SANTA MONICA BAY NATIONAL ESTUARY PROGRAM

Semi-Annual Report

1 October 2018 – 31 March 2019

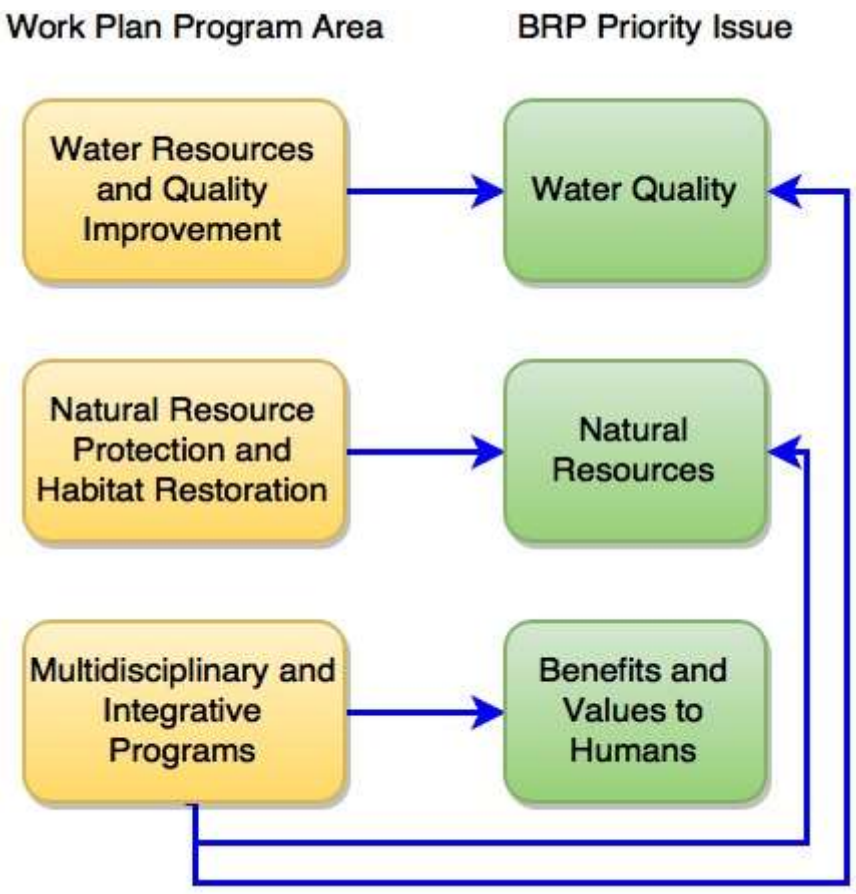
Report Date: 30 April 2019

Prepared for the United States Environmental Protection Agency

Semi-Annual Report Overview and Structure

This semi-annual report outlines and provides an update for each of the FY19 Work Plan tasks for the time period 1 October 2018 through 31 March 2019, the first semi-annual reporting period for FY19. Many of the FY19 tasks continue past efforts. Each table summarizes the current status and a synthesis of updates for each task. For some tasks requiring more description or discussion, an extended narrative follows the table for that task. Note that the FY19 Work Plan was still based on the 2013 Bay Restoration Plan (BRP) and not the October 2018 Comprehensive Conservation and Management Plan (CCMP) Action Plan.

The scope of this semi-annual report is broad and structured into three overarching Program Areas to match the structure of the FY19 Work Plan. The Program Area identified as Water Resources and Quality Improvement relates specifically to the BRP Priority Issue: Water Quality; the Program Area identified as Natural Resource Protection and Habitat Restoration relates specifically to the BRP Priority Issue: Natural Resources. There has also been focus and efforts in FY19 on implementing programs that interconnect and integrate issues across traditional boundaries such as climate change and comprehensive monitoring. These interdisciplinary issues that cover a broad range of topics are categorized into the Work Plan Program Area: Multidisciplinary and Integrative Programs. The diagram below illustrates the connection between SMBNEP's FY19 Work Plan and BRP 2013 Priority Issues.



Each of the three Work Plan Program Areas (semi-annual reporting Program Areas) are further categorized into broad Goals and can be identified as 1.1, 1.2, etc. The table below illustrates each of the three Work Plan Program Areas and the nine Goals identified as priorities for FY19.

Work Plan Program Area	Work Plan Goal
1. Water Resources and Quality Improvement	1.1 Support regional water quality improvement planning and policies
	1.2 Improve water quality through pollution control and prevention
2. Natural Resources and Habitat Protection	2.1 Support natural resource protection policies and programs
	2.2 Restore wetlands and streams
	2.3 Restore coastal bluffs, dunes, and sandy beaches
	2.4 Restore intertidal and subtidal habitats
3. Multidisciplinary and Integrative Programs	3.1 Promote climate change vulnerability assessment and adaptation
	3.2 Conduct public outreach
	3.3 Support planning, monitoring, and organizational management

The Work Plan Goals are further divided into Objectives (at the level of 1.1a, 1.1b, etc.). Each of these Objectives contain a series of tasks identified within a table that will take strides towards reaching the Objective. This semi-annual report provides an update on each of the FY19 Work Plan tasks for all Objectives (i.e., right-hand column of each table, "Semi-Annual Report Update"). The FY19 Work Plan Goals and Objectives are both cross-referenced within this document to the associated BRP Goal or Objective. For additional details at the goal or objective level, refer to the final FY19 Work Plan. Additionally, some tasks are of a larger scope or have had significant achievements within this reporting period, and as such have a more detailed narrative summary after the table of tasks in each section.

