SANTA MONICA BAY
NATIONAL ESTUARY PROGRAM

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Annual Report
October 1, 2024 – September 30, 2025

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Prepared for the United States Environmental Protection Agency

Acronyms

BCGP	California Boating Clean and Green Program
CalCOFI	California Cooperative Oceanic Fisheries Investigations
Caltrans	California Department of Transportation
CCC	California Coastal Commission
CEC	Contaminants of Emerging Concern
CCMP	Comprehensive Conservation and Management Plan
CDBW	California Department of Boating and Waterways
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CMP	Santa Monica Bay Comprehensive Monitoring Program
CRI	Loyola Marymount University's Coastal Research Institute
CSU	California State University
CVA	Clean Vessel Act
DFA	Division of Financial Assistance of the State Water Resources Control Board
ECS	Environmental Charter Schools
EIR	Environmental Impact Report
EMPA	Estuarine Marine Protected Area
EWMP	Enhanced Watershed Management Plans
FCEC	Fish Contamination Education Collaborative
FMP	Fishery Management Plan
FY	Fiscal Year
HAB(s)	Harmful Algal Blooms
HtB	Heal the Bay
JWPCP	Joint Water Pollution Control Plant (Carson)
LACDBH	Los Angeles County Department of Beaches and Harbors
LACFCD	Los Angeles County Flood Control District
LACSD	Los Angeles County Sanitation Districts
LADWP	Los Angeles Department of Water and Power
LARWQCB	Los Angeles Regional Water Quality Control Board
LASAN	City of Los Angeles Sanitation
LAWA	City of Los Angeles – Los Angeles World Airports
LCP	Local Coastal Pla
MPA	Marine Protected Area
MRCA	Mountains Recreation and Conservation Authority
MWD	Metropolitan Water District of Southern California
NEP	National Estuary Program
NOAA	National Oceanic and Atmospheric Administration
NPS	National Parks Service
NSMBW	North Santa Monica Bay Watershed
OWDS	On-site Wastewater Disposal Systems

PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
Prop	Proposition Grant
PVPLC	Palos Verdes Peninsula Land Conservancy
PVSTIEG	Palos Verdes Shelf Technical Information Exchange Group
QAPP	Quality Assurance Project Plan
ROE	Right of Entry (permit)
RCDSMM	Resource Conservation District of the Santa Monica Mountains
SCWP	Safe Clean Water Program
SCC	California State Coastal Conservancy
SCCOOS	Southern California Ocean Observing Systems
SCCWRP	Southern California Coastal Water Research Project
SCMI	Southern California Marine Institute
SFEP	San Francisco Estuary Partnership
SMBNEP	Santa Monica Bay National Estuary Program
SMBRC	Santa Monica Bay Restoration Commission
SMMC	Santa Monica Mountains Conservancy
State Parks	California Department of Parks and Recreation
SWRCB	State Water Resources Control Board
TAC	Santa Monica Bay Restoration Commission Technical Advisory Committee
TBF	The Bay Foundation
TMDL	Total Maximum Daily Load
UCLA	University of California, Los Angeles
USC	University of Southern California
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VRG	Vantuna Research Group, Occidental College
WASC	Safe Clean Water Program’s Watershed Area Steering Committee
WCB	Wildlife Conservation Board
WMP	Watershed Management Plans

Overview

This semi-annual report provides an update on the Santa Monica Bay National Estuary Program's (SMBNEP) Fiscal Year 2025 (FY25) Work Plan tasks for the time period October 1, 2024 through March 31, 2025. The FY25 Work Plan is focused on a subset of actions and next steps identified in the 2018 CCMP Action Plan. Seven goals are identified in the CCMP Action Plan and are listed below. All seven goals are addressed by the actions and next steps identified in the FY25 Work Plan and this semi-annual report. The goals are achieved through actions by many different entities, including public agencies, municipalities, and non-profit organizations that take the lead on specific projects.

Seven CCMP Action Plan goals:

1. Protect, enhance, and improve ecosystems of Santa Monica Bay and its watersheds
2. Improve water availability
3. Improve water quality
4. Enhance socio-economic benefits to the public
5. Enhance public engagement and education
6. Mitigate impacts and increase resiliency to climate change
7. Improve monitoring and ability to assess effectiveness of management actions

Structure of Semi-Annual Report

This section of the semi-annual report is organized by the individual actions included in the FY25 Work Plan. For each action the Long-term Environmental Results from the CCMP Action Plan are identified and brief updates on implementation of the next steps are included in a table. A narrative section follows the table for the steps that require more description. In some cases, the table identified that a "next step" did not have project activities during this time-period; this was due to a combination of factors including but not limited to funding, partner prioritizations, or permitting delays.

Additional information on activities can be found on the SMBNEP website, the CCMP Action Plan, the FY25 Work Plan, and as part of individual products produced for each project.

In winter 2025, several fires impacted the SMBNEP study area including the December 2024 Franklin Fire (burned about 4,000 acres) and January 2025 Palisades Fire (burned nearly 23,500 acres). Impacts to humans, wildlife, and ecosystems, particularly from the devastating Palisades Fire, are still being assessed. Updates on impacts to individual projects and next steps are outlined in the following action tables and narratives as applicable. Updates on water quality from partners (Los Angeles Regional Water Quality Control Board, State Water Resources Control Board, and Heal the Bay) were provided at the June 2025 SMBRC Governing Board Meeting. Presentations and materials for those updates were be posted on the SMBRC Meeting Calendar webpage for the associated meeting.

CCMP Action #1

Acquire open space for preservation of habitat and ecological services

Long-term Environmental Results / Outcomes: Publicly acquire new open space as it becomes available throughout the watershed to promote connectivity, preserve habitat, and sustain ecological services.

Action #1 Next Steps / Project Name	Objectives	Status	Update
Support partners in identification and prioritization of key acquisition or conservation easement properties.	To acquire and/or protect high priority properties that are at risk of development, or provide high diversity, include wildlife corridors, and/or provide local socio-economic benefits.	Ongoing	No activities occurred during this reporting period.

CCMP Action #2

Restore kelp forests in the Bay to improve the extent and condition of the habitat

Long-term Environmental Results / Outcomes: Restore 150 acres of kelp forest to improve habitat functions, local fisheries, and coastal resilience.

Action #2 Next Steps / Project Name	Objectives	Status	Update
Implement the rocky reef/kelp forest restoration project.	To restore 3 acres of rocky reef kelp forest by reducing urchin density within barrens to the target of 2 urchins per square meter to allow the reestablishment of giant kelp; to inform statewide restoration and management of kelp forest/rocky reefs.	Ongoing	Partnered with commercial urchin harvesters to cull urchin densities within 4.0 acres of urchin barrens off Point Fermin, White Point, and Underwater Arch Cove, Palos Verdes. Additionally, the team has worked to maintain 3 previously restored acres at Underwater arch cove. The 4 new acres were supported by various small grants, and the additional 3 acres of restoration maintenance was funded by the Santa Monica Bay Coastal Habitat Restoration Program. TBF supports the statewide planning effort for Kelp Forest Restoration and Management through its service on the CDFW Kelp Restoration and Management Plan Community Working Group. Three group meetings were held on March 13, 2024, August 12, 2024, and May 21-23, 2025. Input on kelp harvest, environmental monitoring of kelp, kelp restoration techniques and methods and related issues are ongoing.
Biological response monitoring of restoration areas.	To track the response of the kelp forest community after restoration activities occur.	Ongoing	Conducted all pre-and-post-restoration monitoring for 4.0 acres cleared during this project period; annual biological response surveys were conducted in summer 2025.

Action #2 Next Steps / Project Name	Objectives	Status	Update
Develop recommendations for the deposition of materials from Rindge Dam or other suitable sources to augment sediment supply.	To support scientific analyses, inform priorities, and assist with site evaluations and communications for material deposition.	Ongoing	Planning process is ongoing for the Malibu Creek Ecosystem Restoration Project including the potential use of the material behind Rindge Dam for nearshore reef restoration and sediment augmentation (see Action #9).
Conduct carbon sequestration assessment of kelp restoration project.	To assess carbon sequestration potential of kelp forest restoration.	Ongoing	No activities occurred during this reporting period.

Action #2 Narrative:
Teams of restoration divers (via SCUBA) have been clearing the ocean floor of excess purple sea urchins (*Strongylocentrotus purpuratus*), thereby reducing herbivory and allowing for the natural recruitment and development of giant kelp (*Macrocystis pyrifera*). During the reporting period of October 1, 2024, through September 31, 2025, 4.0 acres were pre-monitored, and cleared of excess urchins off Point Fermin, White Point Beach, and Underwater Arch Cove. Additionally, efforts have been focused on a roughly 3-acre (about half the area of the Lincoln Memorial Reflecting Pool) area of reef in Underwater Arch Cove that had previously been restored but unfortunately observed a return to the barren state. While most of our restoration sites have continued to exist in their kelp stable state after restoration events, this area at underwater arch cove has struggled at achieving the same stability. Restoration efforts will continue to be conducted to further work at Point Fermin, White Point, and Underwater Arch Cove. The specific area being cleared off Point Fermin was initially cleared in 2015-2017 when dive teams noticed recently settled purple sea urchins, roughly 2-5 mm in diameter across the reef. Restoration efforts were resumed in January 2022, and no observations of a new recruitment class have been made.

A total of 79.5 acres of reef has been cleared along Palos Verdes since the beginning of the project in July 2013. In that time, TBF and partners documented the development of a variety of macroalgae communities occurring on the reefs,

higher densities and biomass of kelp bass (*Paralabrax clathratus)* and other fish species within restoration sites, increased density of CA spiny lobster (*Panulirus interruptus)*, higher algal and invertebrate diversity at all restoration sites, and increased *purple sea urchin* and red sea urchin *(Mesocentrotus fransicanus)* gonadosomatic indices. These increases are comparable to reference site values. Focusing on kelp restoration areas where *purple sea urchin* suppression had occurred, canopy percent cover and kelp acreage increased in the completed restoration sites.

CCMP Action #3

Recover abalone populations in the Santa Monica Bay and region to support rare species and socioeconomic benefits to people

Long-term Environmental Results / Outcomes: Establish 2-3 minimally viable green and red abalone populations (i.e., at least 2,000 abalone per hectare) in the Bay; establish 1-2 viable white abalone populations (i.e., at 2,000 abalone per hectare) in the Bay.

Action #3 Next Steps / Project Name	Objectives	Status	Update
Establish abalone outplanting sites and conduct juvenile and larval outplanting.	To reintroduce abalone, test effectiveness of outplanting methods, and assess habitat site suitability.	Ongoing	Maintained temperature and dissolved oxygen logger deployments at Palos Verdes outplanting sites; a total of 1,145 white abalone were outplanted to Palos Verdes in fall 2024 and spring 2025, with a total of 9,360 white abalone outplanted to the Palos Verdes sites to date. Two new Catalina Island sites were established with 1,629 white abalone outplanted this fall 2025, and one new Palos Verdes site was established with 2,582 red abalone outplanted this fall 2025. See the SMBNEP FY24-25 Bipartisan Infrastructure Law annual report for additional updates.

