THE BAY FOUNDATION

2023 ANNUAL REPORT

To restore and enhance Santa Monica Bay through actions and partnerships that improve water quality, conserve and rehabilitate natural resources, and protect the Bay's benefits and values.

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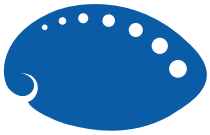
CONTENTS

2023 AT A GLANCE

10

celebrated 10 years of kelp forest restoration and 62.33 acres restored



5

celebrated 5 years of white abalone outplanting, having successfully outplanted 6,230 white abalone

100+

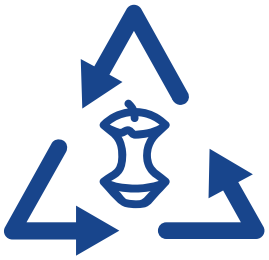
supported City of Los Angeles' Reusable Foodware Microgrant Program by co-engaging 100+ restaurants in the transition from single-use disposable foodware to reusables, reducing trash in our communities and ocean

1

launched 1 volunteer scientific SCUBA diver program

5

improved coastal resilience along Santa Monica Bay at 5 different restoration sites, introducing California native coastal vegetation to sandy beaches from Zuma Beach to Manhattan Beach



2,000

re-established 3 community compost hubs with Environmental Charter Schools and recycled over 2,000 pounds of food scraps locally

3,000 +

engaged thousands of boaters in pollution prevention and environmental stewardship

a year in review

A MESSAGE FROM CEO TOM FORD

Dear Friends,

The Bay Foundation works to enhance and restore coastal habitats, adapt to climate change, and support equity throughout the coastal communities of Los Angeles CA. 2023 was a robust year for our efforts, with positive impact in Santa Monica Bay, along the Los Angeles County coastline, and in many restaurants, schools, marinas, and more.

Below is a recap of our initiatives and their accomplishments. We hope this inspires you, as it does us, to advance the protection and restoration of the beloved Bay, beaches, and watershed.

Thank you for your interest and support!

Cheers,

Tom Ford
Chief Executive Officer
The Bay Foundation

OCEAN RESILIENCE

TBF's Ocean Resilience Program reverses ecological loss by restoring kelp forests, eelgrass meadows, and recovering threatened and endangered species of abalone.

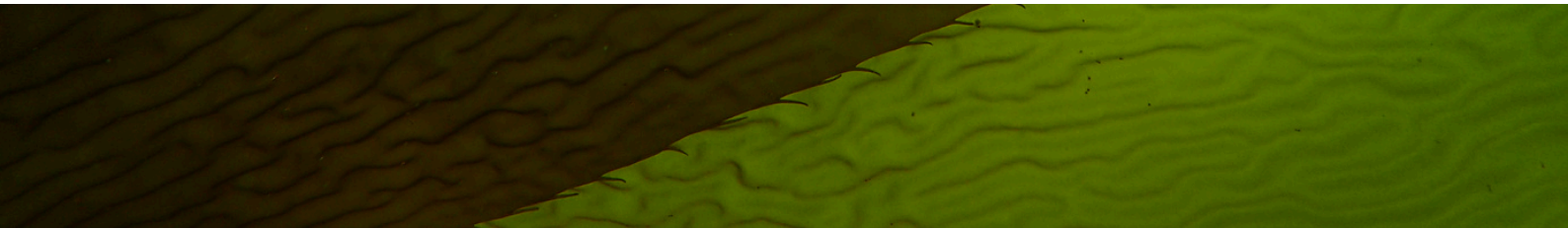
RESTORING KELP FORESTS

In 2023, The Bay Foundation (TBF), along with academic researchers and commercial sea urchin harvesters, **approached 10 years** of continuous effort to restore rocky reefs from an urchin barren state to a kelp forest state on the Palos Verdes Peninsula. Our actions have **directly advanced the resilience of the kelp forest and increased biodiversity, with a total of 62.33 acres of reef** cleared along Palos Verdes since the beginning of the project in July 2013.

