

SMBNEP Program Accomplishments from Previous Year (2019)

This section contains a synthesis of programmatic or environmental success stories from the past year. This includes highlights from significant programs or projects and is categorically subdivided into ‘wetlands, rivers, and streams’, ‘beaches, dunes, and bluffs’, ‘in the ocean’, ‘integrated coastal projects’, ‘climate change’, and ‘our communities’. For additional detail on project activities, visit TBF’s website: www.santamonicabay.org.

Wetlands, Rivers, and Streams

[Malibu Lagoon Post-Restoration Monitoring](#) – This long-term comprehensive monitoring program evaluated the condition of the post-restoration Lagoon through biological, physical, and chemical surveys. In August 2019, the sixth and final [Comprehensive Monitoring Report](#) was completed and released, and the site was found to be meeting or exceeding all identified project goals and success criteria. Malibu Lagoon continued to have improved circulation, water quality, and overall condition. Public restoration events were held periodically to remove non-native, invasive vegetation.

[Community-Based Restoration at Ballona Wetlands](#) – This long-term project is restoring approximately three acres of heavily degraded habitats at the Ballona Wetlands Ecological Reserve through community-based restoration activities. In 2019, 95 volunteers removed invasive vegetation through eight community restoration events. Additionally, TBF produced a [Year 3 Annual Report](#) in August 2019. Year 3 results indicated a significant reduction in non-native vegetation cover in most areas as compared to the baseline, and an increase in native vegetation cover. Ongoing invasive vegetation removal, monitoring, and revegetation efforts will continue in 2020.

[Evaluating Regional Wetland Monitoring Programs](#) – This program worked towards increasing regional understanding of the condition of local coastal wetland systems and applying that knowledge towards standardizing wetland monitoring across the state of California. In 2019, this program continued work on data standardization, data consolidation and analyses, held program partnership meetings, and conducted outreach activities. Additionally, work continued updating the California Wetland Monitoring Manual. This program is conducted in partnership with California State University, Long Beach, Tijuana River National Estuarine Research Reserve, and Southern California Coastal Water Research Project.

[Stone Canyon Creek Restoration](#) – TBF, UCLA, and the UCLA Lab School have worked together, alongside thousands of volunteers, to help restore a portion of one of the few remaining unburied creeks in the area. Serving as a ‘living classroom’ for both UCLA and the Lab School, this project is being scientifically monitored by UCLA and TBF for vegetation and wildlife, as well as periodic community maintenance. In 2019, UCLA’s Environmental Sustainability Committee began developing stewardship planning for this site for the next several years, continued monitoring, and started planning for restoration events.

Beaches, Dunes, and Bluffs

[LAX Dunes Restoration](#) – In partnership with Los Angeles World Airports and Friends of the LAX Dunes, TBF conducted [monthly volunteer restoration events](#) at the LAX Dunes to remove

invasive vegetation and teach the local community about the importance and resilience of coastal dune systems. Additionally, TBF coordinated biological monitoring activities and lead partners in larger-scale invasive plant removal efforts. In 2019, 766 volunteers completed over 2,000 hours and pulled over 850 bags of invasive, non-native vegetation. Additionally, the program had volunteer participants from nearly 200 unique zip codes, with many of them from disadvantaged communities. The third and final report for the [Coastal Dune Community Stewardship Project](#) was produced in March 2019. In August, TBF initiated a new three-year agreement with City of Los Angeles to conduct restoration activities and scientific monitoring in the northern 48-acre area and expand into the central 52-acre dune area.

[Santa Monica Beach Restoration Pilot Project](#) – This pilot project is restoring approximately three acres of sandy coastal habitat on the beach in the City of Santa Monica. The project is reestablishing native vegetation on the beach, while aiming to create a sustainable coastal strand and foredune habitat complex resilient to sea level rise and coastal erosion. In 2019, native dune vegetation and sand hummocks continued to establish, in some places up to a meter in height, ongoing monitoring informed climate change resiliency planning, outreach efforts continued to inform coastal planning, and a [Year 3 Annual Report](#) was produced in September.