Action #3 Next Steps / Project Name	Objectives	Status	Update
Monitor abalone restoration and reference sites.	To conduct SCUBA-based surveys within outplant sites to assess the survivability of outplanted abalone and suitability of the site for future outplanting efforts.	Ongoing	Outplant monitoring occurred at scheduled intervals of two weeks and one month post abalone release, followed by quarterly site monitoring thereafter. Five white abalone outplant sites have been established off Palos Verdes and Catalina Island to date. During this reporting period from October 1, 2024 – September 30, 2025, a total of 28 live white abalone and 0 live red abalone outplants were observed at both Palos Verdes sites; and a total of 265 white abalone shells and 9 red abalone shells were collected. The red abalone shells were from abalone outplanted in prior years. The fall 2025 outplant events occurred at the end of this reporting period, with the first post-outplant monitoring scheduled for October 2025; note, data presented here does not include fall 2025 live abalone and shells collected across sites.
Maintain aquaculture facility for abalone.	To facilitate captive spawning and rearing of red and white abalone in support of future restoration activities for outplanting in the wild; to serve as central staging facility for southern California outplant efforts.	Ongoing	TBF staff continued to operate and maintain two abalone laboratory spaces at SCMI, housing red and endangered white abalone. During this reporting period, in November 2024 and March 2025 ~1,183 white abalone were transferred to SCMI to supplement the spring and fall 2025 outplant events. In addition, in May 2025, 5,000 juvenile red abalone were transferred to SCMI to supplement the fall 2025 outplant events. The next transfer of abalone to TBF is scheduled for fall/winter 2025, with juvenile white and red abalone from partner aquaculture facilities to supplement 2026 outplant events.

Action #3 Narrative:
TBF operates and maintains two mariculture facilities located at SCMI. These spaces serve as a wet lab for abalone rearing, juvenile abalone grow-out, experimentation, and they serve as a staging facility for outplant operations. The facility is a registered aquaculture facility and has been certified as “sabellid free” by CDFW, which permits abalone operations.

Site monitoring follows this schedule after the abalone release date, (allowing abalone to egress onto the reef) at two weeks, one month, and quarterly thereafter. Site monitoring is not performed if weather or ocean conditions do not permit a safe or productive day of diving. For assessment, the site is broken into ten 4 x 30-meter surveys and a team of divers will survey that area in approximately 40 minutes. Divers use flashlights to investigate crevices and carefully look under small rocks for abalone. When a diver encounters an abalone, its location, length (if able to measure), tag ID (if able to read), and any other notes are recorded. Modifications to site monitoring and abalone outplant methods will be implemented starting in fall 2025; to reduce diver effort and increase efficiency, and to support the expansion of the project with the increase in number of restoration sites. Starting in fall 2025, divers tested a new novel outplant method, performed new roving diver surveys, and reduced the number of quarterly surveys transects performed at each site. These project modifications will support the continued establishment of new sites and the increase in geographic range of abalone restoration throughout the Santa Monica Bay.

TBF has established five abalone outplant sites throughout the Santa Monica Bay and Catalina Island to date, with a total of 10,989 white abalone and 6,405 red abalone outplanted.. Since 2019, TBF and partners have recorded the number of shells collected and live observations of outplanted red abalone (*Haliotis rufescens*) and white abalone (*Haliotis sorenseni*). During this reporting period from October 1, 2024 – September 30, 2025, TBF and partner organizations have recorded 28 live observations of outplanted white abalone at PVR01 and collected a total of 265 white shells (245 at PVR01, 20 at Chile Verde) and 9 red shells (5 at PVR01, 4 at Chile Verde). Quarterly monitoring will continue to identify live abalone and shells to assess survivorship. Note, the fall 2025 outplant events occurred at the end of this reporting period, with the first post-outplant monitoring scheduled for October 2025; and so, data presented here does not include the fall 2025 live abalone and shells collected across sites.
In preparation for 2026 outplanting events, the next transfer of juvenile white and red abalone to SCMI is tentatively

scheduled for fall/winter 2025 for white abalone and early spring 2026 for red abalone from partner aquaculture facilities. TBF staff will continue the operations of aquaculture facilities and daily animal husbandry tasks for both red and white abalone. TBF staff plan to perform large renovations of the aquaculture facilities at SCMI starting in winter 2025 or spring 2026, to upgrade many components of the life support systems and tank layouts to best suit the expansion of the abalone program in future years. Planning and preparation will continue for future white abalone outplant events at the established white abalone sites in Palos Verdes and Catalina Island. Continued abalone site scouting and habitat suitability surveys are planned for spring and summer 2026, with the goal of developing additional Catalina Island and Palos Verdes sites by fall 2026.

CCMP Action #4

Assess and restore seagrass habitats in the Santa Monica Bay and nearshore environments to benefit marine ecosystems and improve coastal resilience

Long-term Environmental Results / Outcomes: Restore 2-5 acres of seagrasses to the Bay to improve habitat functions and coastal resilience.

Action #4 Next Steps / Project Name	Objectives	Status	Update
Survey the extent and condition of seagrasses in the Bay using R2Deep2, side-scan sonar, and SCUBA divers to inform the Comprehensive Monitoring Program.	To survey the extent and condition of seagrasses in the Bay using SCUBA divers and side-scan sonar, to inform the CMP and restoration activities.	Ongoing	TBF and project partners conducted numerous SCUBA-based surveys to monitor seagrass within the Bay at transplant and donor sites; quarterly surveys were conducted in December 2024, February 2025, and March 2025, and August 2025. Site scouting efforts for new transplant sites were conducted off of the Malibu coast in April 2025, and four new sensors were installed at selected sites in May 2025. TBF, Paua Marine Research Group, Vantuna Research Group, and Scripps Institution of Oceanography procured CA State Proposition 50 funding to utilize SCUBA-based surveys, side-scan sonar, and deployment of biophysical oceanographic sensors to further elucidate key data gaps outlined in the CMP surrounding SAV and soft-bottom habitat within the Bay.

Action #4 Next Steps / Project Name	Objectives	Status	Update
Develop restoration methods for eelgrass (*Zostera pacifica*) in Santa Monica Bay.	To improve understanding and probability of success for offshore eelgrass restoration using transplant methods.	Ongoing	Continued collaboration with Paua Marine Research Group and partner agencies to improve understanding of eelgrass restoration methods to apply to the pilot project. A CRI research effort was conducted in the summer of 2023 furthering our understanding of environmental stressors impacting the health of *Z. marina*. A QAPP was submitted and approved by the USEPA Region IX in spring 2023.
Conduct pilot restoration project(s) of offshore eelgrass in the Bay.	To conduct a pilot restoration project of offshore eelgrass in the Bay within a one-acre footprint.	Ongoing	TBF staff and partners implemented a pilot project *Z. pacifica* transplant effort in July 2021; during this reporting period, TBF and project partners conducted quarterly monitoring at the transplant sites in November 2023, December 2023, January 2024, and March 2024. Monitoring of the transplant sites within SM Bay has been completed and donor sites were monitored in December 2024, and March 2025. These sites will continue to be monitored on a quarterly basis.
Evaluate restoration potential of seagrasses in the Bay, harbor, wetlands, and nearshore environments.	To improve understanding and probability of success for seagrass restoration projects.	Ongoing	Ongoing monitoring of donor and transplant sites involved the deployment of PAR and MiniDot sensors in existing *Z. marina* and *Z. pacifica* beds in Santa Monica Bay, Catalina Island, LA Jolla, and Malibu. Data on light, temperature, and dissolved oxygen collected at these sites will be used to inform site selection for future transplant efforts.

Action #4 Narrative:
Santa Monica Bay Subtidal Eelgrass Restoration: This innovative project, funded by State Coastal Conservancy

(as part of the LA Living Shoreline Project), Honda Marine Science Foundation, and NEP Coastal Watershed Grants Program, incorporates the experimental establishment of subtidal eelgrass offshore of Dockweiler Beach, Redondo Canyon, and Malaga Cove within Santa Monica Bay. TBF staff participated on the regional Submerged Aquatic Vegetation Technical Advisory Committee, led by SCCWRP. This group provided external scientific input and recommendations to the subtidal components of the restoration project, while concurrently spreading awareness of the importance of open coast eelgrass transplants. Further, TBF staff convened preeminent SAV researchers in California to establish the "Santa Monica Bay Subtidal Eelgrass Restoration Project Technical Advisory Committee" (TAC), comprised of researchers from academic institutions, governmental agencies, and environmental consultants. This group proved invaluable in refining the approach of the project and providing essential recommendations and insights into transplanting and monitoring processes. The members of the TAC expressed overwhelming support for the project and highlighted the importance of conducting this work. Baseline monitoring surveys of extant *Z. pacifica* donor sites were conducted by project partners in October 2020 at donor sites off Catalina Island, including deploying a physical oceanographic sensor tracking wave characterization. In addition, side-scan sonar mapping and SCUBA-based surveys were undertaken to estimate the number of turions and expanse of the donor sites. Subsequently the project harvested Z. pacifica material from two donor beds on the backside of Catalina Island, "Palisades", and "East End", utilized for three transplants within Santa Monica Bay. Each transplant site received roughly 500 turions, shoot-like structures supporting the blades of the eelgrass. Two methods were applied: one used a single turion placed into holes excavated by divers, and the second bundled 8-10 turions together. Thus far, post-transplant monitoring was conducted at 24 hours, 1-week, 2-weeks, 1 month, and two quarterly surveys after transplant activities to inform survivability; quarterly monitoring will continue through 2024.

During this reporting period, TBF and project partners conducted numerous SCUBA-based surveys to monitor seagrass within the Bay, at Catalina Island and elsewhere in the Southern California Bight, both potential transplant and donor sites. Quarterly monitoring events occurred in December 2024, February 2025, March 2025, and August 2025. Bottom mounted sensors continue to be deployed at donor sites. Early data were processed with results presented in a report produced in May 2023 for Restore America's Estuaries. TBF and PMRG also conducted site scouting efforts in April of 2025 in order to find desirable new transplant sites off the coast of Malibu. Four sites were selected and new MiniDOt sensors were installed at these locations.

Relatedly, TBF, alongside Paua Marine Research Group, Vantuna Research Group, and Scripps Institution of Oceanography, procured CA State Proposition 50 funding to utilize SCUBA-based surveys, side-scan sonar, and the deployment of a suite of biophysical oceanographic sensors to record light, temperature, and dissolved oxygen. These data will further elucidate key data gaps outlined in the CCMP surrounding SAV and soft-bottom habitat within the Bay. Project partners have deployed sensors at nine sites to acquire a suite of environmental data metrics. A three-pronged

data acquisition program will address the central scientific problem of determining key physical environmental drivers influencing the realized niche of Z. pacifica and enhance applied restoration efforts from local to regional scales with significant potential benefits for Southern California coastal shelf habitats.

