

COASTAL CONSERVANCY

Staff Recommendation

May 29, 2014

**INVASIVE SPARTINA PROJECT**

99-054-01

Project Manager: Marilyn Latta

**RECOMMENDED ACTION:** Authorization to disburse up to \$1,820,000 in federal grant funds from the US Fish and Wildlife Service for the Invasive Spartina Project for two years of planning, mapping, implementation, and monitoring activities for revegetation and enhancement projects at multiple sites in the San Francisco Estuary.

**LOCATION:** The baylands and lower creek channels of the nine counties that bound the San Francisco Bay.

**PROGRAM CATEGORY:** San Francisco Bay Area Conservancy

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**EXHIBITS**

Exhibit 1: [February 14, 2013 Staff Recommendation](#)

Exhibit 2: [January 8, 2012 Invasive Spartina Project California Clapper Rail Habitat Enhancement, Restoration, and Monitoring Plan](#)

Exhibit 3: [Regional Map of 2014 and 2015 Revegetation and Enhancement Sites](#)

Exhibit 4: [Photos of Revegetation and Enhancement Islands](#)

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**RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Chapter 4.5 of Division 21 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of up to \$1,820,000 (one million eight hundred twenty thousand dollars), from two grants to the Conservancy by the US Fish and Wildlife Service, under the National Coastal Wetlands Conservation Grant Program and the North American Wetlands Conservation Act Grant Program (collectively, the “USFWS Grants”), for the San Francisco Bay Invasive Spartina Project (ISP) for two years of planning, mapping, implementation, and monitoring activities for revegetation and enhancement projects at 31 sites in the San Francisco Estuary. The USFWS Grants may be used for: 1) Conservancy grants to nonprofit organizations or public entities, to carry out implementation of the

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revegetation and enhancement projects and associated activities, whether a new grant or to augment existing ISP grants; and 2) Conservancy contracts for environmental or other services needed to plan, map, monitor and assist in the implementation of the revegetation and enhancement projects.

Any disbursement of funds for grants for implementation of revegetation and enhancement projects and associated activities shall be subject to the following conditions:

- a. If the grant is to a nonprofit organization, the grantee is a nonprofit organization existing under Section 501(c)(3) of the United States Internal Revenue Code, whose purposes are consistent with Division 21 of the California Public Resources Code.
- b. Prior to undertaking work on any one or more revegetation or enhancement projects and prior to disbursement of any funds to the grantee for that project, the grantee shall submit for review and approval of the Executive Officer a plan detailing the site-specific work, including a list of identified mitigation measures, a work program for revegetation planning, implementation, and monitoring activities, if applicable, including a schedule and budget, and evidence that the contractor and grantee has obtained all necessary permits and approvals for the project.
- c. In carrying out any revegetation or enhancement project, the grantee shall comply with all applicable mitigation and monitoring measures that are set forth in the approved site-specific plan, that are required by any permit, the amended ISP Biological Opinion or any other approval for the project, and that are identified in the “Final Programmatic Environmental Impact Statement/Environmental Impact Report, San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program” (FEIS/R), adopted by the Conservancy on September 25, 2003.

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. Disbursement of additional funds for ISP revegetation and enhancement projects remains consistent with Public Resources Code Sections 31160-31165 and with the resolutions, findings and discussion accompanying the Conservancy authorizations of September 25, 2003, March 10, 2005, June 16, 2005, March 8, 2007, May 24, 2007, April 24, 2008, April 2, 2009, June 4, 2009, March 17, 2011, September 22, 2011, August 2, 2012 and February 14, 2013 as detailed in the February 14, 2013 staff recommendation, attached as Exhibit 1 to the accompanying staff recommendation.
2. The proposed authorization remains consistent with the Project Selection Criteria and Guidelines last updated by the Conservancy on November 10, 2011.

## **PROJECT SUMMARY:**

The Conservancy has previously authorized funding for ongoing treatment and eradication of invasive *Spartina* and its hybrids within the San Francisco Bay Estuary, as well as native revegetation and enhancement projects, under the Conservancy's Invasive *Spartina* Project (ISP) Eradication Program. (See Exhibit 1). Since initiation of the ISP Eradication Program, it has been anticipated that certain revegetation activities would be needed as mitigation to offset habitat for native wildlife that would be lost as a result of the treatment activities. Indeed, revegetation was required as a mitigation measure for the ISP Control Program under the Conservancy-certified programmatic "Final Programmatic Environmental Impact Statement/Environmental Impact Report, San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program" (FEIS/R).