In that time, TBF's Ocean Resilience Program and partners documented the development of a variety of macroalgae occurring on the reefs, higher densities and biomass fish species within restoration sites, and higher algal and invertebrate diversity at all restoration sites. Kelp forests are dynamic, changing from year to year. 2023 was off to a slow start but with cooler water off the coast giant kelp was flourishing across our restoration sites by mid-summer. Learn more details in this report.

Why is restoring kelp significant? The three-dimensional kelp forests of Southern California **support an incredibly diverse and biologically productive ecosystem that is home to more than 700 species of algae, invertebrates, fish, and marine mammals**. Giant kelp is one of the fastest-growing organisms on the planet, and as it grows, it pulls **carbon dioxide from the seawater as part of the first stage of a carbon sequestration pathway**. The ability of giant kelp forests to address ocean acidification and reduce erosional forces makes giant kelp forests incredibly valuable in our efforts to adapt to climate change in Los Angeles.

In 2023, TBF's Ocean Resilience Program **launched its first volunteer dive program**! Our volunteer scuba divers are scientific "AAUS" trained, which enables them to execute work alongside TBF staff. Thus far, we've had a great time restoring the ocean and broadening the scientific dive skills of our volunteers. The extra hands underwater allowed us to double the restoration efforts this year. **If you are an AAUS diver and would like to join us, please check out our website for more information, and we will be in touch.**



RECOVERING ABALONE POPULATIONS

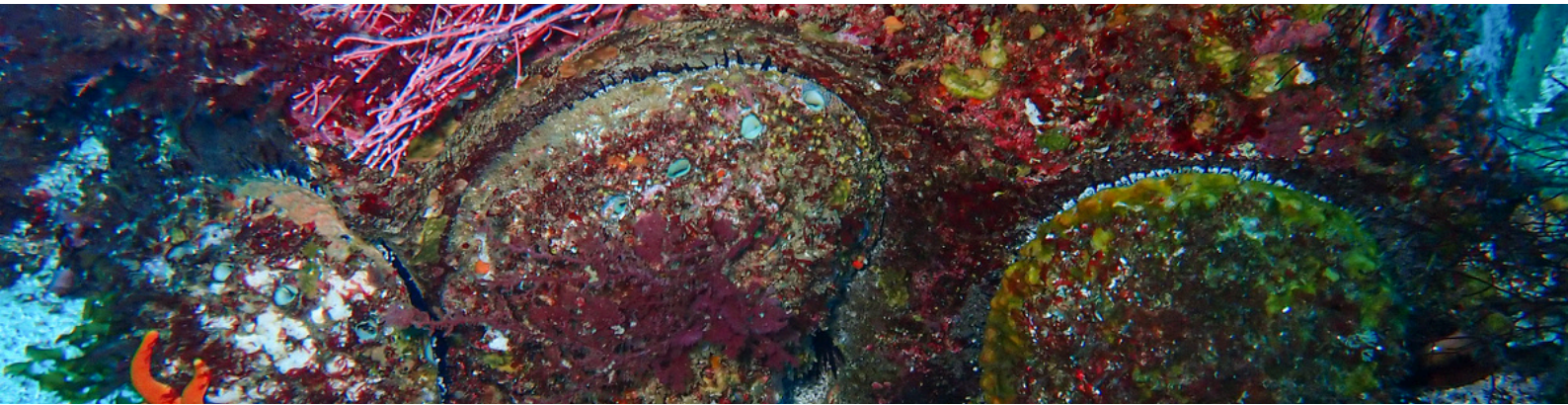
TBF's Ocean Resilience Program **celebrated 10+ years of abalone recovery** and **received NOAA Fisheries 2023 Partner in the Spotlight award for white abalone**. With gusto, TBF continues contributing to a statewide effort to **restore the federally endangered white abalone, *H. sorenseni*,** in rocky reef habitats along the Southern California coastline. This **species is currently an NOAA "Species in the Spotlight", being one of ten species considered among the most at risk of extinction**. To support the restoration of this species, TBF manages the operations and maintenance of **two mariculture facilities** located at the Southern California Marine Institute (SCMI). These facilities **grow, feed, assess, and acclimate captive-bred white and red abalone prior to releasing them into the ocean**.

