

SAN FRANCISCO BAY JOINT VENTURE PROJECT INFORMATION SHEET

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OR 415-699-3586 FOR ASSISTANCE.

Project Name: (Project name should be geographic and descriptive.)

New Life for Eroding Shorelines: Designing natural shoreline edges with coarse grained beach treatments and plant enhancements for high tide refuge.

Location: Map attached.

This project is located in Marin county. The team will prepare two conceptual designs (at Corte Madera Ecological Reserve and Blackie's Pasture) for coarse sediment addition that will help to repair eroded shorelines and interact with vegetation to maintain them.

Project Description: General description

The New Life for Eroding Shorelines project focuses on building natural shoreline systems and internal marsh features that emulate and reinforce the processes that can sustain high marsh habitats during accelerated sea level rise and tidal marsh retreat. This Project will test new nature-based methods for establishing resilient and sustainable high marsh vegetation structure, and beachface nourishment along wave-eroded marsh edges to slow erosion and trigger natural high marsh building processes at Corte Madera Ecological Reserve and Blackie's Pasture. The project will be the first to use reintroduction of a native endangered salt marsh plant as a tool to enhance habitat for endangered salt marsh wildlife species, California sea-blite (*Suaeda californica*), as well as a tool for recovery of the endangered plant itself. Objectives of this project are multifaceted and intend to 1) increase understanding of the rates and processes of shoreline retreat in Marin County and synthesize lessons learned from other adaptation projects addressing eroding shorelines, 2) provide conceptual designs for two innovative nature-based pilot projects addressing eroding shorelines in Marin, as examples for application elsewhere in SF Bay, 3) develop and test "arboring" as a restoration tool for increasing high tide refuge along marsh berms and channels, 4) monitor the feedback between high salt marsh vegetation and wave-deposited coarse sediment above marsh scarps, 5) contribute to the recovery of CA sea-blite by range expansion and re-introduction of this federally-listed endangered plant, and 6) increase local and regional awareness of sea-level rise adaptation through engagement of underserved Marin County youth.

These methods are based on nearly extinct historical Marin salt marsh features:

1) connections to streams that delivered riparian woody debris to salt marshes and 2) gravel and sand beaches fringing the bay edges of many salt marshes. Implementing vegetation enhancements along chronic marsh erosion scarps and channels will enable the team to prepare two conceptual designs (at Corte Madera Ecological Reserve and Blackie's Pasture) for coarse sediment addition that will help to repair eroded shorelines and interact with vegetation to maintain them.

Last updated 8/28/2017

The Project will:

- Directly manipulate high elevation salt marsh vegetation canopy structure, exploiting the interaction of added woody debris “arbors” and natural climbing growth habits of both common (pickleweed) and endangered (CA sea-blite) salt marsh shrubs, and
- Develop designs for coarse mixed beach sediment nourishment of erosional bay shorelines (marsh erosion scarps and marsh-fringing beaches with added bay gravel and sand) (e.g., Fig. 5), to support “self-constructing” natural processes that slow marsh retreat and trigger growth of high marsh berms and growth of vegetation providing high tide refuge habitat.

Total Project Area Acreage: Two acres (estimate)

Project start date: (MM/YYYY): Funding from the Coastal Conservancy is permitting some activities to begin 10/1/1017, but need additional funding for design and implementation of the full project

Activities included in this project: Restoration or Enhancements: Planting and arboring of CA sea-blite and arboring of pickleweed, design and placement of coarse material along eroding shorelines. Up to 2 acres of enhancement total..

Is this project part of a Living Shorelines project? y/n: Yes. We are using natural materials to create habitat while protecting shorelines.

Lead Agency/Contact Person: (name, affiliation, mailing address, email address, phone/fax number)

SFSU Romberg Tiburon Center / Katharyn Boyer, katboyer@sfsu.edu, (415) 338-3751

List all partners involved in the project and their roles: (funder, cooperator, lead, etc. – one partner can have multiple roles)

Roger Leventhal – Partner

Peter Baye - Partner

Audubon California/John Takekawa - Partner

San Francisco Estuary Institute/Julie Beagle - Partner

Project Status: (please see the attached sheet titled Prioritization Criteria linked here: <http://www.sfbayjv.org/pdf/SFBJV%20project%20adoption%20and%20prioritization%20criteria.pdf> and describe the level of “readiness” of the project)

Requesting adoption as SFBJV project

Funding status – received/needed: Received: 200K. Need up to several million for implementation and monitoring of the full project.

Last updated 8/28/2017



Figure 1. Locations of the two proposed project locations along the Marin County Shoreline, Corte Madera Ecological Reserve in Corte Madera and Blackie's Pasture beach in the Town of Tiburon.