1. Water Resources and Quality Improvement

Tasks and activities in this section of the semi-annual report are intended to advance the goals, objectives, and milestones that address water quality-related issues, as laid out in Priority Issue 1, Water Quality, of the BRP. For narrative details on each Objective and task, refer to the final FY19 Work Plan.

1.1 Support regional water quality improvement planning and policies

This FY19 Work Plan objective supports BRP Goal 1: Improve water quality through enhancement of current regulatory framework and collaborative, integrated watershed wide planning and implementation, and Goal 4: Create and support policies and programs to protect natural resources.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
1.1a Implement storm water pollution control BMP funded through Prop. 84 bond and other grant programs; BRP 1.1				
Oversee pollution control BMPs funded through Prop. 84 bond grants	SMBRC	Participate	Ongoing	Completed two Prop. 84 projects: Milton Green Street and University Park Rain Gardens (details in narrative below); executed grant agreement for Westwood Greenway; continued drafting two remaining grant agreements; SMBRC and SCC staff conducted Prop. 12 site visits and developed a recommended projects list; GB approved the Prop. 12 list in Dec, with SCC approving in Mar 2019 (four of the 10 Prop. 12 projects are included under this task)
1.1b Promote and participate in integrated watershed-wide water quality improvement planning and implementation; BRP 1.5, 4.6				
Implement water quality planning and funding projects and programs	SMBRC, TBF	Promote	Ongoing	SMBRC participated on Urban Greening and River Parkways TAC which included numerous meetings, workshops, and multiple statewide site visits; TBF initiated a partnership with City of Manhattan Beach to help support planning for the Manhattan Beach Infiltration Trench Project; TBF co-presented to the LA Beach Commission
Participate in IRWMP to provide technical support	SMBRC	Participate	Ongoing	Participated in IRWMP Leadership Committee meetings as open space representative

Summary Narratives

Prop. 84 and Prop. 12 Grants: Mountains Recreation and Conservation Authority (MRCA) completed the Milton Green Street Project (Prop. 84). The project consisted of the installation of 14 Vegetated Stormwater Curb Extensions (VSCEs) to both sides of Milton Street, adjacent to Ballona Creek, to capture, infiltrate, and treat urban runoff and keep pollutants from entering Ballona Creek. MRCA also planted native shade trees and a variety of shrubs to treat polluted runoff and reduce the heat island effect through the reduction of impermeable surface. The project also improved pedestrian and bicycle safety adjacent to Ballona Creek.

The City of Los Angeles completed the University Park Rain Garden Project (Prop. 84). The project installed 35 rain gardens on public parkways in a highly urbanized area of Los Angeles to capture rainwater from the streets of the University Park neighborhood area near the University of Southern California (USC). The project aims to enhance the water quality of Ballona Creek and Santa Monica Bay watersheds by capturing and infiltrating stormwater, with corresponding pollutant loading reductions. The Project targets a drainage area of 209 acres within the City of Los Angeles.

In December 2018, the Governing Board recommended 10 projects for Prop. 12 funding to the California State Coastal Conservancy (SCC). All ten projects were subsequently approved for funding by SCC in March 2019. Four of those projects fall under Task 1.1a:

- *Monteith Park and View Park Green Alley (Los Angeles County)* – The project consists of constructing an infiltration system and recreational and aesthetic improvements at Monteith Park and at View Park alley. Stormwater will be diverted into the infiltration system and be allowed to percolate into the ground. The Project will prevent potentially polluted runoff from being discharged downstream thus improving the water quality in the Ballona Creek Watershed.
- *Pure Water Project Las Virgenes-Triunfo (Las Virgenes Municipal Water District)* – The project will construct a 100 gallon per minute, indirect potable water reuse demonstration project for reservoir augmentation that will produce up to six million gallons of local, drought resistant water supply per day, while improving in-stream habitat. The demonstration facility is needed to test the advanced microfiltration, reverse osmosis, ultraviolet light disinfection, and oxidation components of a Pure Water advanced treatment facility prior to implementation of a full-scale project.
- *Beach Cities Multi-Benefit Green Streets Project (Torrance, Redondo Beach, Manhattan Beach, Hermosa Beach)* – The project is to design and construct Green Street infrastructure 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.
- *Paramount Ranch Stormflow and Sediment Reduction Project (National Park Service)* – The project reduce sediment, capture and re-use stormwater, restore riparian habitat, increase natural flood attenuation, and protect historic structures at National Park Service's Paramount Ranch on Medea Creek, a tributary to Malibu Creek. The project includes stormwater capture BMPs, riparian restoration, pedestrian and equestrian bridges, and public education.

Implement Water Quality Planning: TBF initiated a partnership with the City of Manhattan Beach to help support their Manhattan Beach Infiltration Trench Project. The project will capture, pretreat, and infiltrate dry and wet weather runoff from ~1500-acre drainage area tributary to the high priority 28th Street storm drain outfall on the beach.