In essence the work this period is to better understand the physical, chemical and biological characteristics of sites where Z. pacifica exists. Potential transplant sites will be narrowed based upon similar characteristics, based upon the timeseries data generated by the sensors and accompanying SCUBA based surveys. The likely locales for transplant within Santa Monica Bay National Estuary Program Study Area are along the west and south facing aspects of the Malibu coastline. Additional consideration will be applied to avoid the lingering effects of the Palisades fire in the nearshore soft bottom habitat. The first round of transplants into Santa Monica Bay had differing yet some initial success, persistence of transplanted eelgrass. None of these sites are currently supporting eelgrass from the transplant effort in 2021.

CCMP Action #5

Assess and implement offshore artificial reefs to benefit marine ecosystems and provide socioeconomic benefits to people

Long-term Environmental Results / Outcomes: Implement artificial reef projects to achieve 69 new acres of rocky reef habitat of a similar condition as reference reef habitats.

Action #5 Next Steps / Project Name	Objectives	Status	Update
Implement rocky reef restoration project off Palos Verdes.	To restore 69 acres of rocky reef habitat lost to landslides activity using high relief rocky modules that will resist future burial from sediment deposition.	Completed	SCMI and VRG continued post-restoration monitoring of the Palos Verdes Reef Restoration Project (funded by Prop 12) including data analysis for the Year 4 report (anticipated to be released in May 2025) and writing a publication describing the outcomes of the project to date. The recent Portuguese Bend landslides have not impacted the reef to date as the reef was designed to withstand these types of events (see also Action 36). The implementation of this project is complete, monitoring will continue to inform the condition and trends associated with the reef.

Action #5 Next Steps / Project Name	Objectives	Status	Update
Annual monitoring with the use of side scan sonar and SCUBA based surveys.	To assess nearshore coastal marine habitats using side-scan sonar and SCUBA to inform data gaps in the CMP and future restoration projects; to understand the movements, positions, and permanence of great white sharks, giant sea bass, and other species of interest in SMB.	Ongoing	No activities reported by partners during this period.
Preliminary work regarding the benefits of dynamic revetments and nearshore reefs.	To preliminarily advance work towards understanding dynamic revetments and nearshore reefs, including feasibility of using recycled concrete for construction.	Ongoing	The SMBNEP FY22-23 Bipartisan Infrastructure Law Work Plan, (Infrastructure Investment and Jobs Act), approved by the SMBRC Governing Board and Executive Committee includes funding for the Santa Monica Breakwater Rocky Intertidal Preserve and Adamson House Projects. Updates for these efforts will be provided in the BIL reporting.

Action #5 Narrative:
The Palos Verdes Reef Restoration Project aims to restore the nearshore ecological rocky-reef community, support an estimated six tons of reef fish and a proportional amount of invertebrates, and increase the abundance of commercial and recreational species, offsetting historical losses to ecosystem services. The project received $1,409,000 in Prop 12 funds for construction and post-construction monitoring for Year 1. Vantuna Research Group and Southern California Marine Institute completed construction of an artificial reef in September 2020 to restore rocky reef habitat near Bunker Point off the Palos Verdes Peninsula, which involved strategically placing 57,000 tons of quarry rock in a 42-acre area. During this reporting period, the project leads continued to develop

the Year 4 monitoring report and write a publication on the project to detail methods and impacts on fish biomass. In 2024, Occidental College also completed data collection at 68 rocky reef sites in Santa Monica Bay as part of the SMBRC Proposition 50 Grant Program (see Action 36).

Four acoustic receivers were purchased by TBF in 2016 to improve the coverage of the Southern California Acoustic Telemetry Network, led by Dr. Chris Lowe at CSU Long Beach. Three receivers were first deployed in May 2017 to sites in northern Santa Monica Bay. Currently, there are six stations maintained by the CSULB Shark Lab from Malibu Pier in the north to Redondo Beach in the south bay. Data generated by this expansion of the network will improve protection and understanding for juvenile great white sharks and other fishes tagged and recorded by this network of sensors.

Starting on September 8th a tagged juvenile white shark was detected neighboring Topanga State Beach, with over 1,000 detections from its tag as it spent weeks in the area. One tagged leopard shark was detected once off the Malibu Pier in early October. Also in early October, two tagged bat rays were detected over 250 times near Point Dume.

CCMP Action #6

Restore coastal strand and foredune habitat to beaches and sandy shores to improve coastal resilience

Long-term Environmental Results / Outcomes: Restore 10 acres of coastal strand and dune habitat along Santa Monica Bay beaches to improve ecological function, increase coastal resilience, and provide habitat for rare species.

Action #6 Next Steps / Project Name	Objectives	Status	Update
Continue long-term monitoring of the Santa Monica Beach Restoration Pilot Project.	To inform adaptive management of the restoration area regarding coastal resilience, ecosystem benefits; to convert the site to a permanent feature of the coastline.	Ongoing	Adaptive management, maintenance and outreach in the form of public and private volunteer events, research and education with student groups, interns and faculty are ongoing.
Conduct outreach, planning (phase 1) and implementation (phase 2) of the Malibu Living Shoreline Project.	To restore three acres of beach and dune habitat to improve coastal resilience and ecosystem benefits and improve public engagement.	Completed	The monitoring report for 2022 and 2023 was submitted and approved in October 2023. Adaptive management and maintenance are ongoing. Volunteer events are ongoing to help with maintenance, though maintenance requirements at this site are minimal.
Find funding for and implement another beach and bluff restoration project.	To restore 3.5 acres of bluff, beach, and eelgrass habitat as part of a living shoreline pilot project (Los Angeles Living Shoreline Project); restore dune habitats in Manhattan Beach.	Ongoing	Adaptive management and maintenance of the foredune section of the Los Angeles Living Shoreline and Manhattan Beach Dune Projects is ongoing. This includes weeding, and general maintenance of the site infrastructure e.g., posts, rope, and signage.

Action #6	Objectives	Status	Update
Support efforts to standardize sandy beach monitoring. and a regional approach to restoration	To continue efforts to standardize sandy beach monitoring and data collection for southern California through stakeholder partnerships and CMP implementation.	Ongoing	No activities occurred during this reporting period.

Action #6 Narrative:
TBF and many partners, e.g., City of Santa Monica, City of Manhattan Beach, City of Malibu, LACDBH, RCDSMM, State Parks, Audubon, Surfrider Foundation, and Girl Scout Troop 71075 conducted operations and coordinated community events to maintain, enhance, and expand vegetated sand dunes along the coastline of Los Angeles County. These dune sites improve habitat and provide protection from sea level rise by reducing coastal flooding and erosion. Progress on the project sites are provided below organized from north to south.
Malibu Living Shoreline Project: five volunteer community events were conducted in Malibu. 62 participants donated 123 hours removing **2.25 tons of ice plant and 219 gallons** of additional non-native vegetation. We also had two outreach tabling events to engage and share the purpose of the dunes to beachgoers to encourage participation. On **Santa Monica State Beach** two dune sites have been established. At the **Pilot Project** and **Phase Two** over 325 participants donated over 750 hours removing non-native vegetation and planting 1145 potted natives. The species included; 120 Menzies' goldbush (*Isocoma menziesii*), 75 California aster (*Corethrogyne filaginifolia*), 250 California bush sunflower (*Encelia californiaca*), **210** Coastal California Poppy (*Eschscholzia californica var. maritima*), 230 Sea Cliff Buckwheat (*Eriogonum parvifolium*) and 160 Deerweed (*Acmispon glaber*)**.**

In addition to these plants, seeds were dispersed in the foredune and backdune. Foredune areas were seeded with sand verbena (*Abronia maritima*), beach burr (*Ambrosia chamissonis*), and beach evening primrose (*Camissoniopsis cheiranthifolia*). Backdune areas were seeded with miniature lupin (*Lupinus bicolor*), Coastal California Poppy (*Eschscholzia californica var. maritima*), deerweed (*Acmispon glaber*), and beach evening primrose (*Camissoniopsis cheiranthifolia*). Additionally, we had three dune tours and 8 tabling events that reached an additional ~150 people. At

Dockweiler Beach 56 community volunteers donated 112 hours over three events removing 565 gallons of non-native vegetation. At **Manhattan Beach 277** volunteers donated over 740 hours, removing 1371 gallons of non-native vegetation and planting 456 plants including 116 sea cliff buckwheat, 150 Coastal California poppy, 50 lupin, and 140 California aster (*Corethrogyne filaginifolia*). To inform the public about the dunes and the endangered El Segundo Blue Butterfly, four tabling events were conducted before and during the flight season which engaged an additional 110 beachgoers. These community events were complimented by the many days spent by TBF staff collecting and storing seed, watering plants, and maintaining the post and rope infrastructure that delineates the dune sites. The time on the dunes allowed for noteworthy observations of western snowy plovers (including one nesting pair at Dockweiler Beach), California legless lizards, and passing pods of dolphins.

CCMP Action #8

Restore coastal bluff habitats in the Bay watershed to support ecosystem services

Long-term Environmental Results / Outcomes: Restore 5 acres of bluff habitats in the SMB watersheds to support ecosystem services.

Action #8 Next Steps / Project Name	Objectives	Status	Update
Identify partners and funding to support bluff restoration projects.	To establish project partners, project sites, and identify potential funding sources in support of bluff restoration.	Ongoing	No activities occurred during this reporting period.
Initiate Point Dume stair replacement and bluff restoration project to benefit people and wildlife.	To replace a deteriorated beach access staircase and restore bluff habitat at Point Dume State Beach.	Ongoing	Construction was completed and is open for public use. California native vegetation was restored post-construction. Monitoring and site maintenance is ongoing.

CCMP Action #9

Implement Malibu Creek Ecosystem Restoration Project (Rindge Dam and other barrier removals) to support ecosystem restoration

Long-term Environmental Results / Outcomes: Complete implementation of the Malibu Creek Ecosystem Restoration Project including the removal of barriers to improve stream and riparian habitats and to benefit the steelhead trout.

Action #9 Next Steps / Project Name	Objectives	Status	Update
Support lead agencies in efforts to complete the design and engineering plans for the Malibu Creek Ecosystem Restoration Project.	To develop design and engineering plans to remove Rindge Dam and additional barriers, to restore terrestrial and aquatic habitat connectivity and establish natural sediment transport regime.	Ongoing	State Parks continued the pre-construction, engineering, and design phase; and conducted public outreach and engagement (see additional narrative).
*Support lead agencies in identifying and obtaining funding for the project	Implement removal of upstream fish passage barriers upstream of Rindge Dam	Ongoing	No activities were reported during this report period.