[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. In 2019, project partners continued planning, permitting, community outreach, and conducted baseline monitoring. Conceptual designs, artistic renderings, and restoration design was completed by Rios and Coastal Restoration Consultants. Interpretive sign designs will be finalized in early 2020.

[Manhattan Beach Dune Restoration](#) – This project aims to restore approximately three acres of foredune habitat in the City of Manhattan Beach to provide infrastructure protection and increase coastal resiliency, while improving habitat quality through invasive plant removal and native plant establishment. In 2019, TBF continued partnership and concept development with LACDBH, City of Manhattan Beach, and USGS, presented to Manhattan Beach’s City Council, and was awarded a grant from California State Coastal Conservancy to start work in early 2020.

[Beach Characterization Studies](#) – 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 2019, Dr. John Dorsey and several CRI internship students continued a pilot study along beaches in the Bay, initiated the site-suitability analysis, assessed beach vulnerability, and produced a research poster.

In the Ocean

[Kelp Forest Restoration](#) – This project was developed to reverse the loss of kelp forests off the Palos Verdes Peninsula. The restoration is achieved by systematically reducing the density of

sea urchins on the ocean floor to a target of two per square meter. This approach allows for the regrowth of kelp and increases diversity. In 2019, five acres of kelp forest were restored, bringing the total for this project, started in 2013, to 51.9 acres in total. Commercial fishermen and TBF scientists restore and monitor these reefs, respectively, as they are transformed from urchin barrens to kelp forests.

[Abalone Restoration](#) – This project implements a multifaceted approach to research and method development to restore populations of abalone to Santa Monica Bay and adjacent coastal waters. In 2018 and 2019, construction phases for two abalone laboratories were completed at the Southern California Marine Institute (SCMI). In these laboratories, TBF advances research on captive and wild abalone care, spawning, and larval cultivation techniques. The focus of this work has been refined to support the recovery of the endangered white abalone. Over 1,600 white abalone were transported from Bodega Marine Lab to SCMI in August 2019, and they were the first animals of their species to be outplanted into the wild in November 2019.

[Socio-Economic Research Related to Marine Spatial Planning](#) – This aerial-survey based project maps the location, type, and activity of boats along the southern California coast from the U.S. Mexican Border to Point Conception. Started in 2008, this effort was intended to track boater responses to the establishment of the Marine Protected Area (MPA) network. Quarterly survey flights continue to assess compliance with MPA regulations and capture emerging trends in fishery or boating activity. In 2019, TBF biologists collected data from the planes donated by LightHawk volunteer pilots to continue this fishery independent data set. TBF received an award from LightHawk in appreciation for this longstanding partnership.

[Oceanographic Shore Station](#) – An array of sensors is affixed to the Santa Monica Pier measure the temperature, pressure, chlorophyll, and salinity of the ocean water. These data are available real-time on the Southern California Coastal Ocean Observing System website [SCCOOS website](#). In 2019, TBF, Los Angeles Waterkeeper, and SCCOOS divers maintained this array with support from the City of Los Angeles, US EPA, and the City of Santa Monica Harbor Patrol. This shore station is one of four in southern California. Collectively these stations help describe changes in the nearshore ocean over time.

Integrated Coastal Projects

[Los Angeles Living Shoreline Project \(LA-LSP\)](#) – This innovative project, with a diversity of partners and supporters, aims to implement a multi-habitat approach to restore approximately 3.5 acres of beach and coastal bluff habitat while increasing coastal resilience in a disadvantaged community. This project also includes an experimental project to establish offshore eelgrass within a one-acre footprint. LA-LSP is being funded by the State Coastal Conservancy and Honda Marine Science Foundation. In 2019, partnerships and planning continued, baseline surveys were initiated in partnership with CRI, and surveys were conducted off Malibu and Catalina Island to identify potential eelgrass donor beds and inform permitting.