1.2 Improve water quality through pollution control and prevention

This FY18 Work Plan objective supports BRP Goal 2: Improve water quality through pollution prevention and source control.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
1.2a Implement green infrastructure and LID projects; BRP 2.1				
Implement the rain garden pollutant tracking study	TBF	Participate	Ongoing	TBF, in partnership with CRI, began preparation of a draft manuscript highlighting results of the stormwater pollutant study; ongoing research continued for the CRI plant / metal uptake study
1.2b Implement the Boater Education Program; BRP 2.4				
Conduct pumpout monitoring	TBF	Lead	Ongoing	Completed quarterly monitoring of 69 Southern California pumpouts using Pumpout Nav mobile app; finalized quarterly monitoring reports; finalized 2018 annual Pumpout Report
Implement boating community engagement program	TBF	Lead	Ongoing	Finalized assembly of 3,000 Boat Kits for 2019; implemented one dockwalker training and trained 30 individuals as dockwalkers; developed and distributed Winter issue of Changing Tide newsletter; finalized 5th Edition of the Southern California Boater's Guide; conducted four clean boating presentations; attended three community engagement events
Update the CVA Vessel Waste Disposal Plan	TBF	Lead	Ongoing	Finalized data collection and assessment; began writing first draft of updated plan
1.2c Implement the Restaurant Engagement Program; BRP 2.2, 2.5, and 14.2				
Implement Clean Bay Certified program	TBF	Lead	Ongoing	Continued program coordination and participant support; updated program webpage; began planning 2019 partners meeting

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
Implement community composting and organics recycling outreach	TBF	Lead	Ongoing	Obtained funding for third compost hub; executed an MOU with Environmental Charter High School, Lawndale for third compost hub location; continued support for first two compost hub location partners; diverted 2,160 lbs of food waste from landfills to Environmental Charter Middle Schools, Inglewood and Gardena; participated in LA Food Waste Rescue and Prevention Working Group
Single Use Disposable Products Reduction Initiative	TBF	Lead	Ongoing	Finalized audit process at two food service establishments: Gus' Tacos, Palette Food and Juice; finalized two video testimonials; finalized three participant case studies

Summary Narratives

ReThink Disposable: ReThink Disposable, a Clean Water Action / Clean Water Fund (CWA/CWF) program, provides technical assistance to food service establishments for source reduction of single-use disposable items. TBF partnered with CWA/CWF to bring ReThink Disposable to Los Angeles. In total, four restaurants (The Conservatory for Coffee, Tea, and Cocoa, Scoops Chinatown, Gus' Tacos Mexican Grill, and Palette Food and Juice) will collectively reduce single-use disposables by 246,570 pieces and prevent 2,637 pounds of waste from entering the waste stream or ending up as litter on our streets and beaches every year. On average, participating restaurants are also each projected to save $2,000 annually from reducing or eliminating targeted disposable foodware.

2. *Natural Resource Protection and Habitat Restoration*

Tasks and activities in this section of the Annual Work Plan are intended to advance the goals, objectives, and milestones that address natural resources-related issues, as laid out in Priority Issue 2, Natural Resources, of the BRP. The BRP addresses the natural resources-related issues first by supporting better information gathering and implementation of more effective protection policies, regulations, and management programs (Goal 4), and by laying out specific steps and projects needed for protection and restoration for each of the major habitats in the Bay (Goals 7–10). For narrative details on each Objective and task, refer to the final FY19 Work Plan.

2.1 Support natural resource protection policies and programs

This FY19 Work Plan objective supports BRP Goal 4: Create/support policies and programs to protect natural resources and Goal 13: Increase public access to beaches and open space.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
2.1a Promote marine ecosystem protection; BRP 4.2, 4.3, 4.4, 11.4				
Implement ocean vessel aerial monitoring project	TBF	Lead	Ongoing	Completed two survey flights
Participate in MPA Collaborative	TBF	Participate	Ongoing	Participated in quarterly meetings; MPA education and outreach at the Fred Hall sportfishing show
Promote sustainable fishery outreach	SMBRC, TBF	Promote	Ongoing	No activity this reporting period
Monitor Acoustic Telemetry Network	TBF	Participate	Ongoing	Detected three juvenile white sharks and four other tagged fish (narrative below)
Remotely Operated Vehicle (ROV) surveys	TBF	Lead	Ongoing	ROV education and outreach at the Girls in Ocean Science Conference in January 2019 to approximately 200 middle school students
2.1b Support stream protection and policies; BRP 4.1				
Promote creation and adoption of stream protection ordinances	TBF	Promote	Ongoing	Opportunistically participated in conversations with other groups to facilitate progress

Summary Narratives

Ocean Vessel Aerial Monitoring: Since 2010, TBF has partnered with LightHawk to collect data on recreational and commercial vessel distribution and activity relative to the South Coast Marine Protected Areas (MPA) network. This work includes data from 2008 through 2019 collected via aerial

surveys to understand changes in the use of different habitats by fishermen as a result of MPA implementation. Distribution models of these data were published in the scientific journal Ocean and Coastal Management in 2018. TBF and Dr. Amanda Zellmer at Occidental College have contributed to this manuscript. This project informs decision makers, enforcement officials, resource managers and other stakeholders regarding types, distribution and activities of vessels in Southern California coastal waters. TBF expects to continue quarterly surveys through 2019 to collect data and describe any emerging trends in the distribution, action, or type of vessels operating along the mainland coast of southern California.