The following **white abalone were transferred to TBF's abalone mariculture** facility at SCMI in 2023:

- January 5, 2023: 539 white abalone were transferred from the Aquarium of the Pacific
- January 12, 2023: 2,032 white abalone (due to storm impacts and flooding) were evacuated from The Cultured Abalone Farm
- February 1, 2023: 216 white abalone transferred from the Moss Landing Marine Lab
- July 12, 2023: 373 white abalone were transferred from Bodega Marine Lab by a volunteer Lighthawk flight, and 141 were transported by vehicle from the Santa Barbara Sea Center.

In addition to overseeing these mariculture facilities, once captive-bred abalone reach outplant size (25mm or greater), TBF's scientific divers work with white abalone partner organizations to **release these abalone to the ocean**. Abalone are released into PODs (Protective Outplanting Devices) or BARTs (Baby Abalone Recruitment Traps) along the Southern California coast. In the spring and fall of 2023, **3,997 endangered white abalone were outplanted to the experimental abalone sites off Palos Verdes and San Diego**. TBF continues to monitor these outplanted animals after their release, ensuring **their viability and quantifying the success of the project**.

In Santa Monica Bay, **there is no abalone without the kelp**. **Abalone are significant to kelp forests as they compete with urchins for space, which helps keeps the urchins from decimating the forests.** They may also clear space for other species to flourish in the kelp forest ecosystem. TBF and partners' **ultimate goal is to recover abalone populations in Santa Monica Bay and Southern California to support these rare species and their socioeconomic benefits** to people.



RESEARCHING & RESTORING EELGRASS

Eelgrass (*Zostera*) is a marine flowering plant that is an economically and ecologically valuable marine habitat found in temperate regions throughout the world. It provides a **rearing habitat for juvenile fishes, filters nutrients, sequesters carbon, and reduces erosion, among a myriad of other functions**. Eelgrass beds are typically found near the coastline and as such are more vulnerable to anthropogenic impacts and climate change. Despite the importance of seagrasses, **these habitats are experiencing staggering rates of loss through an amalgamation of global threats and local stressors**. Therefore, **TBF and Paua Marine Research Group (PMRG) aim to fill research gaps on open coast eelgrass habitats and develop restoration techniques**.

In 2023, TBF's Ocean Resilience Program and project partners conducted **numerous SCUBA-based surveys to monitor eelgrass** at both transplant and donor sites from 2021. TBF and project partners **transplanted 8,400 shoots of eelgrass, *Zostera marina*, to another cove** on the leeward side of Catalina Island. In 2023, **one year after the transplant, this site showed growth of the grasses as they expanded across the cove, an early sign of success** for this cutting-edge program. TBF and PMRG continue to closely track eelgrass health, fish community, and oceanographic metrics to understand drivers of transplant success.

COASTAL ADAPTATION

TBF's Coastal Adaptation Program and its many partners are bringing back dunes, plants, and wildlife to Los Angeles beaches. These "living shorelines" provide nature-based solutions to address climate change, beautify, and protect the coast from erosion and flooding. Results from scientific monitoring demonstrate that living shorelines create beaches with higher elevation and more complexity, helping to hold back the ocean while simultaneously preserving recreation for people and creating refuge for wildlife.

IMPLEMENTING LIVING SHORELINES

TBF's Coastal Adaptation Program made exciting progress on **several living shoreline sites** in 2023. Earlier in the year, **winter storms brought more than 25 inches (63.5 cm) of rainfall,** occasionally coupled with large waves during high tides. This resulted in beach erosion in some places while promoting spring vegetation in others. It was beautiful to witness the **growth of California native plants** and the magnificent flowering season that rippled into late summer. As the rains gave way to summer, the team focused on **recovery and re-establishment of restoration areas**. This predominantly included **monitoring and weeding of non-native vegetation, hosting monthly volunteer events**, and more (see below for 2023's site-specific recaps). We encourage you to **visit the sites in person and join us at an upcoming volunteer restoration event**!

