

COASTAL CONSERVANCY  
Staff Recommendation  
May 26, 2016

**SALINAS RIVER STATE BEACH DUNE RESTORATION**

Project No. 14-053-11  
Project Manager: Rachel Couch

**RECOMMENDED ACTION:** Authorization to disburse up to \$314,905 to Coastal Conservation and Research, Inc., to improve dune capacity to adapt to sea level rise at Salinas River State Beach, Moss Landing, Monterey County.

**LOCATION:** Moss Landing, Monterey County

**PROGRAM CATEGORY:** Climate Change

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**EXHIBITS**

Exhibit 1: [Project Location and Site Map](#)

Exhibit 2: [Figures and Photos](#)

Exhibit 3: [Project Letters](#)

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**RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Section 31113 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes disbursement of up to three hundred fourteen thousand nine hundred and five dollars (\$314,905) to Coastal Conservation and Research, Inc. (“CCR”), to improve dune capacity to adapt to sea level rise at Salinas River State Beach, Moss Landing, Monterey County, through habitat restoration, public coastal access enhancement, and education and outreach to the local community, subject to the following conditions:

1. Prior to the disbursement of funds, CCR shall submit for review and approval of the Conservancy’s Executive Officer:
  - a. A work program, budget, schedule, and list of contractors to be retained by the project.
  - b. Evidence that all necessary permits and approvals have been obtained.
  - c. A signing plan for the project acknowledging Conservancy funding.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapter 3 of Division 21 of the Public Resources Code (Section 31113), regarding the impacts and potential impacts of climate change on resources within the Conservancy’s jurisdiction.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.
3. Coastal Conservation and Research, Inc. is a nonprofit organization existing under section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code. ”

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**PROJECT SUMMARY:**

Staff recommends that the Conservancy provide a grant of up to \$314,905 to Coastal Conservation and Research, Inc. (“CCR”) to restore portions of the coastal dune ecosystem located at Salinas River State Beach (“SRSB”) in Moss Landing, Monterey County (Exhibit 1). The project will improve the capacity to adapt to sea level rise and to increased storm intensity of 22 acres of vulnerable sections of coastal dunes at SRSB through removal of exotic species and planting of native species. As part of the project, public coastal access within the park will be enhanced through improved trail fencing and interpretive signage, and the local community will be involved in a hands-on restoration education, and outreach component to communicate project objectives and benefits. The project also includes a monitoring plan for the restored coastal dunes.

The coastal dune ecosystem within and around Salinas River State Beach provides a natural ocean barrier protection from winter storms to thousands of acres of low-lying agricultural land and wetlands. Recent sea level rise hazard maps, created by the Conservancy and its consultant, ESA PWA (2014) for the Monterey Bay Coast, identify sections of the Salinas River State Beach and adjacent dune systems as being highly vulnerable to climate change-induced dune and beach erosion and storm-induced flooding. A study conducted by the Center for Ocean Solutions (COS) in 2012 also shows this region to be at high risk to sea level rise. Small breaches in the most vulnerable sections of the SRSB dunes could allow ocean flooding of large areas of the lower Salinas Valley. The project would reduce the vulnerability of two breach points in the dune complex by improving the natural adaptive capacity of these coastal dunes (Exhibit 2, Figures 3-5).

Sand dunes, in their natural state, dissipate wave run-up, reduce erosion, and minimize significant dune face collapse, while also providing critical habitat to many special status species. However, several critical areas of foredune at SRSB are covered in non-native invasive species, primarily iceplant, and are highly vulnerable to erosion from winter storms as well as wayward foot traffic. Ice plant creates a virtual monoculture within local dune systems which overly stabilizes the sand. Over-stabilization makes dunes more susceptible to loss from erosion by preventing natural movement or migration in response to changes in erosional patterns and sea level rise. Removal of exotic species and reestablishment of native species will enable the

dunes to better respond to wave impacts, increasing their resilience to more frequent and more damaging storms and to sea level rise, while also helping to restore a unique and sensitive habitat. Current projects at Moss Landing State Beach (located to the North of SRSB) and the Monterey Dunes Colony (located adjacent to SRSB) are also working to re-establish native dune habitat and increase the level of protection provided by the dunes. The proposed project at SRSB will connect these other efforts.

The Central Coast Wetlands Group (CCWG) and CCR will work in partnership with the California Department of Parks and Recreation (DPR) to eradicate iceplant from approximately 22 acres of sensitive dune, primarily through the use of spot spraying of herbicide. Hand pulling of iceplant will be used in areas where special status plant species are present. Sprayed iceplant will be left in place to act as mulch for native plants, and will be left to decompose for several months before native plants are planted within it. Approximately 20,000 native plants will be propagated throughout the project period and planted during the 2016/2017 and 2017/2018 planting seasons. Additionally, seeds will be hand broadcast and lightly raked in to dune areas with bare sand. To help conserve the use of water during the restoration project, planting and seeding will occur right before and during the rainy season.