Action #9 Narrative:

The Malibu Creek Ecosystem Restoration Project aims to restore aquatic habitat connectivity along Malibu Creek and its tributaries, establish a more natural sediment regime from the watershed to the shoreline, and restore aquatic habitat of sufficient quality along Malibu Creek and tributaries to sustain or enhance indigenous populations of aquatic species within the next several decades, allowing for migratory opportunities to roughly 15 miles of aquatic habitat that have been unreachable for many decades in this watershed. The project involves the removal of Rindge Dam and approximately 780,000 cubic yards of sediment behind the dam and modification/removal of eight upstream barriers within the Malibu Creek watershed. During the reporting period, State Parks continued public engagement and outreach events and the

pre-construction, engineering, and design phase. This phase includes baseline biological surveys, hydrology/hydraulic modeling and flood risk assessment, engineering plans, environmental permitting, public outreach, and other project studies to advance the project to a 90% level of design. The geotechnical team obtained soil samples behind Rindge Dam and initiated analysis of soil characteristics such as grain size to determine redistribution options for the sediment. Key areas for distribution include the beach, in the near-shore coast, or upland disposal. Plans for the removal of upstream barriers have also been completed. Thirty-five percent design plans for the removal of upstream barriers have also been completed. CalTrout is anticipated to lead implementation of the removal of upstream barriers that are not on State Parks lands.

The project team also continued to search for endangered Southern California Steelhead in Malibu Creek to help track the species' populations and distributions throughout southern California. The community science program continued at four sites to help monitor the transformation of Malibu Creek including changing physical conditions along the aquatic corridor. About 500 images have been captured in different aquatic zones to show the varying conditions during the landscape-scale restoration effort.

CCMP Action #10

Remove additional barriers to support fish migration and ecosystem services

Long-term Environmental Results / Outcomes: Remove fish barriers to support endangered steelhead trout habitat expansion, increase resilience related to climate change, and provide ecosystem services.

Action #10 Next Steps / Project Name	Objectives	Status	Update
Identify, prioritize, and acquire funding for barrier removal projects.	To engage with partner entities to identify potential opportunities for fish barrier removal.	Completed	RCDSMM completed the Rescue, Reintroduction, and Genetic Conservation for Southern California Steelhead technical report in February 2024, which evaluates risks, benefits, and constraints of rescue, reintroduction, and genetic conservation actions as conservation measures for Southern California steelhead trout (also see Action #15). No other activities occurred during this reporting period.

CCMP Action #12

Restore smaller coastal lagoons and other wetland types to increase wetland habitat area and condition throughout the watershed

Long-term Environmental Results / Outcomes: Restore and increase wetland and transition habitat acreages for small lagoons such as Topanga Lagoon and other wetland systems to improve ecological functions.

Action #12 Next Steps / Project Name	Objectives	Status	Update
Finalize restoration planning and permitting for Topanga Lagoon Restoration Project and initiate project.	To create a restored habitat that integrates fish passage barrier removal, wetland habitat restoration, visitor services, and recreational opportunities at Topanga Lagoon.	Ongoing	Topanga Lagoon Restoration Project (funded by Prop 12) continued the design and permitting phase.
Complete land acquisition, feasibility analyses, and restoration design in coordination with bridge redevelopment for Trancas Lagoon.	To restore habitats adjacent to Trancas Lagoon after Caltrans bridge expansion is completed.	Ongoing	Caltrans continued work to replace the Trancas Creek Bridge.

Action #12 Next Steps / Project Name	Objectives	Status	Update
Conduct comprehensive monitoring of small lagoons in northern Bay to inform CMP and seek funding to continue Malibu Lagoon monitoring.	To conduct comprehensive monitoring of the northern Bay lagoons, inform the Comprehensive Monitoring Program (wetlands chapter), and acquire funding to continue long-term monitoring and data collection at Malibu Lagoon.	Ongoing	See Action #36 for SCCWRP's Prop 50 project to conduct monitoring of the small lagoons in northern Bay to fill CMP data gaps.

Action #12 Narrative:
The Topanga Lagoon Restoration Project is implemented by State Parks and partners including RCDSMM, Caltrans, and LACDBH with funding from SCC, WCB, State Parks, and others. The project aims to restore Topanga Lagoon, improve habitat for the endangered steelhead trout and tidewater goby, increase resiliency to sea level rise and climate change, improve visitor experience, and enhance recreational opportunities. The Final EIR was released in August 2024 and certified in September 2024. During this reporting period, the project continued the design and permitting phase of restoration and the project team presented on the project at the December 2024 SMBRC Governing Board meeting. In January 2025, the project team issued the Notice of Pending Permit for a Coastal Development Waiver for geotechnical testing that will inform bridge and road design. The project was also greatly impacted by the January 2025 Palisades Fire. Facilities surrounding the project site were destroyed including the historic Topanga Ranch Motel and nearby businesses. On January 17 and 23, RCDSMM, HtB, and many other partners rescued two endangered species from the fire impacted waters of Topanga Lagoon and Creek, three days prior to mudflows from rain that filled the creek and lagoon, effectively destroying quality fish habitat. In total, over 750 tidewater goby and 270 California steelhead trout were transferred out of impacted waters and into temporary holding facilities. Impacts from the Palisades Fire on the project timeline are still being assessed.

TBF continued coordination with SCCWRP and Moss Landing Marine Laboratory for the Estuarine Marine Protected Area, (EMPA) monitoring program, which includes Malibu Lagoon as a study site. TBF partnered with CSULB to coordinate, deploy, and manage one water quality sensor in the lagoon. CSULB and partners implemented the first round

of EMPA monitoring in the lagoon in March and April 2021 and another in fall 2021, including fish traps, nutrients, and other metrics. SCCWRP led a Proposition 50 proposal in partnership with TBF and CSULB to fill CMP data gaps for the small northern Bay wetland lagoon systems, which was approved.

TBF has worked with partners in this effort to provide data sondes in and neighboring coastal lagoons. All sensors were lost in Topanga Lagoon during the Palisade Fire and existing sondes have been removed from other locations for repairs. CSU Long Beach continues to have loggers deployed (Van Essen CTD and MiniDOT at one location near the back of Malibu Lagoon. Plans to redeploy sensors in Topanga are TBD and data collection is ongoing in Malibu Lagoon.

CCMP Action #13

Restore Ballona Wetlands Ecological Reserve to enhance wetland habitats and benefits to people

Long-term Environmental Results / Outcomes: Restore 577 acre Ballona Wetlands Ecological Reserve to improve wetland, transition, and upland habitats, functions, and services. Create public access trails and bike paths and encourage recreation and stewardship at the Ballona Wetlands Ecological Reserve.

Action #13 Next Steps / Project Name	Objectives	Status	Update
Support the lead agencies by contributing technical information to the Final Environmental Impact Statement and Report and permitting	To support the lead agencies in completing permitting and federal environmental review documents.	Ongoing	At the February 2025 meeting, the SMBRC Governing Board adopted Resolution 25-01 regarding support for public access and invasive species removal in the Ballona Wetlands Ecological Reserve. SMBRC staff provided the resolution as well as a letter from the Governing Board Chair to CDFW expressing this resolution's contents.
Support lead agencies to identify and obtain restoration funding.	To support lead agencies in finding funding to implement the Ballona Wetlands Restoration Project.	Ongoing	No activities occurred during this reporting period.

Site monitoring in late May, 2025 consisted of an overall assessment of the wetland using the California Rapid Assessment Method (CRAM), conducted by Dr. Alex Tower, of depressional wetlands, an assessment of the percent cover of native and non-native vegetation, species richness and veg mapping. For more details see the Final Report, posted December 2025 on the TBF website. Incidental wildlife and associated bird activity were recorded during the project period, and photo point photographs were captured. During the duration of this community engagement project, more than 300 members of the community, along with TBF staff and partners, removed more than 10,000 pounds of non-native plants from the site.

CCMP Action #14

Implement wildlife crossings and other innovative projects for benefits to wildlife and people

Long-term Environmental Results / Outcomes: Complete construction and implementation of two major freeway wildlife crossing projects to benefit wildlife, genetic diversity, and people.

Action #14 Next Steps / Project Name	Objectives	Status	Update
Support lead agencies to find funding for Phase 2 of the Liberty Canyon Wildlife Crossing project.	To implement Phase 2 of the Wallis Annenberg Wildlife Crossing, formerly the Liberty Canyon Wildlife Crossing Project, (Final/100% Design) in support of wildlife movement and safety and enhanced habitats.	Ongoing	Existing funding is anticipated to be sufficient to complete Phase 1 and 2. Additional funding needs will be confirmed after Phase 2 of the project (construction over Agoura Road) goes out to bid.

Action #14 Next Steps / Project Name	Objectives	Status	Update
Support lead agencies in permitting and environmental review of Liberty Canyon Wildlife Crossing project.	To complete implementation of the Wallis Annenberg Wildlife Crossing in support of wildlife movement and safety and enhanced habitats	Ongoing	Construction of the crossing section over the 101 Freeway (Phase 1) continued including completion of the sound walls and installation of waterproofing and gravel for the concrete deck. In March the first layers of soil were placed on the crossing. The design and engineering phase of the section over Agoura Road (Phase 2) also continued. Construction of Phase 2 is anticipated to begin in summer 2025. Completion of the entire wildlife crossing is estimated for late 2026. The native plant nursery that is growing the vegetation for the top of the crossing was under an evacuation order for the January 2025 Kenneth Fire, but that fire was contained and did not impact the nursery or the wildlife crossing.
*Identify additional locations for wildlife crossings	To implement the US 101 Conejo Pass Area Wildlife Tracking Study to improve wildlife connectivity from the Santa Monica Mountains to the Conejo Pass area, reduce wildlife collisions, and increase resiliency to climate change	Ongoing	No activities reported by partners during this period.

CCMP Action #15

Implement projects that improve understanding and/or enhance endangered and threatened species populations (e.g., habitat improvements for Western Snowy Plover, genetic banking)

Long-term Environmental Results / Outcomes: Improved extent and condition of habitats for rare species throughout the Bay and its watershed.

Action #15 Next Steps / Project Name	Objectives	Status	Update
Support Southern California steelhead trout genetic banking study.	To conduct the Southern California steelhead trout genetic banking study to inform population recovery.	Completed	RCDSMM completed the genetic banking study and incorporating the findings in their Rescue, Reintroduction, and Genetic Conservation for Southern California Steelhead technical report (also see Action #10).
Support restoration and monitoring activities to benefit California red legged frog populations.	To improve riparian and stream habitats to support red legged frog populations.	Ongoing	NPS continued to implement the California Red-legged Frogs Project (funded by Prop 12) including releasing tadpoles and conducting surveys (see additional narrative).