[Microplastics Research](#) – Plastic is the most prevalent type of marine debris found in our oceans, and microplastics are considered an emerging constituent of concern due to their ubiquitous presence in the environment, danger to marine life when ingested, and potential to

bioaccumulate chemicals up the food web. In 2019, CRI continued refining a protocol to extract microplastics from sediments including infrared spectroscopy and continued a pilot study along Bay beaches. Ongoing partnership development with University of California Santa Barbara will continue to inform regional data gaps in the fate and transport conceptual model for microplastics in the nearshore environment and invertebrate community.

Climate Change

[Climate Change Action Planning](#) and CCMP Action Plan – 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. The seven goals and 44 actions it contains represent priorities for our region, established through many workshops and consensus building activities. In 2019, SMBNEP completed the [Finance Plan](#), another component of the CCMP, and continued work on the Comprehensive Monitoring Program and an MOU to inform structure and governance.

[Ocean Acidification](#) – An array of instruments that measure pH, dissolved oxygen, and pCO₂ have been deployed off the Palos Verdes Peninsula since the second half of 2016 by the Sanitation District of Los Angeles County. The data collected by this project will improve our understanding of ocean acidification and hypoxia off our coast. In 2018 and 2019, data were collected at the second location at a depth of 60 meters and showed less variability as compared to the first deployment year in 15 meters. These data allowed good characterization of the frequency, magnitude, and duration of OAH events in the nearshore surface and offshore bottom layers.

[Eelgrass Ocean Acidification Buffer](#) – University of California Los Angeles' 2019 Senior Practicum class conducted research assessing the effects of offshore eelgrass on pH and dissolved oxygen. The focus of their study was to determine the strength of buffering, exhibited by the increase in pH (lowering acidification) in eelgrass in Santa Monica Bay. Their preliminary findings are being built upon by the 2020 Senior Practicum class to further this research.

[Kelp Forest Hydrodynamics](#) – This cooperative project is designed to inform how kelp forests influence current patterns, wave velocity, and sediment transport off the coast of the Palos Verdes Peninsula. Additional funding was awarded to California State University Northridge and University of California Davis from University of Southern California SeaGrant to continue this study on two more kelp forest sites. In 2019, two sites were established off Palos Verdes and instruments were deployed. Data collection was halted due to high activity in the site from commercial lobster vessels, and all instruments were removed from the sites. This study will resume in spring 2020.

Our Communities

Proposition 84 Grant Program – SMBRC was originally allocated \$18 million in state funding for projects including coastal watershed contamination prevention and coastal and marine habitat restoration. Three projects were under construction in 2019.

- The **Rancho Palos Verdes SMB Catch Basin Inserts Project** retrofits and installs over 1,200 Connector Pipe Screen (CPS) units in existing catch basins in an approximately 14 sq. mile area across three cities in the Palos Verdes Peninsula Watershed draining to Santa Monica Bay.
- The **Westwood Neighborhood Greenway Project** by the City of Los Angeles will divert and capture dry-weather flow from a storm drain that captures runoff from 2,400 acres of drainage area into two parallel bioswales to improve water quality in the receiving waters (Sepulveda Channel, Ballona Estuary and Santa Monica Bay Beaches). The project is expected to capture 67,000 to 340,000 gallons per day of urban runoff, and the "first flush" of the storm from a 2,400-acre drainage area during storm events.
- The **Ladera Park Water Quality Enhancement Project** by the Los Angeles County Public Works will treat, store, and infiltrate the 85th percentile 24-hour storm volume of 5.1 acre-feet of stormwater runoff and all the non-stormwater runoff from a 110-acre tributary area through a combination of pre-treatment, retention, and infiltration facilities.

One project was in the planning, design, and engineering phase in 2019.

- The **Culver Boulevard Realignment and Stormwater Infiltration/Retention Regional Project** by the City of Culver City will capture and treat the 85th percentile, 24-hour design storm runoff from a drainage area of 800 acres using a belowground infiltration/retention basin, infiltrate runoff from 647 acres, and retain and treat the remaining 153 acres for reuse as irrigation for the street median. The project will capture a maximum of 42.79 acre-feet of runoff during a storm event, and 100% of the dry weather flow from the drainage area.