MPA Collaborative: TBF continued to update and advance the goals of the Los Angeles County MPA Collaborative, concentrating on communication strategies and outreach for the general public. In October 2018, TBF participated in "Honor the Ocean", a celebration of Santa Monica Bay's MPAs. The event featured traditional Chumash blessings and elder storytelling, educational booths, and interactive activities on Zuma Beach for the public to enjoy. Additionally, during this reporting period, the LA Collaborative developed teacher training kits, organized events, and updated the LA County fishing guide funded through the Ocean Protection Council's small grants program to support the Collaborative's outreach and education efforts in Los Angeles County.

Acoustic Telemetry Network: Four acoustic receivers were purchased by TBF in late 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 the northern Santa Monica Bay, with the fourth subsequently included within the network. Currently, there are eight receivers deployed throughout the Santa Monica Bay to inform SMBNEP of the movements, positions, and permanence of great white sharks, giant sea bass, and other large species. Data generated by this expansion of the network will improve protection and understanding for these species and contribute to the Comprehensive Monitoring Program. The receivers were downloaded bi-monthly, cleaned, and redeployed to their moorings. During this reporting period, the receivers detected two shovelnose guitarfish and one grey smoothhound shark initially tagged off La Jolla, one giant sea bass tagged off Catalina Island, and three juvenile white sharks tagged in southern California or central Baja California. One juvenile white shark was frequently detected throughout the Bay across the past six months. Quarterly species count updates are provided by Dr. Lowe's lab at CSULB to TBF.

2.2 Restore wetlands and streams

This FY19 Work Plan objective supports BRP Goal 7: Restore wetlands, streams, and riparian zones.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
2.2a Facilitate restoration of priority wetlands; BRP 7.1, 7.2, 7.5-7.8				
Implement Ballona Reserve community stewardship and invasive species removal project	TBF	Lead	Ongoing	During this period, six community restoration events were conducted and over 60 volunteers participated in removing invasive vegetation and maintaining the restoration site; TBF implemented revegetation protocols to help promote native vegetation establishment; TBF was also awarded a grant through Prop. 12 to expand restoration activities within the permitted project site
Ballona Reserve – Support Restoration Planning	TBF	Support	Complete	During this time period, TBF staff responded to technical questions from CDFW and the restoration planning partners; CDFW and Army Corps continued drafting the Final EIS/R for the Ballona Wetlands Restoration Project
Conduct Malibu Lagoon post-restoration maintenance and monitoring	SMBRA, TBF	Lead	Ongoing	Continued long-term monitoring of the Malibu Lagoon in accordance with permits; conducted additional post-fire visual assessments and communications; hosted four community restoration events in which 132 volunteers participated
Implement Level 3 regional wetland monitoring program	SMBRA, TBF	Lead	Ongoing	Continued meetings with the project team to update the CA Estuarine Wetland Monitoring Manual and Standard Operating Procedures; continued regional data consolidation, including vegetation, water quality, invertebrates, and birds; communicated with partners and as part of regional and statewide stakeholder wetland monitoring groups
2.2b Facilitate stream restoration and fish barrier removal; BRP 7.3, 7.4				
Conduct Stone Canyon Creek maintenance	TBF	Lead	Ongoing	During this period, TBF hosted three events in which 39 volunteers removed invasive vegetation in the restoration site; TBF continued to coordinate with UCLA faculty to explore opportunities to incorporate the site into restoration

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
				ecology courses and boost student participation and stewardship
Conduct mudsnail surveys and research in the Northern Bay watershed	SMBRC, TBF	Lead	Ongoing	No activity this reporting period
Support reintroduction of red-legged frogs in the Santa Monica Mountains	SMBRC TBF	Support	Ongoing	NPS was awarded Prop. 12 funding for the restoration of the California red-legged frog population in the Santa Monica Mountains

Summary Narratives

Ballona Reserve Community Stewardship Project: During this period, TBF continued maintaining and expanding the community restoration site at the reserve. Over 60 volunteers participated in six community restoration events focused on removing non-native, invasive vegetation from the site. Additionally, TBF began implementation of revegetation in target areas of the restoration site including seeding, installing erosion control matting, and planting of *Distichlis spicata* (saltgrass) plugs. Ongoing scientific monitoring continued in accordance with the Implementation and Monitoring Plan. A grant was also awarded through Prop. 12 to support expansion of the project into adjacent, permitted restoration areas. TBF and FBW will conduct restoration activities within the Reserve with a focus on managing non-native vegetation through community restoration events and conducting supplemental revegetation informed by scientific monitoring. The two-year effort will allow both partners to work with youth and community participants to remove iceplant and other invasive, non-native plants from targeted areas, restoring two acres of unique wetland and dune/upland habitat within the Reserve.

CA Red-legged Frogs: The California Red-legged Frog (CRLF; *Rana draytonii*) Reestablishment 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. The proposed NPS project, recently funded through the Prop. 12 program, has been modified to address impacts from the recent Woolsey fire. The project includes monitoring and restoring burned sites to implement the reintroduction protocol. NPS will translocate partial egg masses from a "source" population to suitable stream sites within the Santa Monica Mountains. Eggs and tadpoles will be kept in predator-proof pens located on site in the translocation streams. The pens will be monitored twice weekly. Once the tadpoles are large enough to have a better chance of avoiding predation, they are released. NPS conducts year-round monitoring of the translocation streams for CRLF at all life stages.