Efforts to increase the structural integrity of the dunes will include strategic placement of plants and the use of drift wood or jute fencing to help build dunes. Several trail upgrades will be made that include updating or replacing fencing to help better delineate access ways and reduce wayward foot traffic through sensitive dune habitat. Interpretive signs will be installed at two main access locations and along main dune trails to provide education about sea level rise, dune erosion, habitat restoration, and endangered species. Finally, a robust hands-on community outreach component will directly involve neighbors of the dunes and local elementary students from Castroville Elementary School in the project through community planting days, raising project plants in the school greenhouse, and communication of project objectives and benefits.

Vegetation surveys will be conducted throughout the project period. These surveys will document reestablishment of native species, eradication of invasive plants and identify areas where greater species diversity is needed. Additional surveys will occur at Moss Landing State Beach where a restoration project is already in place to help compare restoration success. Dune profile surveys will be conducted using LiDAR before, during, and after project implementation to document topographic profiles and dune elevation changes expected within naturally evolving dune complexes.

CCR will act as the fiscal agent for receiving and administering grant funding for CCWG. CCR is a community non-profit whose staff has been involved in dune restoration for more than two decades, including the construction of a new physical sand dune at the former site of Moss Landing Marine Labs and the restoration of the marine lab hill dune complex from salt marsh through dune to back dune forest. CCWG, which worked with DPR to develop this project, will lead the project in partnership with DPR and CCR. DPR will assist in its implementation and be responsible for long-term management of the site. Previous CCR and CCWG dune restoration work included management for special status plant species (spine flower, gilia, and salt clover) and the recovery of legless lizards (special status). Similar to the current SRSB dunes, these previous areas were covered with non-native species, primarily ice plant.

**Site Description:** SRSB comprises approximately 280 acres of beach and coastal dunes located in Northern Monterey County, California (Exhibit 1). SRSB is bordered by the Pacific Ocean to

the west and the old Salinas River channel and agricultural fields to the east. SRSB extends northward to Sandholdt Road in Moss Landing and southward to the Salinas River mouth. The Monterey Dunes colony is a residential in-holding within the southern portion of SRSB. The most prominent feature of the state beach is the extensive sand dune system, which extends inland in some places for over 1000 feet and is 50-60 feet above sea level at the highest point.

The five kilometer sand dune complex spanning the central Monterey Bay from the Moss Landing harbor mouth southward to the Salinas River Mouth is part of an ancient dune system that formed during the most recent ice age. Dunes within the central Monterey Bay are formed through the complex interactions of sand moving down coast to the mouth of the Monterey Bay Submarine Canyon at Moss Landing combined with local deposition of fresh sands from the Salinas River immediately south of the canyon. Strong seasonal winds and changing wave patterns drive beach sands inland forming an extensive dune complex.

The SRSB was extensively disturbed starting before the 1900's. Sand mining, industrial development, summer beach houses, and many years of extensive off road vehicle use removed native plants and allowed ice plant to become a dominant invasive that will continue to cover large regions of the dunes without restoration efforts.

SRSB contains two subunits classified as Natural Preserves: the Salinas River Dunes Natural Preserve and the Salinas River Mouth Natural Preserve. These areas contain rare coastal dune and coastal marsh habitat which provide habitat for many species of wildlife and migratory birds. Several special status plants and plant communities found at SRSB include Menzies' wallflower, Monterey gilia, Monterey spineflower, and sand-loving wallflower, as well as central dune scrub and northern coastal salt marsh communities. Special status animals present include globose dune beetle, California legless lizard, tidewater goby, longfin smelt, bank swallow, western snowy plover, and short-eared owl.

The qualities that make SRSB a haven for wildlife and a hotspot for rare plant communities also attract visitors who seek open space, solitude and a natural landscape relatively untouched by development. Beach combing, bird watching, photography, jogging, horseback riding and surfing are popular recreational uses of the state beach, but it is not uncommon for visitors to have the beach or the dunes to themselves, especially in winter.

With only three entry points (Sandholdt, Potrero and Molera Roads) for this 3.6 mile long area of the state beach, much of the use occurs near these locations. Wherever they enter, most visitors have the beach as their destination. Between Sandholdt and Potrero Roads, visitors can follow a trail that runs behind the dunes along the Old Salinas River channel. In the dunes around and between the two northern access points, many volunteer trails run from the ridge trail through the dunes to the beach. The ridge trail spans the northern half of the state park and terminates at the Molera Road access point. Equestrians are directed to ride on the horse trail or on the beach on the wet sand to protect sensitive plant and animal species. Due to the dynamic nature of the shore environment and public access, conditions along the beach and dunes are constantly changing and some areas are degraded.