Simultaneous revegetation of native *Spartina foliosa* and high tide flood refugia plant zones was not feasible at the early stages of the project, as seedlings would have been at risk either of over-competition and hybridization with *Spartina alterniflora*, or of getting sprayed with herbicide during treatment. Now that eradication is almost complete at most sites, the conditions are appropriate to revegetate with native seedlings, without risk of over-competition, hybridization, or death from herbicide application.

The ISP Revegetation Program (Revegetation Program) Plan was finalized on January 7, 2012 (see Exhibit 2). The Revegetation Program has been developed with direct input from and oversight and approval of the endangered species staff of USFWS for revegetation of native *Spartina foliosa* and additional native marsh plant species, and other restoration enhancements, that provide high tide refugia for the endangered California clapper rail and other species living in the marshes in San Francisco Bay, and to otherwise restore native vegetation to the wetlands and streams that have been affected by treatment and eradication of invasive *Spartina*. This staff recommendation proposes acceptance and disbursement of \$1,820,000 of USFWS federal grant funding for two activities described under the Revegetation Program: 1) grants to existing and/or new grantees to carry out additional revegetation and enhancement activities at 31 sites (Revegetation and Enhancement Implementation Projects); and 2) environmental services to undertake technical planning and to prepare environmental documentation and monitoring plans for revegetation and enhancement work (Technical Planning). These activities are described in greater detail, as follows:

### **1. Revegetation and Enhancement Implementation Projects.**

On February 14, 2013 the Conservancy authorized funding for ongoing revegetation projects through March 2015. This authorization would provide additional funding towards ISP revegetation and enhancement projects at 31 sites through 2016. These projects will be implemented through new grants to nonprofit organizations or public entities or grant augmentations of existing Conservancy grants,. The projects involve seedling propagation, on-the-ground planting of native seedlings, revegetation monitoring and maintenance, high tide refuge islands construction, monitoring and maintenance. The activities will be focused on 31 sites in San Francisco Bay and will be implemented between July 2014 through June 2016. Total anticipated funding for these activities is estimated to be \$1,320,000.00.

## **2. Technical Planning.**

On February 14, 2013 the Conservancy authorized funding for ongoing revegetation and enhancement projects through March 2015. This authorization would provide additional funding towards ISP revegetation planning, mapping, and monitoring projects at 31 sites. Technical Planning activities are expected to be undertaken by lead ISP environmental services contractor Olofson Environmental, Inc. retained by the Conservancy. The activities will include planning, mapping, and monitoring revegetation work at the 31 Invasive *Spartina* Project treatment sites in San Francisco Bay.

These activities will also take place during July 2014 through June 2016. Total anticipated funding for these activities is estimated to be \$500,000.

## **PROJECT HISTORY**

The Conservancy first approved funding for the ISP Control Program in September 2003 (see Exhibit 1). This invasive species eradication project has become a successful, region-wide model for treating an invasive species with multiple landowners and agency stakeholders participating in the project in all nine counties of the San Francisco Bay Area. Since the peak of invasion in 2005, the Control Program has resulted in the elimination of more than 772 net acres (nearly 97%) of invasive *Spartina alterniflora*, *densiflora*, *anglica*, and *patens*; and hybridized *Spartina foliosa x alterniflora* and *Spartina densiflora x alterniflora* from more than 20,000 acres of infested tidal marsh and 25,000 acres of mudflats bay-wide. There is an estimated total of less than 33 net acres of remaining non-natives and hybrids, located within thousands of acres of tidal wetland sites in San Francisco Bay.

The area of non-native *Spartina* has been reduced markedly since the first full season of effective treatment started eight years ago. In most areas where non-native *Spartina* has been eradicated, the result has been rapid and large-scale return to a native plant species dominated habitat at low- and mid-marsh elevations, and a return to the natural mudflat and tidal channel conditions at lower elevations. As the marshes recover from the *Spartina* invasion over time, it is anticipated that native plant diversity will passively recover in most marshes.

However, in some locations, particularly near the point of initial introduction and in areas where hybrids were intentionally transplanted, the non-native cordgrass had effectively displaced most of the native flora, significantly damaging the native marsh structure. The non-native cordgrass has caused changes to habitat that the endangered California clapper rail uses, and implementation of the Revegetation and Monitoring Plan (Exhibit 2) is necessary to create habitat to benefit rails.

Pilot revegetation projects have been underway since 2006, involving multiple participants at several sites and providing the basis for expected success with the scaled-up full revegetation approach as described below. ISP and its collaborators increased efforts with an aggressive revegetation program in 2011 (see Exhibits 1 and 2), and have outplanted a total of 210,000 native seedlings at 40 sites in the first three winter planting seasons from August 2011 through April 2014 (see Exhibit 6).