Malibu Lagoon Monitoring: In addition to the long-term monitoring program, TBF conducted spot monitoring for sedimentation and direct impacts after the Woolsey Fire. The Woolsey Fire started on 8 November 2018, burning almost 100,000 acres of land and destroying over 1,500 structures in Los Angeles and Ventura Counties. A large portion of the burn area was determined to be moderate soil burn severity, increasing the potential for runoff, debris flows, and other potential hazards. TBF is participating in a post-fire collaborative stakeholder group to consolidate and prioritize monitoring efforts as well as communicating with agencies and municipalities to coordinate recovery efforts.

2.3 Restore coastal bluffs, dunes, and sandy beaches

This FY19 Work Plan objective supports BRP Goal 8: Restore coastal bluffs, dunes, and sandy beaches.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
2.3a Restore coastal dune and bluff habitats; BRP 8.1				
Restore LAX Dunes	TBF	Lead	Ongoing	TBF continued hosting monthly restoration and education events during this period: six events were held in which 112 volunteers focused removed invasive plants; TBF completed a three-year grant through SCC's Explore the Coast program and produced a final report; TBF was also awarded a three-year contract by LAWA to continue habitat maintenance and restoration work
2.3b Protect and restore sandy beach habitats; BRP 8.2				
Implement Beach Restoration Projects to Improve Coastal Resilience	TBF	Lead	Ongoing	Continued long-term monitoring at the Santa Monica Beach Restoration Pilot Project in accordance with permits; continued Malibu Living Shoreline Project, Los Angeles Living Shoreline Project, and Manhattan Beach Dune Restoration Project (narrative details below)
Conduct Beach Monitoring and Research	SMBRC, TBF	Facilitate	Ongoing	TBF, in partnership with CRI, continued implementing the beach characterization study, conducted monitoring at two new sites, conducted data analyses, and submitted an abstract to the annual SCAS meeting with summary results; completed a draft literature review

Summary Narratives

LAX Dunes: During this period, TBF completed SCC's Explore the Coast grant that supported the Coastal Dune Community Stewardship Project, including a final report. Over the three-year duration of the grant, TBF and project partners recruited 1,584 volunteers contributing approximately 4,800 hours over 47 community restoration events at the LAX Dunes. Of these participants, 564 volunteers identified as K-12 and college students, and zip code demographics showed that 73% of all students came from an inland disadvantaged or severely disadvantaged community. Additionally, TBF was awarded a three-year

contract by LAWA to continue habitat restoration and maintenance work at the LAX Dunes. TBF began exploring additional partnerships to support restoration work at the LAX Dunes and participated in meetings with a newly formed stakeholder group to support habitat restoration and monitoring associated with the federally endangered El Segundo Blue Butterfly.

Malibu Living Shoreline Project: This project, in partnership with the City of Malibu, Los Angeles County Department of Beaches and Harbors (LACDBH), and State Coastal Conservancy (SCC) aims to restore three acres of sandy beach and dune habitats at Zuma Beach and Point Dume Beach to improve coastal resiliency and increase the health of the beach systems through a living shoreline approach. During this time period, project partners continued planning and permitting discussions, community outreach, and baseline monitoring. During this period, a consulting firm was selected to provide design services in support of the project. Additionally, the project was presented to the LA Beach Commission in January.

Los Angeles Living Shoreline Project: This innovative project, in partnership with LACDBH, State Parks, SCC, and Honda Marine Science Foundation, aims to implement a multi-habitat approach to restore approximately 3.5 acres of beach and coastal bluff habitat. This project at Dockweiler Beach directly supports a disadvantaged community and adds to SMBNEP's efforts to improve coastal resilience along the coast of Los Angeles County. This project also incorporates the experimental establishment of offshore eelgrass within a one-acre footprint. During this time period, TBF received funding, initiated partnership development, and advanced stakeholder engagement. TBF also worked with a student group at UCLA who conducted research on eelgrass ecology and restoration techniques and produced a final research report as part of the ecology course.

Manhattan Beach Dune Restoration: This project aims to restore approximately 3.5 acres of foredune habitat in the City of Manhattan Beach to provide infrastructure protection and increase coastal resilience, while improving habitat quality through invasive plant removal and native plant establishment. In this time period, TBF began partnership and concept development with LACDBH, City of Manhattan Beach, and USGS, and initiated conversations with the Manhattan Beach City Council and Sustainability Task Force. The project was presented in conjunction with the Manhattan Beach Infiltration Trench Project at the LA Beach Commission meeting in March 2019.

Beach Monitoring: In partnership with Loyola Marymount University's Coastal Research Institute (CRI), this research project is conducting a site-suitability analysis to determine potential areas for beach restoration, evaluating factors such as recreational use, physical, and biological characteristics, while contributing information to the Comprehensive Monitoring Program. In 2018, Dr. John Dorsey and two internship students completed a pilot study and final report for three beach locations in the Bay, and Dr. Cristina Tirado and one internship student completed a literature review on human health benefits of green (and blue) spaces and restored habitats. During this time period, two new monitoring beach sites were added to the data set and the combined results were analyzed. Summary results were submitted as an abstract to the Southern California Academy of Sciences Annual Meeting and accepted.

