



Contact: Julie Du Brow, Communications
jdubrow@santamonica.org, 310-922-1301

First Year of Kelp Forest Restoration Off SoCal Coast Shows Successful Return of Kelp & Marine Life

Commercial Fisherman, Public Aquaria & Non-Profits Are Encouraged by Results from Collaboration

(Los Angeles, CA – November 19, 2014) The Bay Foundation has published the results for the first year of a multi-year effort to restore giant kelp forests along the Palos Verdes Peninsula, showing a significant return of kelp, other algae, and fish. The partnership of fishermen, environmental groups, researchers and public aquaria—led by [The Bay Foundation](#) (TBF)—launched [the project](#) in July 2013, with scientifically-trained divers culling overpopulous urchins down to their optimal number, returning kelp forests across the first 12 of an estimated 150 acres that have become “urchin barrens”.

The PV Peninsula, recognized as one of the most important kelp forest regions on the West Coast of the U.S., experienced a 76% decline in the forests over the past 100 years, impacting the stability and sustainability of the iconic giant kelp ecosystem and its associated economies. The formerly healthy kelp forests, often referred to as the ‘tropical rainforests of the sea’, supported hundreds of species of fish, invertebrates and other algae and were popular fishing spots, especially for those who supply urchins to Japan and many local restaurants for what sushi enthusiasts know as “uni.” When kelp forests are decimated by too many urchins, “urchin barrens” are established.

“Once established, urchin barrens can remain in place for decades as has been the case off of Palos Verdes,” states Tom Ford, project leader and TBF’s Executive Director. “These barrens, true to their name, consist of rocks and urchins covering the sea floor, crowding out most other life.”

To restore the giant kelp forests, the ecologists, fishermen, and community volunteers use SCUBA gear to reach the ocean floor and selectively reduce the density of purple sea urchins by crushing the undernourished, tiny and often diseased urchins until there are two per square meter within the pre-marked and pre-monitored boundaries of the sea urchin barrens.

[Project](#) partners include: California Sea Urchin Harvesters, Vantuna Research Group, National Oceanic and Atmospheric Administration (NOAA), Department of Fish and Wildlife (DFW), Southern California Marine Institute, Los Angeles Waterkeeper, California Science Center, and TBF.

The data sets and maps found in the [first-year report](#) and [appendix](#) describe the progress of this effort from July 1, 2013 through June 30, 2014. The information describes the rapid response to the restoration actions and illustrates the recovery of key processes and species as a result of the year’s efforts. Progress to date:



- 12.6 acres of restored kelp forest across two coves, Underwater Arch and Honeymoon Coves
- 1.99 million purple sea urchins culled within restoration sites, resulting in:
 - 37.52 purple urchins per sq. meter on average before restoration
 - 1.88 purple urchins per sq. meter on average after restoration
- 35 volunteer divers (trained)
- 5 commercial fishermen (trained)
- Giant kelp have naturally recruited, with 100s now at or near the water's surface
- In some locales, giant kelp have reached lengths exceeding 25 feet in length
- Fish species richness doubled in the restoration sites

Several key metrics show increases in response to kelp forest restoration. One is gonadosomatic indexes for red and purple sea urchins, which measures the size, weight and how much of that weight by percentage is comprised of gonad, which is what becomes "uni". Two others are fish species richness, and biomass as indicated by two fish species, kelp bass and sheephead. These trends are key indicators that describe strong, and in some cases significant, increases in value in response to kelp restoration actions.

"To attract the fisherman as partners in this project we needed to show them this project was worth it to them and that we were interested in their livelihoods," notes Ford. "The first thing we did was [publish the results of our research](#) that modelled the benefit to the sea urchin fishery. This model described an increase to the fishery of 883% for every barren we convert to kelp forest. The very interesting part is that we are realizing much of that return within this first year of work, it's very encouraging."

Adds Jonathan P. Williams, Research Scientist & Adjunct Instructor, VRG-Occidental College, "The changes to the ecosystem from the restoration efforts have been very direct. The kelp has returned and we're seeing the occasional green abalone settle into the depressions on the reef. Currently there are a lot of herbivores grazing on the new turf algae. But as the restored reef is quickly maturing, more predators are showing up, like Kelp Bass, Garibaldi, California Sheephead, California Spiny Lobster, and Two-Spot Octopus."

The multi-year, multi-site project along the PV Peninsula will be completed within four years and monitoring is ongoing for the life of the project and for five years thereafter. Once a kelp forest is restored, it can persist for many years with little or no maintenance.

The project is already beginning to serve as a model for coastal cities with similar issues—including development, pollution, over-fishing, sedimentation, and a changing ocean climate—both in the U.S. and internationally.

The Montrose Settlements Restoration Program (MSRP), consisting of six federal and state agencies with the National Oceanic & Atmospheric Administration as the lead agency, is providing funding for this project as part of its plan to restore fish habitat in southern California. MSRP was developed in 2001 following a case settlement against polluters that released DDTs and PCBs into the southern California marine environment. MSRP has allocated settlement funds to restore natural resources that were harmed by these chemicals including impacts to fish habitat due to their presence in ocean sediments (<http://www.montroserestoration.noaa.gov/>).



For more information on the project, please visit the [Project Page](#).

About The Bay Foundation (TBF)

The Bay Foundation, also known as the Santa Monica Bay Restoration Foundation, is a 501(c) 3 non-profit environmental group founded in 1990 to restore and enhance the Santa Monica Bay (from the LA-Ventura county line to the Palos Verdes Peninsula) and local coastal waters. The Foundation is the non-profit partner of the Santa Monica Bay Restoration Commission, raising and expending funds for research, education, planning, cleanup efforts and other priorities identified in the Commission's *Santa Monica Bay Restoration Plan*. As advocates for the Bay, TBF works collaboratively with a broad group of stakeholders, including government agencies, industry, environmental groups, and scientists, to implement innovative policies and projects that clean up the waterways, create green spaces and natural habitats in the Los Angeles region. TBF conducts research and mentors student intern and volunteers through its Center for Santa Monica Bay Studies at Loyola Marymount University. (www.santamonica.org)

###