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Restoring Living Shorelines: First of its Kind Pilot Project to Restore Oyster and Eelgrass Beds in San Francisco Bay

SAN FRANCISCO, CA, JULY 19, 2012 - Today the State Coastal Conservancy along with state, federal, and non-profit partners started construction of native oyster and eelgrass beds in San Francisco Bay. This innovative restoration and climate change adaptation project in San Francisco Bay builds on 50 year regional goals for the restoration and protection of the hidden, underwater part of our majestic estuary.

Working with the landowners The Nature Conservancy, a conservation group that owns several submerged parcels in San Francisco Bay, and the State Wildlife Conservation Board, the project marks the first time that restoration of oyster and eelgrass beds is occurring at this large of a scale in the Bay. The results will provide critical information about the benefits of using natural reefs along the shoreline to protect habitat in the face of sea level rise and climate change.

The pilot project will be conducted in two locations: submerged sites in San Rafael Bay and along the Hayward shoreline. Through frequent monitoring, information will be generated about how the project can be scaled up to balance shoreline protection, environmental impacts, and habitat needs. The overarching objectives: to learn about the best techniques to restore critical eelgrass and oyster habitat, while gathering data about the potential physical benefits of biological reefs along the shoreline. An interdisciplinary team of scientists will test the effectiveness of restoration techniques on bay habitat values, and begin to evaluate connectivity between submerged areas and adjacent shorelines. This type of work is new to San Francisco Bay but will build on the lessons learned from other restoration efforts in the estuary and around the nation, especially along the Atlantic seaboard and Gulf of Mexico.

“This is one of the first in the water actions to protect critical native oyster and eelgrass habitat on the bottom of the bay,” says Sam Schuchat, executive officer of the State Coastal Conservancy. “The Living Shorelines Project is a direct result of the Subtidal Habitat Goals Report (see www.sfbaysubtidal.org), which is a bold 50 year plan for the underwater habitats in the Bay.”

San Francisco Bay is one of the largest estuaries on the West Coast and one of the most important both for the habitat it provides for fish and wildlife and for the many benefits and opportunities it offers people. Its natural beauty gives the Bay Area the iconic

identity for which it is known throughout the world, while its waters ensure an enviable climate and quality of life for more than 7.5 million residents. Residents commute across the Bay on ferries, or enjoy it while boating, fishing, swimming, windsurfing, and birding in and around its waters. The bay is a busy center of commerce: cargo ships and tankers from around the Pacific Rim depend on its ports and infrastructure, and cities around the bay are currently planning for how to deal with sea level rise and climate change. Although the hidden underbelly of the bay is often thought of as a featureless mud bottom, its unique habitats provide diverse three-dimensional structures, and many shellfish, fish, marine mammals, diving ducks, and other wildlife feed, rest, hide, and reproduce in oyster and eelgrass beds.

“The Nature Conservancy is truly excited about this collaborative pilot oyster restoration and climate change adaptation project on our San Rafael property, and we will use the results to help guide other subtidal habitat restoration efforts in the future for the benefit of both people and nature,” says Sarah Newkirk, Coastal Project Director of The Nature Conservancy’s Monterey Field Office. “This project is a great example of the value of collaborative interagency partnerships. One entity alone could not have completed this ambitious project, it took both state and non-profit lead partners to make this innovative pilot project a reality,” says John Donnelly, Director of the State Wildlife Conservation Board.

“Recognizing that San Francisco Bay area residents desire vibrant coastal communities, healthy and resilient marine ecosystems, and clean and safe shorelines, the Living Shorelines Project will play a vital role in restoring the key habitats that support this valuable resource,” says Korie Schaeffer, Northern California Habitat Coordinator with the NOAA Fisheries Habitat Conservation Division.

“We are thrilled to partner on oyster and eelgrass restoration that helps to restore critical habitat for fish and wildlife”, says Judy Kelly of the San Francisco Estuary Partnership.

This project is being managed by the State Coastal Conservancy, in collaboration with funding partners including the Environmental Protection Agency, San Francisco Estuary Partnership, Wildlife Conservation Board, and NOAA Fisheries. Construction is led the California Wildlife Foundation and Dixon Marine Services, Pacific oyster shell is provided by Drakes Bay Oyster Company, and consultants leading the project include San Francisco State University, UC Davis, USGS Western Ecological Research Center, ESA PWA, ENVIRON, and Isla Arena Consulting. Visit www.scc.ca.gov for more information.

Background Information on Living Shorelines

What is a Living Shoreline?

Living Shoreline projects use a suite of bank stabilization and habitat restoration techniques to reinforce the shoreline, minimize coastal erosion, and maintain coastal processes while protecting, restoring, enhancing, and creating natural habitat for fish and

aquatic plants and wildlife. The term “Living Shorelines” was coined because the approach provides living space for plants and animals in the bay. Strategic placement of native plants, natural materials, and reinforcing shell for native shellfish settlement enhance habitat values by creating new living space. The techniques also provide a measure of shoreline protection. The approach has been tried primarily on the East and Gulf Coasts, such as in the Chesapeake Bay and along the Alabama-Mississippi coastline.

Native Eelgrass Beds

Eelgrass is an underwater flowering plant that supports diverse communities of bay species shrimp and Dungeness crab, fishes, and birds. Eelgrass is the most widely distributed seagrass in the Northern Hemisphere and occurs along the Pacific Coast of North America from the Bering Strait to lower Baja California. An estimated 3,400 km² of seagrass have been lost globally between 1879 and 2006, largely due to human activities. The impact to wildlife habitat and fisheries has generated interest in slowing or reversing this trend.

Native Olympia Oysters

Native oysters form beds that increase living space for many other species, promoting increased diversity and providing food for fishes like salmon and steelhead. Historically, native Olympia oysters were an abundant and ecologically important part of the fauna and fishery in West Coast estuaries. The popularity of the fishery that began in the 1850s and other habitat impacts resulted in the collapse of native oyster populations along the West Coast of the U.S. during the late 19th and early 20th centuries. The fishery was lost as were the key ecosystem services provided by native oysters.

Living Shorelines and Climate Change Adaptation

The California Climate Change Adaptation Strategy recommends the use of Living Shorelines as a potential adaptation method to reduce the need for engineered hard shoreline protection devices like seawalls, and to provide habitat functions and values. The State Coastal Conservancy’s Climate Change Policy also recommends Living Shorelines to reduce erosion and trap sediment, allowing for buffering of tidal wetlands and migration of habitats. Both policies have a goal of improved estuarine habitat resiliency in the future to cope with sea level rise and other environmental changes related to climate change.