2.4 Restore rocky intertidal and subtidal habitats

This FY19 Work Plan objective supports BRP Goal 9: Restore rocky intertidal and subtidal habitats.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
2.4a Promote protection of rocky intertidal habitats; BRP 9.2				
Promote protection of rocky intertidal habitats	TBF	Promote	Ongoing	Conducted two CRANE intertidal surveys at Palos Verdes, CA; continued ongoing communications with collaborators; continued indicator development for this habitat as part of SMBNEP's Comprehensive Monitoring Program
2.4b Restore and enhance rocky reef habitat; BRP 9.1				
Implement the rocky reef / kelp forest restoration project	TBF	Lead	Ongoing	Restored 1.3 acres of rocky reef (October 2018 – March 2019): average urchin density was reduced from 17.7 to 1.4 urchins/m^2; several public presentations were given; annual report was completed; SCC approved Prop. 12 funding to restore 69 acres of lost rocky reef habitat off the Palos Verdes Peninsula
2.4c Reintroduce and restore abalone; BRP 9.3				
Maintain abalone research laboratory	TBF	Lead	Ongoing	TBF and SCMI staff monitored and maintained the lab daily; construction of a second lab was completed and is ready to house white abalone
Restore abalone	TBF	Lead	Ongoing	Conducted the first juvenile red abalone outplanting off Palos Verdes using SAFEs; conducted two monitoring surveys in January and March; during this period no green abalone monitoring occurred

Summary Narratives

***Palos Verdes Kelp Forest Restoration Project*:** Teams of restoration divers (SCUBA) have been clearing the ocean floor of over-populous sea urchins, thereby reducing herbivory and allowing for the natural recruitment and development of the giant kelp community. During the reporting period, 1.3 acres of reef were cleared of excess urchins. The average urchin density was reduced from 17.7 to 1.4 urchins/m^2 across the total 48 acres restored since the beginning of the project (July 2013). Early results

from this work are apparent, including the development of a variety of macroalgae occurring on the reefs in all sites, increases in lobster density and invertebrate diversity, as well as increases in fish species richness and biomass. In some locales, giant kelp (*Macrocystis pyrifera*) has created a canopy at the surface of the ocean. In 2018, aerial monitoring conducted by the Central Region Kelp Survey Consortium described a 250% increase in kelp canopy within restored sites.

Southern California Marine Institute Palos Verdes Restoration Reef: SCMI will implement a project to restore 69-acres of rocky reef/kelp habitat near Bunker Point off the Palos Verdes Peninsula. Approximately 70,000 tons of quarry rock from Catalina Island will be used to construct a restoration reef, designed as a set of eight "blocks". Each block will contain three modules in various configurations. Blocks will be placed proximate to natural reef habitat and will be oriented to restore the lost features of the reef. This replicated design will allow SCMI to analyze different reef configurations and the overall contribution of the restoration habitat to the nearshore ecosystem. The project will help restore the nearshore ecological rocky-reef community, support approximately six tons of reef fishes and a proportional amount of invertebrates, and increase the abundance of commercial and recreational species, offsetting historical losses to ecosystem services. During this time period, this project was approved for funding by SMBRC's Governing Board and by SCC's Board through Prop. 12 funding. The project could begin as early as the end of 2019, pending final approval of permits and funding.

***Restore White Abalone*:** Red abalone are used as a proxy for white abalone for restoration technique development. This is in response to the species' shared range, depth, bottom type, food preference, and the endangered status of the white abalone. To increase the infrastructure and develop methods for white abalone recovery, TBF completed the construction of the Abalone Laboratory at the Southern California Marine Institute in June 2016. During this reporting period, a second laboratory was constructed. This second room allows TBF to double its capacity to hold abalone and will provide the staging center for future white abalone recovery efforts. The other room will house both the green and red abalone, along with larval grow out troughs. These spaces serve as a wet lab and hatchery for abalone rearing, experimentation, and long-term housing of broodstock. The facility is a registered aquaculturist and has been certified as "sabellid free" by CDFW for the third year. One captive red abalone spawning event was conducted in the lab on 27 November. The spawn produced approximately 28,940 eggs from one female and sperm was collected from two males. The larvae were settled six days after fertilization, but no juvenile abalone have been observed yet in the trough. In January 2019, juvenile red abalone were outplanted off Palos Verdes, CA. This location was determined to be the most likely to be successful for red and white abalone due to habitat characteristics determined by NOAA, Aquarium of the Pacific, Paua Marine Research Group, and TBF. Twelve hundred juvenile red abalone were outplanted using new methods called SAFEs (Short-term Abalone Fixed Enclosures) and the site has been monitored twice since January.

3. *Multidisciplinary and Integrative Programs*

Due to their multidisciplinary and integrative nature, Objectives and tasks in this section of the semi-annual report are tied to and provide essential support for implementation of all goals, objectives, and milestones of the BRP including information gathering and dissemination, fund raising, and organizational management. For narrative details on each Objective and task, refer to the final FY19 Work Plan.