- Malibu
  - TBF and partners restored **approximately 3 acres of sandy beach and dune habitat** at Zuma, Westward and Pt Dume Beaches to **improve coastal resiliency and increase beach health. Adaptive management continued** in 2023. TBF's Coastal Adaptation Program maintained and cleaned up trash and debris within the site, hosted volunteer restoration events, and led interns on monitoring. The California native plants began to bloom in the area!

- Santa Monica
  - TBF **continued to carry out adaptive management, maintenance, and outreach on the 2021-established 3-acre restoration** site. The history of the project, a site tour, and monitoring results were presented and shared with the Beach Ecology Coalition online and with resident and municipal stakeholders at the Annenberg Beach House.
  - Separately, TBF made great strides in advancing its beach restoration footprint in Santa Monica. In partnership with the City of Santa Monica, California State Parks, Audubon Society, and public stakeholders, **TBF is on the cusp of installing the Santa Monica Dune Restoration Project, which we have been planning** for the last year. This project will install **approximately 5 acres of beach habitat** on Santa Monica Beach, including the area with an existing snowy plover enclosure.

IMPLEMENTING LIVING SHORELINES

- Los Angeles
  - TBF and partners implemented a **multi-habitat approach to restore nearly 4 acres of beach and coastal bluff habitat at Dockweiler State Beach**. The beach portion was initiated in January 2022, and in 2023, **monitoring and adaptive management continued**.

- Manhattan Beach
  - Approximately **3 acres of beach dune habitat, was restored in Manhattan Beach**. Project goals include beautifying the dunes along the bike path, increasing shoreline resilience, implementing nature-based protection measures against sea level rise and coastal storms, and increasing community engagement through enhanced beach experiences, outreach, and education. In 2023, **adaptive management and maintenance of the area continued** with TBF staff, student interns, and volunteer events. The design for permanent signage is in the final stages, with installation expected later in 2024.

ENVIRONMENTAL ENGAGEMENT

TBF's Environmental Engagement Program initiates projects that foster the transformation of perceptions, attitudes, and behaviors into concrete, pro-environmental action. It uses an integrative approach that involves social science, education, leadership building, and creative, empowered communications.

ADVOCATING FOR CLEAN BOATING

With 4 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. In 2023, TBF's Environmental Engagement Program continued working with Southern California **coastal boating communities to prevent pollution and increase environmental stewardship**.

TBF partnered with California State Parks and California Coastal Commission's Dockwalker Program to co-train **over 100 individuals to become environmental educators known as Dockwalkers**. TBF collaborated with Southern California Dockwalkers and distributed **over 2,800 pollution prevention toolkits**, California Boater Kits, to recreational boaters. TBF carried out a **community-based social marketing pilot in Marina del Rey** to influence proper sewage disposal, **monitored over 70 sewage disposal facilities** from San Diego to Santa Barbara, co-produced focus groups to gather insight on the Pumpout Nav app, **produced educational materials** such as 2024 Southern California Tide Calendars in English and Spanish, generated multiple reports including 2023 California Clean Vessel Act Pumpout and Dump Station Performance Report, and co-produced The Changing Tide newsletter. In parallel with the monitoring and engagement projects above, TBF continued to **raise awareness at presentations and local events.**

ADVOCATING FOR COMMUNITY COMPOSTING & GARDENING

Table to Farm, initiated in 2016, is a partnership between TBF, Environmental Charter Schools (ECS), and the community that collaborates to **reduce greenhouse gas emissions by recycling organic food waste and growing local fresh food**. Decomposing food in a landfill releases methane, a greenhouse gas 86 times more potent than carbon dioxide. By composting locally, we reduce transportation associated with hauling waste to faraway processing facilities, which lowers smog-forming air pollutants and carbon dioxide emissions. Simultaneously, applying **compost builds healthy soils, increases water retention, and enhances soil carbon sequestration.**

2023 efforts focused on revitalizing Table to Farm by updating campus compost systems and engaging ECS communities in the community composting initiative. Together with ECS, we:

- Rebuilt Environmental Charter Middle School-Inglewood's (ECMS-I's) compost system
- Updated Environmental Charter High School-Lawndale 's (ECHS-L's) compost system
- Established a new compost system at Environmental Charter High School-Gardena (ECHS-G)
- Planted 8 fruit trees alongside ECMS-I's parkway community garden
- Attended 4 outreach events to connect with community members on the initiative and distributed hundreds of food scrap collection caddies
- Co-produced 3 community workshops focusing on composting, at-home gardening, and environmental entrepreneurship.