Action #15 Next Steps / Project Name	Objectives	Status	Update
Support projects within western snowy plover critical habitat.	To provide habitat and ecological benefits in support of the threatened western snowy plover and to restore critical habitat	Ongoing	Continued beach and dune restoration projects and communications with USFWS regarding projects and activities that may impact western snowy plovers and the El Segundo blue butterfly. Five acres or beach were delineated with a post and rope border, seeded, planted and driftwood was placed on site in mid-March 2024. For more detail see update in Action #6. Observations of western snowy plovers and the butterfly using the dune project areas is encouraging. Conversations with TBF staff, LA County Beaches and Harbors, and cities along the Santa Monica Bay to consider other areas along the coast for these types of protections are ongoing.

Action #15 Narrative:
SCC continued to manage implementation of the Reestablishment of California Red-Legged Frogs (CRLF) Project. The project builds on an earlier effort by National Park Service (NPS) to reintroduce the CRLF to the Santa Monica Mountains and consists of actions to establish self-sustaining populations of CRLF in Santa Monica Mountain streams and to address impacts from the Woolsey Fire. During this reporting period, tadpoles were released from all pens into translocation streams. Tadpoles reared at Santa Barbara Zoo were released at one translocation stream. Surveys for released tadpoles is ongoing. The project was extended by one year. The January 2025 Palisades Fire did not affect the location site directly. However, fire retardant material was discovered nearby including in project creek sites. The grantee is still investigating if this will have a negative effect on the wildlife.

See Action #3 in support of white abalone enhancement, Action #6 in support of western snowy plover and El Segundo blue butterfly habitat enhancement.

CCMP Action #16

Support the implementation of activities and projects such as those in Enhanced Watershed Management Plans (EWMPs) and activities identified in the TMDL implementation schedule to help achieve TMDL goals for 303d listed waterbodies in the Bay and its watershed

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline.

Action #16 Next Steps / Project Name	Objectives	Status	Update
Continue to support implementation of projects identified in EWMPs and WMPs.	To allocate and oversee State Bond funding for implementation of projects identified in EWMPs and WMPs; support implementation of projects made available under the Safe Clean Water Program (SCWP).	Ongoing	Continued overseeing implementation of stormwater pollution reduction projects with multi-benefit solutions (see also Action #17). See Action #43 for efforts related to SCWP support.
Continue implementation of LA IRWMP.	To facilitate and support coordination and allocation of IRWMP funding and implementation of projects identified in EWMPs and WMPs in the watershed.	Ongoing	No activities were reported during this reporting period.

CCMP Action #17

Infiltrate, capture, and reuse stormwater and dry-weather runoff through green infrastructure, LID, and other multi-benefit projects and improve understanding of ecosystem services provided

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline.

Action #17 Next Steps / Project Name	Objectives	Status	Update
Complete additional LID projects throughout the watershed.	To complete more LID projects throughout the watershed to improve flood protection, water quality, and provide additional benefits.	Ongoing	SMBRC staff continued to oversee Culver City's Citywide Bioretention Basin Project funded by Prop 50. Construction of the runoff capture systems is expected to begin in late 2025. SCC continued to oversee the Beach Cities Green Streets (funded by Prop 12; see additional narrative).

Action #17 Narrative:
SMBRC staff continued to oversee implementation of the following Prop 50 project:

Culver City's Citywide Bioretention Basin Project: The project will implement various best management practices (BMPs) in eight locations with the aim of protecting water quality in the Santa Monica Bay watershed and addressing TMDLs. The proposed BMPs will capture dry-weather and wet-weather runoff for treatment and infiltration. By capturing this runoff before it enters the storm drain infrastructure that flows to Ballona Creek, pollutants such as metals, bacteria, and trash will be filtered and retained, therefore, not flowing into the Creek. The project will construct runoff control systems in Culver City; monitor the effectiveness of the runoff control systems on reducing pollutant loading to downstream water bodies; and conduct outreach to inform and gather feedback from the public. Native plant landscaping will also be used for biofiltration and bioretention systems, to support natural treatment processes as runoff flows through and is filtered. During this reporting period, the grantee completed the Annual Progress Report, Operations and Maintenance Plan, and the 50% and 75% Design Plans. Construction of the runoff capture systems is expected to begin in late 2025.

SCC continued to oversee implementation of the following Prop 12 project:

Beach Cities Green Streets Project: This project consists of designing and constructing Green Street infrastructure across the cities of Torrance, Redondo Beach, Hermosa Beach, and Manhattan Beach to help meet water quality objectives set for the Santa Monica Bay beaches. The Beach Cities will retrofit existing impervious areas within the public parkways and right-of-ways using green infrastructure technologies such as porous pavement, catch basin trash screens, bio-filtration / bio-retention systems and dry wells. During this reporting period, the subcontractor conducted meetings with participating cities to address comments on final designs, specifications, and estimates. The project team also developed a Monitoring and Reporting Plan outlining the water sampling and flow monitoring locations, reporting requirements to determine project effectiveness in addressing water quality benefits and flood management.

CCMP Action #18

Support installation and monitoring of additional sewage and bilge pumpout facilities in Southern California harbors

Long-term Environmental Results / Outcomes: Meet 86-100% annual average usability percentage (based on analysis of equipment performance) for all publicly funded sewage pumpout stations throughout Southern California.

Action #18 Next Steps / Project Name	Objectives	Status	Update
Continue quarterly monitoring of public sewage pumpout stations.	To assess the condition of public sewage pumpout and dump stations.	Ongoing	Per statewide directive, as of January 2024 monitoring is now occurring biannually and continues to include dump stations. In October 2024, TBF and partner Morro Bay National Estuary Program (MBNEP) conducted a monitoring event across 71 public sewage pumpouts and eight dump stations spanning 14 Southern California harbors. In November 2024, TBF finalized its corresponding monitoring summary report. In May 2025, TBF and MBNEP conducted another monitoring event across 71 public sewage pumpouts and seven dump stations spanning 14 Southern California harbors. In June 2025, TBF finalized its corresponding monitoring summary report. Throughout this annual time period, TBF continued to manage the Pumpout Nav app's user-submitted problem reports and follow up with the appropriate sewage disposal facility's stakeholder to flag the alert and unit's non-operation.

Action #18 Next Steps / Project Name	Objectives	Status	Update
Support installation of sewage pumpouts in Marina del Rey or King Harbor.	To provide the boating community with additional pollution prevention resources.	Ongoing	No activities occurred during this reporting period.
Support efforts of neighboring harbors in installation of bilge and sewage pumpouts in Southern California.	To provide the boating community with additional pollution prevention resources.	Ongoing	TBF continued to champion DBW CVA Installation & Operations/Maintenance grants across Southern California. As of October 2024, Long Beach's grant agreement was approved and Morro Bay's Tidelands Park pumpout unit was installed. In December 2024, TBF established and deployed a survey to Southern California sewage pumpout and dump station stakeholders to inform future outreach and support for the region.

Action #18 Narrative:
TBF's Boater Education Program works to enhance stewardship and reduce ocean pollution generated by recreational boating activities. A key pollutant of focus is boat sewage. Discharging sewage overboard causes severe environmental and human health problems, especially in a state with more than four million recreational boaters. To reduce the negative impacts of discharging sewage overboard, all boaters are encouraged to use sewage management facilities including pumpout stations, mobile pumpout services, marine composting toilets, dump stations, and floating restrooms. To decrease potential sewage discharged into waterways, TBF's Boater Education Program monitors public boat sewage disposal facilities to ensure Southern California's pumpout and dump station network is operational, well-maintained, and accessible to recreational boaters. During monitoring events, the Pumpout Nav app is used for surveying and staff provides technical assistance to facility managers and supports maintenance needs and equipment replacements such as nozzles and banjo valves. The monitoring effort is supported by the federal Clean Vessel Act Education and Outreach

grant administered through the California State Parks Division of Boating and Waterways. During this reporting period, monitoring of pumpout units (fall 2024 and spring 2025) found an average 77.5% operability (based on analysis of equipment's functionality), and 100% of the pumpout units tested with biodegradable dye tablets were leak-free. Additionally, during this annual period, monitoring of dump stations (fall 2024 and spring 2025) resulted in 93.5% operability (based on analysis of the equipment).

CCMP Action #20

Support elimination of non-point pollution from onsite wastewater treatment systems

Long-term Environmental Results / Outcomes: Achieve level of performance and water quality protection set by state policy for all OWDS in the Santa Monica Bay watershed.

Action #20 Next Steps / Project Name	Objectives	Status	Update
Complete sewer connections of residential properties to the centralized wastewater treatment facility in the Malibu Civic Center area.	To improve water quality and reduce nutrient pollution through connecting residential properties to the Civic Center Water Treatment Facility in Malibu.	Ongoing	Expanding property connections continued (Phase 2 and 3 of the project). Due to the December 2024 Franklin Fire and January 2025 Palisades Fire, approximately 303 beachfront properties along the Malibu beach area have been destroyed. Project progress is on hold until the City has resolved beach front property rebuild permitting issues.
Continue the coordinated OWTS identification, permitting, and inspection system between the LARWQCB and the cities and counties in the watershed.	To continue to support efforts by the LARWQCB and cities and counties to achieve full implementation of the statewide policy for siting design, operation, and maintenance of OWTSs.	Ongoing	LARWQCB staff continued inspections at municipal and industrial facilities and issuing waste discharge permits as needed.

CCMP Action #21

Support policies that promote reuse, recycling, and advanced wastewater treatment to reduce reliance on imported water sources

Long-term Environmental Results / Outcomes: Help reduce dependence of the Los Angeles region on imported water and lower the percentage of imported water use by water agencies; work towards meeting the State's goals for recycled water in the Recycled Water Policy.

Action #21 Next Steps / Project Name	Objectives	Status	Update

Support recycled wastewater efforts by A.K. Warren Water Resource Facility of LACSD.	To support expansion of wastewater effluent recycling by JWPCP of LACSD.	Ongoing	The Grace F. Napolitano Pure Water Southern California Innovation Center (the demonstration facility of MWD and LACSD's Pure Water Southern California project) continued operation including testing innovative purification technologies and informing the optimal design and operation of a full-scale advanced water purification facility. MWD and LACSD approved a revised agreement between the agencies clarifying each agency's responsibilities. Under the revised agreement, LACSD will oversee the initial stage of the advanced purification process and play a key role in operations and testing at the demonstration facility. MWD will be responsible for the advanced purification processes that follow the membrane bioreactor stage, including reverse osmosis and the ultraviolet light/advanced oxidation treatment process. MWD will also oversee the distribution of the purified water to the region. In November 2024, the Bureau of Reclamation announced $26.2 million to help advance planning and design work and improvements to existing infrastructure needed for the project. The draft EIR to implement the regional recycled water program and construct and operate a new Advanced Water Purification facility is anticipated to be released in summer 2025 and consideration of certification of the final EIR in early 2026.