3.1 Promote climate change adaptation

This FY19 Work Plan objective supports BRP Goal 4: Create and support policies and programs to protect natural resources.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
3.1a Conduct climate change vulnerability assessment and policy improvements; BRP 4.5				
Conduct climate action planning for BRP revision	SMBRC, TBF	Lead	Ongoing	Used CCVA Report and products to inform development of CCMP Action Plan (released October 2018); continued work on supplemental Climate Plan appendix
Participate in AdaptLA project	SMBRC, TBF	Participate	Ongoing	TBF presented alongside USC SeaGrant and USGS in March 2019 to the LA Beach Commission on regional sea level rise modelling, AdaptLA, and future adaptation strategies
3.1b Conduct research on local impacts of climate change; BRP 4.5 and ALL				
Implement kelp forest hydrodynamics study	TBF	Participate	Ongoing	Final report produced in March 2019 and submitted to SCC on 1 April 2019; CSUN and UC Davis redeployed instruments in March 2019 off Palos Verdes
Monitor ocean acidification	SMBRC, TBF	Participate	Ongoing	UCLA IOES Senior Practicum completed a literature search and proposal for eelgrass monitoring off Malibu and Dockweiler; students collected water samples and collected chemistry data in March; data collection by the SAMI pCO^2 and SeapHOx sensors continued and were successful after redeployment at the new, deeper location on PV shelf; both sensors were retrieved and data were downloaded on 29 January; after retrieval, the sensors were sent to manufacturer for annual maintenance and re-calibration

Summary Narratives

CCMP Action Plan and Climate Planning: Climate change, including climate stressors for the region such as sea level rise and drought, continue to be important drivers for planning and adaptive management actions. In 2018, SMBNEP released the Action Plan for the Comprehensive Conservation and Management Plan (CCMP), including actions related to climate change such as filling in important data gaps for our region, or prioritizing projects to increase resilience of our coastal areas such as beach and dune restorations. This Action Plan was a significant collaborative effort by SMBNEP's Management Conference, staff, and interested stakeholders and members of the public. The seven goals and 44 actions it contains represent priorities for our region, established through many workshops and consensus building activities. Work continues on other components of the CCMP, such as the Comprehensive Monitoring Program and the Financial Plan.

Kelp Forest Hydrodynamic Study: This research project is conducted in partnership with UC Davis Bodega Marine Lab, and new partner California State University Northridge. The project continues to inform how kelp forests influence current patterns, wave velocity, and sediment transport off the coast of the Palos Verdes Peninsula. Bathymetry, substrate type, and rugosity data have been collected for one study area. A final project report has been submitted to the State Coastal Conservancy in March 2019 summarizing the results from this two-year study. USC SeaGrant funding has been awarded to continue this effort in two additional restoration sites over the next two years. Instruments were redeployed off Palos Verdes in March 2019, a second site will be selected later this year.

3.2 Conduct public outreach and increase collaborations

This FY19 Work Plan objective supports all the BRP Goals through one or more elements of communication as part of outreach efforts. Specifically, Goals 2, 6, and 14 are directly facilitated by various communication strategies.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
3.2a Create and manage communications; BRP – ALL				
Conduct SMBNEP outreach and communications	SMBRC, TBF	Lead	Ongoing	Released two press releases; 40 media items published; responded to media questions
Attend conferences	TBF	Participate	Ongoing	Participated in Restore America's Estuaries Summit in December 2018 in Long Beach, CA
3.2b Coordinate the internship and volunteer program; BRP Goals 6, 7, 8, 9				
Implement the internship and volunteer program	TBF	Lead	Ongoing	During this period, TBF hosted 22 community restoration events and recruited 395 volunteers and interns; additionally, TBF tabled events including an MPA Collaborative Ocean event, Restore America's Estuaries Conference, Patagonia outreach events, and more
3.2c Participate in and provide technical support to stakeholder groups; BRP – ALL				
Participate in stakeholder groups involved in BRP implementation	SMBRC, TBF	Participate	Ongoing	Continued ongoing participation in regional and state stakeholder groups such as the California Water Quality Monitoring Council committees, and the Greater Farallones Kelp Recovery Group

Summary Narratives

Press and Media Communications: SMBRC and TBF continue efforts to reach out and generate local, regional, and national media coverage in various forms. Two TBF press releases were written and distributed, with nine media pieces delivered, including print and online articles and a radio interview. There were additional media published beyond the nine that included re-postings of press releases (1), listings of events in larger newsletters (27), and references to TBF programs or announcements (3).

Restore America's Estuaries National Summit: This conference explored cutting-edge issues in coastal restoration and management and was comprised of field sessions, presentations, and events. In December 2018, TBF joined over a thousand coastal habitat scientists and managers at the Restore America's Estuaries Summit in Long Beach to highlight monitoring results and restoration efforts by TBF

across various projects, including beaches and dunes, wetlands, and kelp forests. TBF led field sessions, presentations, panels, and coordinated sessions. SMBNEP joined sister estuary programs from across the county to learn from each other and support collaborative opportunities.

Internship and Volunteer Program: TBF continues to host multiple community restoration events per month at sites including Malibu Lagoon, Culver City Rain Garden, LAX Dunes, Stone Canyon Creek, and the Ballona Wetlands Ecological Reserve. These events offer hands-on restoration and stewardship opportunities for volunteers and interns. Additionally, tabling and outreach events like Restore America's Estuaries National Summit and local events hosted by organizations like the MPA Los Angeles Collaborative provided opportunities for interns to interact with the community and share the work of TBF and SMBNEP. Additional work continued through the implementation of CRI research projects (e.g., see tasks under Objectives 1.2a and 2.3b, above, and 3.3b, below).

