funding workplan. Semi-annual reports. PE narrative.

## General Administration and Human Resources Management

Objective: Maintain accurate financial and human resources records and manage personnel.

Status: Ongoing

Progress Toward Milestones: Staff maintained ongoing financial and administrative functions including recordkeeping, filing, bookkeeping, and equipment and office space upkeep, as well as interacting with the general public. In addition, the Director spent time managing staff performance and workplan progress. Other HR tasks included training, professional development, recruitment, and keeping personnel policies and procedures up to date. Staff facilitated a FY24 single federal audit for the organization, which is expected to be completed in the spring.

Deliverables: Summary of task activities (see above). Bookkeeping and other recordkeeping tasks contribute to the completion of the deliverables included in the previous tasks (financial management).

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The administrative and human resources management tasks conducted in the first half of FY25 directly supported the outcome of providing the administrative support that allows the program to function smoothly so that staff can focus on attaining the goals of the organization.

Problems Encountered: None.

Activities Planned for Next Six Months: Staff will conduct all bookkeeping and recordkeeping tasks required for grant management. Staff will conduct all HR tasks including training and professional development. Staff will finalize the FY24 single federal audit.

## Tracking Implementation of the Management Plan and Workplan

Objective: Keep track of Workplan and Comprehensive Conservation and Management Plan (CCMP) implementation.

Status: Ongoing

Progress to Date: Staff tracked the progress of CCMP implementation through biannual reports to the EC. Staff compiled information and developed a “dashboard” to share with the public highlights of CCMP Action Plan implementation, which is now available on the website at <https://www.mbnep.org/comprehensive-conservation-management-plan/>

Deliverables: Semi-annual reports to EPA submitted in fall 2024. Biannual EC reports. [Webpage](#) with public-friendly highlights on CCMP implementation.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The tasks completed directly support the outcome of conducting tracking to ensure that tasks are completed in a timely and accurate manner.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to report to the EC on workplan progress and develop semi-annual reports.

Pending Deliverables: IJJA and 320 base funding semi-annual reports. FY26 320 base funding workplan.

## Community Projects

Objective: Provide support for Community Projects that further the goals of the Management Plan and engage the community.

Status: Ongoing

Progress Toward Milestones: The project for FY25 is now underway. The effort is a partnership with California State Parks. The Estuary Program funded the reprinting of a popular MPA activity book for kids. Nearly 24,000 copies of the book were printed and are now being distributed by State Parks employees throughout the San Luis Coast District throughout the year. Staff are working to develop projects for FY26.

Deliverables: None.

Comparison of Actual Accomplishments with Anticipated Outputs/Outcomes: The activities conducted under this task included working with existing funding recipients and coordinating with partners to develop new projects that support CCMP goals and Action Plans. These activities directly supported these goals, thus meeting the task outcomes of developing and completing projects that meet program guidelines on community involvement and CCMP nexus.

Problems Encountered: None.

Activities Planned for Next Six Months: The Estuary Program plans to continue to work with partners on ongoing Community Projects. Staff will work with partners to develop FY26 projects and with the EC and TAC to approve them.

Pending Deliverables: Final report for completed Community Project.

## Lab Competency Documentation

The Estuary Program utilizes laboratories that have met the certification requirements for their technical area. During FY25 the following labs were used:

For Water Quality: The Estuary Program works with Fruit Growers Laboratory (FGL) and the County of SLO Public Health Laboratory. Both labs maintained Environmental Laboratory Accreditation Program (ELAP) certification during this time period. The certification for FGL is [available online](#). The certification for the County of SLO Public Health Laboratory is under ELAP certification number 2114 and is [available online](#). The Marine Pollution Studies Laboratory at Granite Canyon Laboratories (GC) conducts toxicity monitoring for the Estuary Program. This laboratory is [ELAP-certified](#) under certificate number 2821.

For Bioassessment: The Estuary Program works with EcoAnalysts, Inc. for analysis of bioassessment samples. Bioassessment labs certify their individual taxonomists rather than the lab as a whole. They provided their taxonomists' certifications. Any of the lab's taxonomists listed could be assigned to our projects. The list of taxonomists' certifications is provided with the deliverables for this semi-annual report.

For Bay Nutrient Analysis: The UCSB Marine Sciences Laboratory conducts analysis of Morro Bay waters for nutrients. Although the laboratory is not ELAP-certified, it undergoes similar steps to ensure data quality. Their detailed QA manual was provided and reviewed by Estuary Program staff, and the lab's QA activities were deemed sufficient to ensure data quality.

## Budget Overview

Table 1: Costs expended during this semi-annual report period (October 1, 2024 to March 31, 2025) and cumulative since the beginning of the grant in October 2021.