Alongside Table to Farm's community composting efforts, TBF's Environmental Engagement Program supported ECMS-I by updating their **greenhouse with solar PV fans.** This greenhouse **grows seedlings for transplanting into ECMS-I's community garden and distributing them to the public**.

REDUCING SINGLE-USE DISPOSABLES

Over 300 million tons of plastics are produced every year globally and less than 9% is recycled. **By 2050, plastic is expected to outweigh all fish in the oceans**. Much of this marine debris is a result of disposable plastic products, specifically single-use **disposable food and beverage packaging** that have a short life span and are quick to be thrown "away." Plastic pollution implications are vast and harmful spanning its extraction through disposal. The most effective measure that reverses this and **ultimately prevents ocean-bound plastic is to reduce it at the source and to stop using single-use disposable plastics.**

In 2023, the **City of Los Angeles Los Angeles Sanitation & Environment (LASAN) launched its Reusable Foodware Microgrant Program** to help advance single-use plastic reduction and to assist food service establishments with their transition to reusable foodware and foodware accessories. **TBF is proud to have supported the program with implementation and technical assistance** alongside Clean Water Action's ReThink Disposable and APTIM. In spring 2023, **over 600 restaurants were engaged across South LA, Wilmington, Pacoima, and Boyle Heights**. By December 2023, **over 140 restaurants applied for the program and over 50 participating restaurants received conversion technical assistance.**

REDUCING SINGLE-USE DISPOSABLES

TBF continued to **participate in the Reusable LA coalition, a strong network of partners working to resolve LA's plastic pollution** issue by championing a reusable culture through legislative advocacy, outreach, and engagement. Reusable LA's 2023 efforts centered on producing the "**Hold the Plastic Please**" outreach campaign **to inform food service businesses and consumers on active legislation.**

Furthermore, TBF **partnered with 5 Gyres' Plastic-Free Parks campaign by supporting the call for community science volunteers to document plastic pollution in U.S. National Parks**. More than 8,117 pieces of trash were submitted from 30 sites around the country, from Big Bend National Park to Santa Monica Mountains National Recreation Area to Assateague Island National Seashore. Learn more in the **Plastic-Free Parks TrashBlitz 2023 Report**. The collective goal is to work toward solutions that shift away from the **sale and distribution of single-use plastics in national parks, and advance reuse and refill systems.**

COASTAL RESEARCH INSTITUTE

TBF and Loyola Marymount University's (LMU) Coastal Research Institute engages LMU faculty, and undergraduate and graduate students in multidisciplinary, hands-on approaches to research related to coastal resource management in Los Angeles. Research focuses on environmental and social challenges affecting Santa Monica Bay and its watersheds and contributes to furthering policies and actions that improve the health of the Bay and watershed.

ADVANCING RESEARCH VIA CRI

LMU and TBF's Coastal Research Institute (CRI), **sponsored twelve undergraduate research internships in summer 2023**. Students worked with faculty advisors from TBF and LMU studying such **topics as coastal phytoplankton population characterization, seabird nesting, intertidal invertebrate physiology, coastal dune invertebrate communities, and geospatial analysis of existing coastal dune restoration projects.**

At the end of the six-week program, students reported on their work in a **university-wide poster session.** Several students continued working on their CRI projects for their senior capstone research, which is part of their graduation requirements at LMU.

WHO WE ARE

Board of Directors

TBF's Board of Directors oversees progress focusing on the organization's fiscal health, capacity, and operational stature.

Staff

TBF's staff are science and communication experts passionate about understanding and protecting the Bay and its watershed.

STAY CONNECTED

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