**Project History:** This project builds upon regional collaborative efforts to assess the vulnerability of Monterey Bay coastline to future climate change impacts and evaluate adaptation response options. The Monterey Bay Sea Level Rise Vulnerability Assessment, funded by the Conservancy, developed refined sea level rise impact hazard projections for the Monterey Bay

coastline and is being used to evaluate the vulnerability of critical infrastructure and other assets to inform actions and policy options that address SLR impacts and conduct an economic analysis of feasible, stakeholder-selected sea level rise adaptation strategies. As part of this effort, stakeholders who identified realistic and appropriate adaptation strategies to be modeled and analyzed for the region, determined that only soft adaptation strategies such as restoration, would be feasible for areas managed by DPR due to the strict regulations of these sensitive areas.

Conservancy staff learned of the proposal during a meeting with CCWG staff in 2013. A project proposal was then received during the first round of Climate Ready grant applications, but was not recommended for funding; the project was revised and recommended for funding as part of the second Climate Ready round. Staff requested and received partial funding for the project to complete environmental compliance, which is now complete. The proposed authorization comprises the implementation phase of the project.

**PROJECT FINANCING**

<b>Coastal Conservancy</b>	\$314,905
Others	In kind contributions
<b>Project Total</b>	<b>\$314,905</b>

The anticipated source of Conservancy funds for this project is an appropriation from the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006, Public Resources Code section 75001 *et seq.* (“Proposition 84”). Proposition 84 authorizes the Conservancy’s use of these funds for the purposes of enhancement of coastal resources through projects undertaken pursuant to the Conservancy’s enabling legislation (Public Resources Code sections 31000 *et seq.*). Section 75060(e) allocates funding specifically for the protection of Monterey Bay and its watersheds, which includes the SRSB dunes. Consistency of the project with the Conservancy’s statutory mission is discussed below in “Consistency with Conservancy’s Enabling Legislation.”

Total in-kind services or expected contributions for the project are \$92,460. DPR will be contributing in-kind services in the amount of approximately \$34,660. This includes its staff time, state parks volunteer time, use of the Asilomar greenhouse, and interpretive sign designs. The remaining expected in-kind services of \$57,800 includes high resolution topographic dune survey data collection, volunteer time from school and community planting days, the use of the Castroville Elementary School greenhouse, and meeting venues.

**CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:**

The proposed project will be undertaken pursuant to Section 31113 of Chapter 3 of Division 21 of the Public Resources Code (sections 31000 *et seq.*), regarding the impacts and potential impacts of climate change on resources within the Conservancy’s jurisdiction. Section 31113(a) authorizes the Conservancy to undertake projects that address the impacts and potential impacts of climate change on resources within its jurisdiction, Pursuant to Section 31113(b), the Conservancy is authorized to award grants to nonprofit organizations and public agencies to

undertake projects that reduce greenhouse gas emissions, address extreme weather events, sea level rise, storm surge, beach and bluff erosion, salt water intrusion, flooding, and other coastal hazards that threaten coastal communities, infrastructure, and natural resources. Consistent with section 31113, the proposed authorization is to award a grant to CCR, a nonprofit organization, to reduce the potential for beach and bluff erosion and storm induced flooding of agricultural and resource lands as a result of sea level rise and other climate change related hazards at the SRSB.

**CONSISTENCY WITH CONSERVANCY'S 2013 STRATEGIC PLAN  
GOAL(S) & OBJECTIVE(S), AS REVISED JUNE 25, 2015:**

Consistent with **Goal 5, Objective B**, the proposed project will enhance coastal dune habitat.

Consistent with **Goal 7, Objective D**, the proposed project will implement adaptation projects that reduce hazards from sea level rise.

Consistent with **Goal 9, Objective A**, the proposed project will support programs and events that improve public understanding of coastal resources.

**CONSISTENCY WITH CONSERVANCY'S  
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, in the following respects:

**Required Criteria**

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Promotion and implementation of state plans and policies:** The proposed project helps promote and/or implement the following state plans and policies:
  - This project is consistent with the 2014 *Safeguarding California: Reducing Climate Risk, An update to the 2009 California Climate Adaptation Strategy*. The project seeks to understand and use demonstration sites to develop strategies to prepare for climate-driven impacts on dune habitats. It is consistent with the Ocean and Coastal Ecosystems and Resources section which seeks to improve management practices for coastal and ocean ecosystems and resources, increase capacity to withstand and recover from climate impacts, support pilot projects to demonstrate effectiveness of innovative shoreline management techniques, and support investment in cost-effective green infrastructure to reduce flood risk and storm water runoff and maximize associated co-benefits.