Proposition 12 Grant Program – In December 2018, the Governing Board recommended 10 projects for Proposition 12 funding to the California State Coastal Conservancy. All ten projects were subsequently approved for funding by SCC in March 2019. Most of the 10 projects have initiated their grants with SCC, and several have begun implementation. The 10 projects are as follows: Rocky Reef Restoration on Palos Verdes Shelf, California Red-legged Frog (*Rana draytonii*) Reestablishment Project, Monteith Park and View Park Green Alley, Community-Based Restoration at Ballona Wetlands, Pure Water Project Las Virgenes-Triunfo, Beach Cities Multi-Benefit Green Streets Project, Paramount Ranch Stormflow and Sediment Reduction Project, Palos Verdes Peninsula Land Conservancy Abalone Cove Habitat Restoration, Carbon Canyon Acquisition Project, and Topanga Lagoon Restoration Planning.

Internship and Research Assistant Program – Through this program, TBF and CRI coordinate volunteers, students, and postgraduates in research, habitat restoration, and scientific data

collection efforts across many projects. The program also supports the implementation of the Comprehensive Monitoring Program. In spring and early summer 2019, CRI expanded to include six Faculty Fellowships and 14 paid undergraduate internship students. An additional 21 undergraduates, three graduate students, and eight high school students participated in CRI research. Focal research directions included: intertidal microplastics research, beach characterization studies, modeling coastal climate stressors and adaptation strategies, native plant microbe interaction research, eelgrass and seafood genetics research, marine invertebrate physiology research, and habitat restoration and scientific monitoring. Each research direction aims to answer multiple research questions. Students created multiple presentations, posters, and other products as part of the research efforts.

[Boater Education Program](#) – This is a multi-faceted program designed to engage the Southern California boating community to reduce and eliminate boating-related ocean pollution. In 2019, the program continued to publish “[The Changing Tide](#)” statewide newsletters, annual tide books, and published the 5th edition of the popular [Southern California Boater’s Guide](#). Through the Honey Pot Day program, mobile sewage pumpouts are offered; in 2019, 110 boaters participated, and 2,160 gallons of sewage were properly disposed. The program also produced and distributed 3,150 Boater Kits and trained 89 Dockwalker volunteers. The [Pumpout Nav](#) app has been updated to include sewage dump stations and floating restrooms in addition to sewage pumpout stations. TBF and San Francisco Estuary Partnership, in partnership with California State Parks Division of Boating and Waterways, was awarded the ‘Outstanding Service Award’ for the Pumpout Nav app at the States Organization for Boating Access.

[Clean Bay Certified Program](#) – This program partners with watershed cities to certify restaurants that comply with stormwater permit requirements and additional pollution prevention practices. On 11 July 2019, TBF hosted a partners meeting and inspector training for all participating cities. The partners meeting provided a forum for collaboration and discussion of the program direction. The inspector training was provided to review the Clean Bay Certified Inspector Checklist, train new inspectors, refresh returning inspectors, and discuss potential checklist updates. Food service establishments were certified in 2019 using an updated rigorous inspection checklist.

[ReThink Disposable LA](#) – Clean Water Action / Clean Water Fund (CWA/CWF) program provides technical assistance to food service establishments for source reduction of single-use disposable items. In 2019, TBF received funding to implement this program at boating related food service establishments such as yacht clubs and marinas. Program implementation will occur in 2020.

[Table-to-Farm Composting](#) – To better address food waste and greenhouse gas emissions from landfills and transportation due to hauling waste, TBF is working with restaurants in Inglewood, Gardena, and Lawndale and Environmental Charter Schools (ECS) to close the food loop. In 2019, the program built a third compost bin at ECS Lawndale and recruited two additional restaurants to participate in the program. Since September 2017, 10,430 lbs of food waste have been diverted from landfills and composted in a three-bin system. Approximately 900 students have been engaged in the program and have learned about food waste, compost, and climate issues. To fully close the food loop, TBF and ECS Inglewood will be constructing five community

gardens just off campus to grow fruits and vegetables for the community, utilizing the compost created with restaurant food waste. Funding for this has been obtained through the US EPA, and program implementation will occur in 2020.