Hyperion Treatment Plant to implement pilot project for recycled water.	To support timely completion of Hyperion's pilot project.	Ongoing	Pure Water Los Angeles (encompassing LASAN's Hyperion 2035 and LADWP's Operation NEXT programs) continued. The Hyperion Program Implementation Plan for Pure Water Los Angeles, which demonstrates the feasibility of transforming Hyperion into an advanced water purification facility for 100% water recycling, was completed in October 2024 and conceptual design of the first phase at Hyperion was initiated. Start-up and commissioning of the Hyperion Advanced Water Purification Facility continued. Delivery of recycled water for LAX and Hyperion from the Hyperion Advanced Water Purification Facility is anticipated by summer 2025. The construction of the Hyperion MBR Pilot Facility was completed in summer 2024. Startup and commissioning is anticipated by fall 2025 pending the construction of associated odor control equipment.
Support recycled wastewater efforts by Tapia Water Reclamation Facility and others through the expansion of distribution system and regional partnerships.	To support expansion of recycled wastewater distribution and reuse.	Ongoing	The Pure Water Project Las Virgenes-Triunfo (demonstration facility partially funded by Prop12) continued; including design of and investigative work for the advanced water purification facility. In winter 2024, geotechnical exploration was conducted to evaluate subsurface and surface conditions, essential for planning and design. The designs for both the purification facility and brine pipeline are approximately 30% complete. Site clearing and initial construction activity at the purification facility is scheduled to start in late 2025 / early 2026.

CCMP Action #22

Support policies and implement projects that divert landfill waste and encourage composting to improve water quality and lower greenhouse gas emissions

Long-term Environmental Results / Outcomes: Establish 10 local community-based compost hubs and divert food waste from 20 food service establishments; distribute compost among community support agriculture, gardens, and restoration projects.

Action #22 Next Steps / Project Name	Objectives	Status	Update
Support continuation of Table to Farm compost hubs.	To reduce food waste being sent to landfills, compost food waste, and apply compost to urban gardens to grow food.	Ongoing	TBF and ECS continued to promote Table to Farm community composting and gardening throughout the school year. TBF attended four outreach events spanning November 2024 – September 2025 to distribute food scrap collection buckets, share on composting, and support community garden maintenance.
Support expansion, outreach and implementation for residential and commercial organics collection and recycling.	To support greenhouse gas reduction by way of residential and commercial organics recycling implementation by city and state regulatory agencies.	Ongoing	LASAN continued to implement OrganicsLA, a curbside organics recycling program for residents of the City of Los Angeles. The program is in response to the statewide mandate to reduce the disposal of organic waste to and associated greenhouse gas emissions from landfills by 75% by 2025.

Action #22 Narrative:
Table to Farm, initiated in 2016, is a partnership between Environmental Charter Schools (ECS), TBF, and the community-at-large working collaboratively to reduce greenhouse gas emissions by recycling organic food waste and growing local produce. Between 2016 and 2019, three compost hubs were established at ECS Inglewood, Gardena, and

Lawndale. In 2020, a community garden was established outside of ECS Inglewood's campus. The garden continues to thrive and has regular volunteer events to support the upkeep of planting, harvesting, and maintenance. During this reporting period, ECS and TBF, continued to advocate for community composting participation and connected with community members at several ECS events.

CCMP Action #24

Support the inclusion of coastal resilience through natural means and softscape measures into local coastal plan updates

Long-term Environmental Results / Outcomes: Inclusion of climate change adaptation measures in at least half of the 12 local coastal jurisdictions general plans (or equivalent) amendments.

Action #24 Next Steps / Project Name	Objectives	Status	Update
Attend stakeholder meetings for local cities LCP development / updates / implementation.	To continue involvement in stakeholder meetings for local cities LCP development and implementation.	Ongoing	No activities occurred during this reporting period.
Opportunistically assist cities in the development of sea level rise vulnerability studies.	To identify and partner with cities to develop sea level rise vulnerability studies to strategically recommend coastal resilience strategies.	Ongoing	No activities occurred during this reporting period.
Use data collected from beach restoration “soft-scape” projects to inform and assist LCP development.	To provide science-based data to inform LCP development and support beach restoration.	Ongoing	No activities occurred during this reporting period.

CCMP Action #25

Support best management practices, increased public access, and improved public facilities for beaches and other public trail systems to support both enhanced natural resources values and benefits to people

Long-term Environmental Results / Outcomes: Improve access to the coast and enhance coastal experiences through linking and expanding the California Coastal Trail; develop and build partnerships that support the implementation of natural infrastructure throughout the Bay watersheds.

Action #25 Next Steps / Project Name	Objectives	Status	Update
Support implementation of identified actions within plans such as the LACDBH Sea Level Rise Vulnerability Assessment.	To implement adaptation projects that will improve coastal resilience.	Ongoing	LACDBH presented on LA County's Coastal Resilience Initiative at the December 2024 SMBRC Governing Board meeting and introduced a draft resolution of support for the initiative. The Governing Board is scheduled to consider approval of the resolution at its April meeting. On 8 April 2025, LACDBH released the draft Feasibility Study Report for the Living Shoreline Projects for public comment until 30 April 2025.
Continue to advise BMPs for beaches that promote habitat condition improvements and support for unique species.	To build upon and continue partnerships with groups and agencies to benefit beach habitat conditions.	Ongoing	No activities occurred during this reporting period.

CCMP Action #26

Participate in research, education, outreach, and policy on invasive species removal and control

Long-term Environmental Results / Outcomes: Reduce impact of invasive species in critical habitats throughout the Bay and its watershed as measured by the CMP.

Action #26 Next Steps / Project Name	Objectives	Status	Update
*Conduct additional studies and outreach efforts to control impacts of, manage, or reduce the sale of invasive species	Address impacts of invasive species in the watershed		No activities were reported during this reporting period.

CCMP Action #27

Produce educational resources and materials and conduct outreach to improve best management practices for Southern California boaters (e.g., fuel, sewage, and hazardous waste management)

Long-term Environmental Results / Outcomes: Increase understanding and adoption of sustainable boating habits to reduce boating related pollutants entering waterways (e.g., boat sewage, used oil, antifreeze, bilge water, batteries, copper, trash, and aquatic invasive species).

Action #27 Next Steps / Project Name	Objectives	Status	Update
Produce educational materials.	To produce educational materials to increase awareness of boating best management practices to boaters.	Ongoing	TBF in partnership with CDBW and CCC's California Boating Clean and Green Program (BCGP), produced and distributed the winter 2024 *Changing Tide* newsletter. Between October and December 2024, TBF produced the printed and digital 2025 *Southern California Tide Calendars* (in Spanish and English). During this time, TBF produced two marine composting toilet testimonials with real-life users who highlighted the benefits of installing these on-board systems. In January 2025, the 2025 Clean Boater Questionnaire was generated and distributed for virtual engagement. Between January and July 2025, TBF coordinated the assembly and distribution of more than 2,900 California Boater Kits. In May 2025, TBF co-produced and distributed the spring 2025 *Changing Tide* newsletter. In addition, in July 2025, TBF co-produced and distributed the summer 2025 *Changing Tide* newsletter.

Conduct outreach.	To conduct outreach to increase awareness of boating best management practices to boaters.	Ongoing	TBF co-presented on community-based social marketing findings from the 2022 and 2023 pilots to 70+ attendees at the November 2024 California Clean Boating Network meeting. TBF also co-produced the 2024 Boater Kit Feedback Report regarding boaters' assessment of the pollution prevention toolkit (with State Parks and CCC), and co-produced the 2024 California Boater Kit Recipient Questionnaire Report to assess boaters' environmental knowledge (with State Parks and CCC BCGP). During TBF's fall pumpout and dump station monitoring session in October 2024, TBF helped promote State Parks and CCC's fall marine flare collection events in Southern California through flyers and contact with local marina managers. In November 2024, TBF was awarded the 2025 CVA Education and Outreach Grant. In December 2024, TBF utilized social media video testimonials to target and amplify education and outreach on marine composting toilets, reaching 193,378 individuals. TBF also co-produced and was featured in a Dockside podcast episode, which featured local marina maintenance managers and experts to better inform the public on the importance of pumpout systems. In January 2025, TBF presented clean boating practices to a group of enthusiastic boaters at Ventura West Marina. Between January and July 2025, in partnership with CDBW and CCC's California BCGP, TBF distributed over 2,900

			of the 2025 California Boater Kits to Southern California Dockwalkers for peer-to-peer direct outreach. From March – June 2025, TBF promoted and co-hosted seven Dockwalker Trainings with State Parks and CCC's BCGP that totaled 114 individuals in Southern California becoming certified Dockwalkers. In partnership with BCGP, co-planning kicked off for recognizing and promoting the Dockwalker Program's 25th anniversary. On March 16, 2025, its press release went live. In June 2025 TBF produced and published a survey that seeks to fill knowledge gaps about Santa Monica Bay boaters' sewage disposal understandings, practices, and preferences to inform upstream sewage disposal education and outreach. Between June – September 2025 TBF continued to promote the survey at in-person local events and digitally. In July 2025, TBF co-presented on the Dockwalker Program and clean and safe boating at the Channel Islands National Marine Sanctuary Advisory Council meeting with BCGP. In August, TBF presented on the 25th Anniversary of the Dockwalker Program to a national audience at the States Organization for Boating Access Education and Training Symposium to inspire locally-led environmental stewardship in clean boating across the country. In September 2025, State Parks, CCC, and TBF co-hosted a virtual celebration honoring the 25th anniversary of

Action #27 Next Steps / Project Name	Objectives	Status	Update
			the Dockwalker Program. From July-September 2025 TBF co-implemented a community based social marketing pilot in Oceanside, California with partner Action Research. This pilot sought to influence local boaters to use stationary sewage pumpouts.
Manage Pumpout Nav app.	Increase proper disposal of boater sewage.	Ongoing	Continued to manage the Pumpout Nav app via ensuring pumpout and dump station statuses are accurate and responding to problems reported by Southern California boaters. In February 2025 TBF initiated a contract with developer Ecom to oversee the app's California maintenance and development. Between October 2024 and September 2025 TBF directed and collaborated with Ecom to inform this work.
Find funding and implement fuel spill prevention tools and outreach.	To reduce fuel and oil pollution from the boating community.	Ongoing	From January to July 2025, TBF distributed over 2,900 (2025) Boater Kits, each with a fuel bib and two oil absorbent sheets as well as harbor maps with oil recycling information, and more targeted oil pollutant information for Southern California boaters in partnership with BCGP. TBF also co-hosted seven Dockwalker Trainings from March to June 2025 conducted in partnership with State Parks and CCC, which additionally includes information on oil recycling and oil pollution best management practices.

Action #27 Next Steps / Project Name	Objectives	Status	Update
Support and develop marine debris reduction and cleanup efforts.	To reduce fishing line marine debris from the angling community.	Ongoing	TBF continued to promote its instructional do-it-yourself fishing line recycling instructions. TBF produced the 2025 *Southern California Tide Calendars* (in English and Spanish) which include harbor maps featuring fishing line recycling station locations. In February 2025, TBF attended the Boat Owners Association of The United States (BoatUS)'s Turning the Tide virtual summit to learn and engage on marine debris prevention, reduction, and removal. From March – June 2025, TBF co-hosted seven Dockwalker Trainings in partnership with State Parks and CCC, which additionally includes information on marine debris reduction and clean-up efforts.