In the Biodiversity and Habitat section, which states that "an action needed to safeguard biodiversity and habitats should improve habitat connectivity and protect climate refugia." This project involves the restoration of dune habitat, increasing the resiliency of this habitat type while also protecting wetland habitats inland of the project site.

- This project is consistent with the *California @ 50 Million: The Environmental Goals and Policy Report* (2013 Draft) because it “increase[s] ecosystem services and biodiversity” and “increase[s] resilience of natural systems to recover from disruption.”
4. **Support of the public:** The project has the support of elected officials, community organizations, and government agencies, including State Senator Bill Monning, Assemblymember Mark Stone, and Monterey County Supervisor John Phillips, as well as California State Parks, Monterey Dunes Colony Association, Elkhorn Slough Foundation, Elkhorn Slough National Estuarine Research Reserve, Moss Landing Marine Laboratories, Monterey Bay National Marine Sanctuary, Center for Ocean Solutions and Natural Capital Project, the Nature Conservancy, Ag Land Trust, and adjacent farmers. See Exhibit 4: Project Letters.
  5. **Location:** The proposed project would be located within the coastal zone of Monterey County.
  6. **Need:** While CCR has obtained in-kind contributions from public agencies and partnering organizations. Conservancy assistance is needed at this point to enable the project to move forward since those organizations are unable to provide actual matching funds.
  7. **Greater-than-local interest:** The proposed restoration will enhance dune ecosystem adaptive capacity to benefit and protect inland agricultural and wetland areas from potential impacts of sea level rise and associated coastal hazards such as flooding. In addition, Monterey Bay’s dunes and wetlands are ecologically statewide important ecosystems in California as signified by their inclusion as state parks and within the Monterey Bay National Marine Sanctuary.
  8. **Sea level rise vulnerability:** One of the project’s primary goals is to provide resilience to sea level rise for SRSB and inland resources through enhancement of natural dune habitat which will facilitate dune growth. Monterey Bay dune systems have been included in recent studies that include coastal hazard and vulnerability assessments and ongoing monitoring of existing dune conditions predicted under various sea level rise scenarios. CCR and CCWG will monitor the restoration work and restored dune to gain a better understanding of the effectiveness of project techniques and overall approach.

### **Additional Criteria**

9. **Urgency:** Monterey Bay has the highest coastal erosion rates in the state. Sea level rise hazard maps, funded by the Conservancy, identify sections of the Salinas River State Beach and adjacent dune systems as being highly vulnerable to future climate change induced erosion and storm induced flooding. Action is needed immediately to help reduce these risks.
10. **Innovation:** Through enhancement of degraded coastal dunes that provide natural protective barriers to ocean waves, the project will demonstrate actions that can use natural processes to address future coastal conditions resulting from sea level rise.
11. **Readiness:** CCR and CCWG are ready to commence the proposed project in 2016.
12. **Realization of prior Conservancy goals:** See “Project History” section above.

13. **Cooperation:** The project involves cooperation between local non-profit organizations, public agencies, schools and a local homeowners' association.
14. **Minimization of greenhouse gas emissions:** CCWG developed the Monterey County Integrated Regional Water Management Program on-line GHG emissions tool that estimates the GHG emissions associated with grant funded project construction and maintenance (<http://www.greatermontereyirwmp.org/>). Using this tool, this project will have an insignificant contribution to GHG emissions because there are no large construction activities and the project will use best management practices identified in the tool. For example, the project uses carpooling to transport workers from a single central location to the work-site.

#### **COMPLIANCE WITH CEQA:**

The proposed project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to the following categorical exemptions from CEQA under the CEQA Guidelines, 14 Cal. Code of Regulations sections 15000 *et seq*:

- Section 15302 exempts the replacement of existing structures where the new structure will be located on the same site and will have the same purpose as the structure replaced. The proposed project will replace existing fencing and signs in the same areas of the project site;
- Section 15303(e) exempts the construction and location of limited numbers of new, small facilities or structures, like fences and signs. The proposed project will erect a limited amount of additional, new accessory (appurtenant) fencing and signage on the project site; and
- Section 15304 exempts minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees. The project's minor alterations to vegetation involve eradication of invasive iceplant primarily through hand-spraying of herbicides to minimize the possible impact of herbicides on nearby plants. However, the iceplant will be pulled by hand in some areas to ensure no special status species are impacted. The project's minor alterations to vegetation also include reseeding and replanting with native dune plants.

Upon approval, staff will file a Notice of Exemption for the proposed project.