Category	Subcategory	FY25 Period 1 320 Funds	FY25 Period 1 Cash Match	FY25 Period 1 TOTAL	Cumulative 320 Funds	Cumulative Cash Match	Cumulative TOTAL
Personnel	Salaries	\$240,125	\$4,969	\$245,094	\$1,571,818	\$53,724	\$1,625,542
	Fringe	\$24,843	\$120	\$24,963	\$157,728	\$1,221	\$158,949
	Management Conference	\$0	\$0	\$0	\$0	\$0	\$0
	<i>Subtotal</i>	<i>\$264,968</i>	<i>\$5,089</i>	<i>\$270,057</i>	<i>\$1,729,546</i>	<i>\$54,945</i>	<i>\$1,784,491</i>
Travel	<i>(category includes local mileage)</i>	\$1,041	\$172	\$1,213	\$29,297	\$1,455	\$30,752
Supplies	Software	\$794	\$0	\$794	\$7,304	\$0	\$7,304
	Monitoring supplies	\$5,889	\$317	\$6,206	\$47,148	\$12,951	\$60,099
	Misc. office supplies, computers	\$2,601	\$0	\$2,601	\$22,140	\$0	\$22,140
	<i>Subtotal</i>	<i>\$9,284</i>	<i>\$317</i>	<i>\$9,601</i>	<i>\$76,592</i>	<i>\$12,951</i>	<i>\$89,543</i>
Contractual	Audit/Taxes/Accounting/Fees	\$12,504	\$3,401	\$15,905	\$67,578	\$22,996	\$90,574
	Education and Outreach	\$2,884	\$16,522	\$19,406	\$43,912	\$60,476	\$104,388
	Monitoring and Research	\$3,025	\$1,771	\$4,796	\$33,902	\$67,475	\$101,377
	Restoration and Protection	\$133	\$0	\$133	\$55,337	\$1,048,755	\$1,104,092
	<i>Subtotal</i>	<i>\$18,546</i>	<i>\$21,694</i>	<i>\$40,240</i>	<i>\$200,729</i>	<i>\$1,199,702</i>	<i>\$1,400,431</i>
Other	Rent	\$27,636	\$0	\$27,636	\$178,254	\$0	\$178,254
	Utilities	\$1,678	\$0	\$1,678	\$10,883	\$0	\$10,883
	Postage	\$156	\$0	\$156	\$878	\$0	\$878
	Copying, Printing	\$1,164	\$0	\$1,164	\$7,760	\$0	\$7,760
	Training, Prof. Dev.	\$980	\$0	\$980	\$5,403	\$0	\$5,403
	Telephone, Internet	\$2,437	\$0	\$2,437	\$16,131	\$0	\$16,131
	Repairs and Maintenance	\$1,184	\$0	\$1,184	\$14,720	\$0	\$14,720
	Insurance	\$3,902	\$0	\$3,902	\$11,786	\$0	\$11,786
	Vehicle maintenance, fuel	\$824	\$0	\$824	\$10,633	\$0	\$10,633
	Community Projects	\$0	\$0	\$0	\$0	\$53,142	\$53,142
	<i>Subtotal</i>	<i>\$39,961</i>	<i>\$0</i>	<i>\$39,961</i>	<i>\$256,448</i>	<i>\$53,142</i>	<i>\$309,590</i>
	<b>TOTAL</b>	<b>\$333,800</b>	<b>\$27,272</b>	<b>\$361,072</b>	<b>\$2,292,612</b>	<b>\$1,322,195</b>	<b>\$3,614,807</b>

Table 2: Costs by program area and task. Match numbers do not include in-kind match.

Program Area	Project	FY25 Period 1 320 Funds	FY25 Period 1 Match	FY25 Period 1 TOTAL	FY25 Overall TOTAL
Education and Outreach	Communications	\$1,789	\$0	\$1,789	\$1,789
	Bay Friendly Recreation	\$1,095	\$0	\$1,095	\$1,095
	Education and Nature Center	\$0	\$0	\$0	\$0
	Community Volunteer Program	\$0	\$0	\$0	\$0
	Mutts for the Bay	\$0	\$16,522	\$16,522	\$16,522
	Other E&O Tasks	\$0	\$0	\$0	\$0
	<i>Subtotal</i>	<i>\$2,884</i>	<i>\$16,522</i>	<i>\$19,406</i>	<i>\$19,406</i>
Monitoring and Research	Benthic Invertebrate Monitoring	\$0	\$1,771	\$1,771	\$1,771
	Water Quality Monitoring	\$3,025	\$0	\$3,025	\$3,025
	Equipment	\$0	\$0	\$0	\$0
	Eelgrass Monitoring & Analysis	\$0	\$0	\$0	\$0
	<i>Subtotal</i>	<i>\$3,025</i>	<i>\$1,771</i>	<i>\$4,796</i>	<i>\$4,796</i>
Habitat Protection and Restoration	Restoration & Conservation Planning	\$0	\$0	\$0	\$0
	Restoration Maintenance & Monitor	-\$134	\$0	-\$134	-\$134
	Other Restoration	\$367	\$0	\$367	\$367
	Fisheries Management	-\$100	\$0	-\$100	-\$100
	<i>Subtotal</i>	<i>\$133</i>	<i>\$0</i>	<i>\$133</i>	<i>\$133</i>
Program Administration	Community Projects	\$0	\$0	\$0	\$0
	<b>TOTAL</b>	<b>\$6,042</b>	<b>\$18,293</b>	<b>\$24,335</b>	<b>\$24,335</b>