Action #27 Narrative:
With four million boaters, California has one of the highest levels of recreational boating in the United States. This large volume of recreational activity in our waterways can come at a cost. Boat-based pollutants such as sewage, used oil, household hazardous waste, marine debris, aquatic invasive species, and emerging contaminants impair our waterways. TBF's Boater Education Program was initiated in 1996 with a Clean Vessel Act Education and Outreach grant. The California State Parks Division of Boating and Waterways Clean Vessel Act Program and the Federal Clean Vessel Act Grant Program through the Sport Fish Restoration Program continues to support this initiative. TBF's Boater Education Program provides recreational boaters with pollution prevention tools and resources. This initiative is dedicated to reducing boat-based ocean pollution and fostering stewardship by utilizing collaboration, direct outreach, and technical assistance. Hundreds of thousands of boaters have been engaged using an adaptable strategy based on 1) the support for the provision of sewage disposal facilities like marine composting toilets and pumpout and dump stations; 2)

community-based social marketing and 3) the creation of tools such as the Pumpout Nav app, *Southern California Boater's Guide*, *When Nature Calls* sewage guide, California Boater Kits, surveys, questionnaires, educational videos, and more with key partners. A collaborative approach is utilized, amplifying clean boating messages via initiatives like the Dockwalker Program, California Clean Boating Network, and strong relationships with the boating public, marinas, yacht clubs, and more. During this annual reporting period, TBF finalized 2024 deliverables such as producing marine composting toilet testimonials to initiating implementation of its many 2025 projects from California Boater Kit engagement and distribution, to co-hosting Dockwalker trainings, to implementing community-based social marketing and beyond.

CCMP Action #28

Support efforts of disadvantaged communities to achieve healthy habitats, implement green infrastructure, and reduce pollution

Long-term Environmental Results / Outcomes: Help disadvantaged communities to achieve healthy habitats through restoration and pollution reduction projects.

Action #28 Next Steps / Project Name	Objectives	Status	Update
Support IRWMP and similar programs to preferentially invest in disadvantaged communities.	To support green infrastructure projects for IRWMP and Safe Clean Water Program funding in disadvantaged communities.	Ongoing	No activities occurred during this reporting period.

CCMP Action #29

Reduce health risks of swimming in contaminated waters and consuming contaminated seafoods through more comprehensive source control and, advanced monitoring and public notification

Long-term Environmental Results / Outcomes: Achieve no elevated health risks associated with swimming and seafood consumption through source control, monitoring, and public notification.

Action #29 Next Steps / Project Name	Objectives	Status	Update
Continue implementation and improvement of beach water quality monitoring and reporting system.	To support SWRCB's collection and coordination of bacterial sampling results for beach water quality monitoring required under AB 411; to support Heal the Bay's efforts to standardize beach water quality monitoring and effectively disseminate the information to the public.	Ongoing	Due to the January 2025 Palisades Fire, LACDPH issued Ocean Water Closures and Beach Advisories notices at beaches within Santa Monica Bay. Several entities conducted water quality monitoring. LARWCB collaborated with LACDPH to monitor ocean water quality since 22 January 2025 including collecting samples at 12 beach sites in Santa Monica Bay. LARWCB is also analyzing sediment and sand for metals, PBCs, and PAHs at 11 beaches and four storm drain/creek outfalls along Santa Monica Bay from Zuma Beach to RAT Beach. Sampling began in February 2025 and continue through May 2025. Ocean water quality and sediment/sand sampling results are available on the LARWCB's website. LARWCB also contracted with SCCWRP to coordinate monitoring efforts of other government agencies, academic institutions, and nonprofits. HtB sampled before and after the 26 January 2025 rain event at 10 sites along Santa Monica Bay, including areas within the burn zone, adjacent impacted areas,

Action #29 Next Steps / Project Name	Objectives	Status	Update
			and control sites. Temperature, turbidity, Fecal Indicator Bacteria, PAHs, PCBs, PFAS, benzene, mercury, and other heavy metals were sampled to provide a comparative analysis of initial pollutant levels and stormwater runoff effects. In March 2025, HtB published the results, indicating that water quality at LA's beaches was much better than expected, but more data and information on risk thresholds for recreational contact are needed to determine if the water is safe. The analysis shows that marine life are at serious risk from elevated levels of heavy metals and nutrients. In February 2025, HtB also collected sand samples at each site to test for heavy metals and PAHs. Results are pending. Updates on water quality impacts from partners (LARWCB, SWRCB, and HtB) are scheduled for the 12June 2025 Governing Board meeting.
Maintain and enhance the existing seafood contamination education and enforcement program.	To support and facilitate the continuation and enhancement of the existing seafood contamination education and enforcement program.	Ongoing	At the December 2024 meeting, the FCEC discussed the Safer Seafood "Toxin Tracker" DDT advisory application developed for the public to generate serving recommendations based on catch, new tip cards, and new pier sign design, and updates on pier angler outreach, community outreach, and enforcement. In April 2025, the Draft Palos Verdes Shelf Community Involvement Plan was sent to members for input. PVSTIEG met in December 2025 and discussed the

Action #29 Next Steps / Project Name	Objectives	Status	Update
			conceptual site model, food web model, human health and ecological risk assessment, and the remedial alternative analysis. In March 2025, the Draft Palos Verdes Shelf Conceptual Site Model and Bioaccumulation/Food Web Model Update Technical Memo was provided for member review. USC and California Sea Grant continued to oversee implementation of four projects funded by SWRCB that aim to improve understanding of the human health and ecological risk due to deep ocean DDT+ deposits (i.e., ocean disposal sites, other coastal sources, and DDT processes) in the Southern California Bight. A second community meeting on the DDT contamination was held on October 25, 2024.

CCMP Action #30

Conduct community engagement, education, and inform policies related to water conservation and reuse to reduce water demand and reliance on imported sources

Long-term Environmental Results / Outcomes: Help reduce dependence of the Los Angeles region on imported water and lower the percentage of imported water use by water agencies.

Action #30 Next Steps / Project Name	Objectives	Status	Update
Link water conservation with outreach events and social media.	To opportunistically incorporate water conservation topics during outreach events and on social media.	Ongoing	No activities occurred during this reporting period.
Educate, engage communities, and provide resources that promote the importance of native plants.	To promote the use of drought tolerant native plants.	Ongoing	No activities occurred during this reporting period.
Support efforts by water agencies to promote water conservation and reuse including dissemination of materials.	To promote current information on water conservation and reuse efforts developed by water agencies.	Ongoing	No activities occurred during this reporting period.

CCMP Action #32

Reduce marine debris by supporting bans on single-use items, conducting outreach, and participating in trash reduction programs

Long-term Environmental Results / Outcomes: Implement ban on single-use disposable plastics in Los Angeles County and 100% of cities throughout watershed; engage 30 food service establishments as ReThink Disposable participants.

Action #32 Next Steps / Project Name	Objectives	Status	Update
Find funding for and continue ReThink Disposable LA.	To contribute to source reduction of single-use disposable items from food service establishments.	Ongoing	City of Los Angeles' LA Sanitation & Environment's (LASAN's) Reusable Foodware Microgrant Program pilot concluded in July 2024 and in all 120 food service establishments reduced single-use disposable items at the source and transitioned to reuse. Following this, LASAN and TBF co-produced videos highlighting the program and several of its participants that launched in October 2024. Between October 2024 – September 2025, the videos and results of the LASAN Reusable Foodware Microgrant Program continued to be promoted.
Support municipality bans of polystyrene, non-recyclable plastics, and single use items.	To contribute to source reduction of polystyrene, non-recyclable plastics, and single use items	Ongoing	TBF continued to participate in the Reusable LA coalition and continued to promote Reusable LA's "Hold the Plastic Please" outreach campaign at various outreach events and on social media. TBF partnered on and promoted the 5 Gyres Institute's 2025 Plastic Free Parks community science campaign and its 2024 Plastic Free Parks Trashblitz report.

Action #32 Next Steps / Project Name	Objectives	Status	Update
			The City of LA's Comprehensive Plastics Reduction Program involves adopting measures to reduce or eliminate the production and use of single-use plastic products ("upstream" measures) and encourage reuse of other items to the extent feasible. In September 2024, LASAN released the Final Draft PEIR. On 1 October 2024, the LA City Council certified the PEIR and directed policy development for the following upstream measures: requiring reusable foodware for dine-in services citywide, requiring recyclable/compostable takeout foodware products citywide, and ban of single-use printer cartridges. LASAN was also instructed to report back on the development of a pilot program for reusable/ returnable takeout foodware. At the October 2024 Governing Board meeting, the SMBRC Governing Board adopted resolution 24-03 supporting City of LA's efforts to reduce or eliminate the input of single-use plastics into the City's waste stream and the environment and reduce the aesthetic, environmental, and human health impacts of single-use plastics. SMBRC staff provided the resolution to the LA City Council with a letter from the Governing Board Chair.

CCMP Action #34

Improve understanding of emerging contaminants through monitoring and research to inform source control and reduce loading (e.g., fire retardants), especially in the context of climate change

Long-term Environmental Results / Outcomes: Reduce impacts of emerging contaminants on key habitats in the Bay and its watersheds.

Action #34 Next Steps / Project Name	Objectives	Status	Update
Improve analytical methodology and standardize monitoring of more emerging contaminants.	To improve availability, sensitivity, and repeatability of analytical methods for emerging contaminants to improve data quality for monitoring emerging contaminants in aquatic ecosystems.	Ongoing	The State Water Resources Control, Board is developing a CEC strategic plan that will focus on prevention and source control to proactively protect public health, ecological health, and water quality.

CCMP Action #35

Monitor and inform management actions for Harmful Algal Blooms (HABs)

Long-term Environmental Results / Outcomes: Reduce prevalence of HABs in the Bay and its waterbodies as measured by the Comprehensive Monitoring Program.

Action #35 Next Steps / Project Name	Objectives	Status	Update
Continue to support research and monitoring efforts for HABs, especially in context of climate change and CMP implementation.	To support research and monitoring efforts that fill data gaps in our region for HAB occurrences, frequencies, causes, and impacts, especially in the context of climate change.	Ongoing	No activities reported by partners during this period.
Conduct monthly maintenance of SCCOOS shore station at Santa Monica Pier and seek support for additional sensors.	To collect data on oceanographic conditions in the nearshore environment and potentially inform long-term changes related to environmental factors, including climate change.	Ongoing	No activities reported by partners during this period.

A LMU student conducted her capstone project in May 2024 utilizing the methods developed in the HAB QAPP, authored by Dr. Bratcher-Covino. The data were used to inform the effects of nutrients, pH, and temperature on the distribution of five species of HAB forming algae (four dinoflagellates, and one diatom). The samples were taken from Mother's Beach, Marina Del Rey, near the mouth of Ballona Creek, and from the shore at Playa Del Rey.