3.3 Support planning, monitoring, and organizational management

This FY19 Work Plan objective is broad and supports all BRP Goals.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
3.3a Seek and increase funding for BRP implementation; BRP – ALL				
Conduct BRP Revision	SMBRC, TBF	Lead	Ongoing	Continued drafting and seeking input on the CCMP Action Plan; released the final CCMP Action Plan in October 2018, including a redline version with input from the Management Conference; began process to evaluate current structure and governance of SMBNEP; held three facilitated workshops (13 Dec, 17 Jan, 24 Jan) to receive input from the Management Conference; released preliminary survey at one workshop and used it to inform the development of an online public e-survey; received and compiled 43 responses: final report from the independent contractor is pending
Seek and increase funding to support BRP implementation	SMBRC, TBF	Lead	Ongoing	Los Angeles World Airports three-year contract for services was awarded relating to habitat restoration at the LAX Dunes; applied for and received grants from SCC and Honda Marine Science Foundation to implement the LA Living Shoreline project; NOAA NMFS funded TBF to restore white abalone; hosted Coastal Connections 4 fundraiser in October for TBF; SMBRC supported SCC's Prop. 12
3.3b Monitor and report on the Bay's environmental condition; BRP 4.7, 10.1 and ALL				
LMU's Coastal Research Institute	TBF	Co-Lead	Ongoing	Released CRI's Internship and Research Assistant Program announcement and received 59 applicants; interviewed 23 candidates for 14 positions; recruited six faculty fellows and worked to develop projects and budgets
Update CMP and plan for next SotB Report	SMBRC, TBF	Lead	Ongoing	Conducted several conference calls and meetings with TAC habitat subgroups to move forward with indicator development

Summary Narratives

LMU's Coastal Research Institute: Ongoing and new faculty fellow research projects during this reporting period included: intertidal microplastics research, beach characterization study, modeling coastal climate stressors and adaptation strategies, native plant microbe interaction research, eelgrass and seafood genetics research, marine invertebrate physiology, human health benefits of habitat restorations, and habitat restoration and monitoring. These projects work to fill CMP and regional data gaps through a partnership of TBF and LMU's Seaver College of Science and Engineering.

Task Description	Engaged SMBNEP Entities		Status	Semi-Annual Report Update
	Entities	Role		
3.3c Support organizational management; BRP – ALL				
BRP tracking	SMBRC, TBF	Lead	Ongoing	Continued to work to develop cross-coordination with new CCMP Action Plan; completed draft Work Plan for FY20; completed this semi-annual report
Prop. 50 Grants	SMBRC	Lead	New	Convened a TAC Workgroup which met in mid-October 2018 and identified topic areas where monitoring projects can be carried out to meet Prop. 50 funding goals; TAC workgroup recommended each habitat group identify three priority projects in the topic areas
Prop. 12 Grants	SMBRC, TBF	Participate	New	SMBRC approved the disbursement of Prop. 12 funds (Dec); In March 2019, SCC authorized the disbursement of an amount not to exceed $6,895,100 to nine nonprofit organizations and public agencies for 10 projects that implement the Bay Restoration Plan (CCMP) (additional project details in narrative)
Board and Committee Support	SMBRC, TBF	Lead	Ongoing	TBF BOD met on 29 Nov 2018 and 6 Feb 2019; SMBRC GB met in Oct and Dec 2018, and Feb 2019; SMBRC EC met in Nov 2018, and Jan and Mar 2019; SMBRC WAC met in Jan 2019

Summary Narratives

Proposition 12 Projects: In addition to the Prop. 12 projects described under Tasks 1.1a, 2.2a, and 2.4b, the following projects were recommended by the Governing Board, and approved for funding by SCC:

- *Palos Verdes Peninsula Land Conservancy Abalone Cove Habitat Restoration* – This project will implement an existing habitat restoration plan on 13-acres at Abalone Cove Reserve. The restoration includes the removal of invasive trees, shrubs, and herbaceous plants; the propagation of native plant species and desired quantities; irrigation and planting specifications; maintenance schedule; and monitoring and reporting protocols.
- *Mountains Recreation and Conservation Authority (MRCA) Carbon Canyon Acquisition Project* – The project entails the acquisition in fee of 91 acres of undeveloped land in Carbon Canyon, outside of Malibu. MRCA will own and operate the land in perpetuity. The project will permanently protect 91 acres of open space and habitat in the Santa Monica Mountains,

preserving habitat and wildlife corridors, preventing development, preserving the scenic viewshed, and increasing public access to recreation.

- *Resource Conservation District of the Santa Monica Mountains Topanga Lagoon Restoration Planning* – In partnership with State Parks, the project will advance the planning effort for the restoration of Topanga Lagoon. The Topanga State Park General Plan (2012) identified the lagoon and adjacent wetland restoration as a key action item. The goal of this project is to build on the Topanga Creek Watershed and Lagoon Restoration Feasibility Study (2002), Topanga Lagoon Preliminary Soil Investigation (2003), and the Topanga Lagoon Bridge Replacement and Lagoon Restoration study (2004) to produce conceptual restoration alternatives for Topanga Lagoon