CCMP Action #36

Monitor chemical, physical, and biological characteristics in the Bay to inform climate change impacts such as ocean acidification

Long-term Environmental Results / Outcomes: Development and implementation of adaptation strategy addressing impacts of ocean acidification in the Bay.

Action #36 Next Steps / Project Name	Objectives	Status	Update
Support inclusion of climate change impacts into CMP, especially through new models and data.	To implement monitoring associated with new climate change indicators in the CMP; to seek funding and implement the CMP; to complete and release the State of the Bay Report.	Ongoing	SMBRC staff completed habitat highlights for rocky reefs, freshwater/ riparian, coastal wetlands, and soft bottom habitats. The habitat highlights provide updates to the public on relevant work that's underway across the seven habitats while the more comprehensive habitat chapters are being developed. The habitat highlights launched for the rocky reef and freshwater / riparian habitats on smbnep.org. SMBRC staff and SCCWRP continued to develop the draft habitat chapter template for the State of the Bay Report as part of their Prop 50 project. The template is anticipated to be presented to the TAC for input at its April 2025 meeting.
Convene technical advisors to prioritize actions based on information from CMP.	To prioritize monitoring and data collection needs based on the revised CMP for major habitats in the Bay and implement the prioritized monitoring protocols.	Ongoing	SMBRC staff continued to coordinate with DFA and awardees to oversee five approved projects that fill data gaps identified in the CMP (see additional narrative).

Action #36 Narrative:
SMBRC Proposition 50 Grant Program: Five of the six approved projects fill many data gaps identified in the CMP and cover a range of habitats in the Santa Monica Bay and its watersheds including chaparral, riparian, wetlands, rocky reefs, rocky intertidal, and soft bottom (see Action #17 for Culver City's Citywide Bioretention Basin Project funded by Prop 50). SMBRC staff continue to coordinate with DFA and awardees to oversee the following projects during this reporting period:

- Assessment of the Nearshore Rocky Reef Resources of Santa Monica Bay (Occidental College): The grantee met with SMBRC staff to review project status and the dive team completed data collection all 68 rocky reef sites for Year 2. Data entry and QA/QC are ongoing. Data analysis is anticipated to begin by summer 2025. The project team is scheduled to present on the project at the April 2025 TAC meeting and receive input from members on developing the rocky reef State of the Bay Report chapter. The State of the Bay Report rocky reef chapter is scheduled to be completed in April 2026 with the project completed in May 2026.

- Support of Comprehensive Monitoring Program Wetlands Evaluation through Monitoring and Assessment of Santa Monica Bay Estuaries (SCCWRP): SMBRC staff completed the final site visit in October 2024. The grantee finished data entry for spring data collection at all field sites and uploaded the fall 2024 data into the Estuary Marine Protected Area Monitoring Program data portal. The grantee completed development of the data query tool on the portal and continued to collaborate with SMBRC staff on the State of the Bay Report chapter template. The State of the Bay Report coastal wetlands chapter is scheduled to be completed in November 2025 with the project completed in December 2025.

- Establishing a baseline census and ecological monitoring program for *Zostera pacifica* habitats in coastal Southern California (TBF): The grantee continued to conduct quarterly habitat monitoring, deploy sensor arrays and download data and perform maintenance of the sensor arrays at project sites. To date, 1,210.2 acres of extent of eelgrass beds and soft bottom substrate have been mapped and surveyed. The State of the Bay Report soft bottom chapter and project completion are scheduled for June 2026.

- Looking Back to See Ahead - Using long-term monitoring data to predict species persistence across the NSMBW (Pepperdine University): The grantee completed data collection at 16 chaparral and 22 freshwater sites. The grantee also continued data management, QA/QC, and assessments of the current datasets for chaparral and freshwater sites. The Franklin Fire, December 2024, impacted one of the chaparral sites (Pepperdine). The January 2025 Palisades Fire impacted at least five chaparral and six freshwater sites. The burn zone is currently restricted to residents and contractors. The grantee worked with SMBRC staff and partners to address access issues. The final report on the freshwater/riparian habitat is scheduled to be completed in March 2027 with the

project completed in April 2027.

- Monitoring rocky intertidal habitats in the Santa Monica Bay to support habitat assessments (CSU Fullerton Auxiliary Services Corporation): The grant agreement was executed in December 2024. The State of the Bay Report rocky intertidal chapter is scheduled to be completed in June 2027 with the project completed in July 2027.

CCMP Action #37

Increase understanding of deep-water habitats such as submarine canyons, deep reefs, and outfall pipes

Long-term Environmental Results / Outcomes: Enhance functions and conditions of deep marine environments (e.g., deep reefs) in the Bay.

Action #37 Next Steps / Project Name	Objectives	Status	Update
Conduct ROV surveys to collect physical, chemical, and visual data.	To use the ROV to conduct underwater surveys to supplement monitoring.	Ongoing	No updates for this action.
Identify and apply emerging technology and techniques to better characterize Bay habitats, including recommendations.	To utilize cutting-edge advancements in remote sensing, and remote platforms to better characterize the condition of the Bay's habitats.	Ongoing	TBF is working with NOAA and Marauder Robotics to advance design of remote sensing and remote platforms to collect data in nearshore coastal environments.

CCMP Action #38

Monitor and improve understanding of rocky intertidal habitats to inform restoration actions

Long-term Environmental Results / Outcomes: Implementation of the Comprehensive Monitoring Program to achieve a better understanding of the extent and condition of habitats in the Santa Monica Bay and its watershed.

Action #38 Next Steps / Project Name	Objectives	Status	Update
* Support study recommendations and outreach efforts for improved protection	To improve understanding of rocky intertidal habitats to fill CMP data gaps and inform restoration activities		No activities reported by partners during this period.

CCMP Action #39

Monitor and inform effective management of Marine Protected Areas (MPAs), Fishery Management Plans, and local fisheries for recreational and commercially important species

Long-term Environmental Results / Outcomes: Inform agency enforcement plans and long-term adaptive management of MPAs, assist with fishery related public health advisories.

Action #39 Next Steps / Project Name	Objectives	Status	Update
Conduct MPA Watch to monitor and inform use of MPAs in the Bay.	To implement a community-science based program to monitor activities in MPAs and encourage appropriate enforcement and regulation activities.	Ongoing	HtB and LA Waterkeeper individually conducted trainings for MPA Watch volunteers and shore-based surveys. HtB, LA Waterkeeper, SMBRC staff, and TBF continued to attend LA MPA Collaborative meetings to connect with partners and share updates. At the March 2025 LA MPA Collaborative meeting, members discussed ongoing impacts of domoic acid on marine mammals and outreach efforts from MPA Interpreters. An updated was provided on the MPA Decadal Review, completed in 2023, including 20 petitions submitted for CDFW's evaluation. An MPA story map and SeaSketch mapping tool were also shared as resources for the public to learn more about the petitions. See Action #27 for additional MPA outreach efforts included in California Boater Kits and Dockwalker Trainings.

CCMP Action #40

Research and inform best management and pollution reduction practices to address non- point source pollution and facilitate reduction

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline.

Action #40 Next Steps / Project Name	Objectives	Status	Update
Identify partners and identify funding sources for long-term monitoring efforts for LID and water conservation efforts.	To establish project partners and identify potential funding sources in support of long-term monitoring for LID and water conservation efforts.	Ongoing	See Action #36 for efforts related to CMP implementation.
Implement monitoring programs for long-term monitoring and to inform effectiveness of LID/BMP implementation projects.	To fill data gaps and inform LID/BMP effectiveness in reducing non-point source pollution, especially nutrient pollution.	Ongoing	No activities occurred during this reporting period.

CCMP Action #41

Facilitate research, monitoring, and assessments that inform more accurate waste load allocations and development of new water, sediment, and biological objectives

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Bay according to TMDL compliance timeline

Action #41 Next Steps / Project Name	Objectives	Status	Update
* Conduct or support data collection for water quality objective development	To review and, as appropriate, modify and adopt water quality standards as new data and information become available or as specific needs arise; To achieve the goals of the Governor's August 2022 Water Supply Strategy and the mandate of Water Code section 113561.2	Ongoing	No activities occurred during this reporting period.

CCMP Action #42

Inform strategies to reduce greenhouse gas emissions and increase carbon sequestration in support of existing state actions and policies

Long-term Environmental Results / Outcomes: Implement and support carbon sequestration/cycle monitoring, research, and quantification as part of projects to inform or prioritize efforts.

Action #42 Next Steps / Project Name	Objectives	Status	Update
Conduct research to establish rate of carbon sequestration associated with key habitats in the Santa Monica Bay and its watershed.	To conduct research to identify processes and metrics to further understand rates of carbon sequestration within key habitats in Santa Monica Bay and its watershed.	Ongoing	No activities occurred during this reporting period.

CCMP Action #43

Implement the County-wide Safe Clean Water Program to support stormwater pollution control projects

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline.

Action #43 Next Steps / Project Name	Objectives	Status	Update
Participate in advisory board and support implementation of projects from the new funding mechanism.	To improve stormwater management in urban areas, protect water quality within our communities, provide new sources of water for current and future generations, and reduce stormwater pollution through attainment of water quality objectives, increased stormwater retention, increased service to disadvantaged communities, and coordination of efforts across the county.	Ongoing	At the October 2024 meeting, the SMBRC Governing Board adopted Resolution 24-02 regarding recommendations to advance and improve the Safe Clean Water Program. The resolution conveyed support for a robust watershed planning process, requested SMBRC's inclusion as an interested party and partner and designation as a Community Stakeholder in a Santa Monica Bay WASCs, and offered the SMBRC's expertise to the Santa Monica Bay WASCs during the watershed planning process. SMBRC staff provided the resolution to the Santa Monica Bay WASCs, the Regional Oversight Committee, and the Board of Supervisors with a letter from the Governing Board Chair. SMBRC staff also continued to join North, Central, and South Santa Monica Bay WASC meetings as members of the public to stay updated on the Safe Clean Water Program.

CCMP Action #44

Support the development and implementation of a comprehensive regional sediment management plan for restoring natural hydrological functions of river systems and mitigating impacts from climate change

Long-term Environmental Results / Outcomes: Complete and implement a comprehensive regional sediment management plan to restore natural functions where possible and mitigate impacts of climate change.

Action #44 Next Steps / Project Name	Objectives	Status	Annual Report Update
Build capacity and conduct pilot projects to inform future actions and advance program development/design	To utilize pilot level projects to test assumptions and develop preferred methods for sediment transport and/or placement.	Ongoing	Preliminary discussions were had with State Parks, CalTrout, LACBH, and LA County Supervisor District 3. These discussions focused on the beneficial reuse of material held behind dams and other structures for coastal and beach nourishment.