This authorization requests funding for 2014-15 and 2105-15 revegetation and enhancement projects at 31 sites. A total of 200,000 native cordgrass and marsh gumplant seedlings will be

## Exhibit 2

propagated and outplanted, and 40 high tide refuge islands will be constructed, in winter 2014-15 and 2015-16 and monitored each year. These projects will result in improved habitat at each of the locations.

**Overview of Revegetation Approach:** Exhibit 2 provides a full description of revegetation and enhancement goals and techniques. This revegetation plan seeks to augment native plant species within the tidal marsh plain and in adjacent upland areas, where it will enhance refugia for California clapper rails. Exhibits 6 and 7 provide preliminary monitoring information on revegetation and high tide refuge island work to date.

**Revegetation Program Goals and Objectives:** The proposed authorization is consistent with the Revegetation Program, and will include active revegetation to enhance 3,315 acres of clapper rail habitat.

### Goals:

1. Enhance and accelerate *Spartina foliosa* re-establishment at selected marshes through introduction of plugs or propagated seedlings that will support associated faunal communities including clapper rail foraging and nesting habitat.
2. Enhance and accelerate post-treatment marsh succession and complexity with introduction of other native marsh plant species (such as *Grindelia stricta*), which have a tall shrubby structure that will provide clapper rail nesting substrate, cover and high tide refugia.
3. Provide additional high tide refugia by constructing high tide refuge islands.

### Objectives:

1. Propagate 200,000 native cordgrass and marsh gumplant seedlings in local native plant nurseries.
2. Conduct science-based revegetation projects at 31 sites that use best methods and planting scenarios for *Grindelia stricta* and *Spartina foliosa* as appropriate.
3. Construct 40 high tide refuge islands that build on lessons learned and monitoring information from 22 islands constructed to date.
4. Comprehensively monitor planting and enhancement efforts, including:

Conservancy staff anticipates that this funding will fully support implementation and technical planning activities through July 2016, completing the Five Year Plan (Exhibit 2). Revegetation funding from external sources for the ISP is critical at this stage of the project as we comply with Endangered Species Act regulations and near our goals for eradication, amidst decreasing state bond funds.

**PROJECT FINANCING**

USFWS National Coastal Wetlands Conservation Grant funds	\$920,000
USFWS North American Wetlands Conservation Act Grant funds	\$900,000
Coastal Conservancy matching funds (previously authorized)	\$2,674,021
<b>Total Authorization</b>	<b>\$4,494,021</b>

The proposed disbursement of under this authorization will derive entirely from the USFWS federal grant funds that the USFWS will provide to the Conservancy. Under the North American Wetlands Conservation Act (NAWCA) of 1989, USFWS provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico for the benefit of wetlands-associated migratory birds and other wildlife, and involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats. The National Coastal Wetlands Conservation Grant Program (NCWC) was established by Title III of P.L. 101-646, Coastal Wetlands Planning, Protection, and Restoration Act of 1990. Under the Program, USFWS provides matching grants to States for acquisition, restoration, management or enhancement of coastal wetlands. These two grants have been awarded to the Conservancy specifically for the work described in this staff recommendation, and the projects meet all requirements of the grant fund sources.

The total amount of USFWS funding is \$2,000,000; up to \$1,820,000 will be used for project costs and up to \$180,000 will support Conservancy staff project management.

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

As described in previous staff recommendations (Exhibit 1) and associated Conservancy resolutions, the ISP and implementation of the Revegetation Program serve to carry out the objectives for the San Francisco Bay Area Conservancy Program mandated by Chapter 4.5 of Division 21 of the Public Resources Code, Sections 31160-31165. The ISP and its Revegetation Program serve to protect and restore tidal marshes, which are natural habitats of regional importance. The proposed project would be undertaken pursuant to Chapter 4.5 of the Conservancy's enabling legislation, Public Resource Code Sections 31160-31165, which states that the Conservancy may award grants in the nine-county San Francisco Bay Area to help achieve stated goals.

Under Section 31162(b), the Conservancy may award grants to "protect, restore, and enhance natural habitats and connecting corridors, watersheds, scenic areas, and other open-space resources of regional importance". This project entails the restoration and enhancement of natural habitats within the nine-county Bay Area region.

The Project satisfies all of the criteria for determining project priority under 31163(c), since the project: 1) is supported by adopted regional plans including the Baylands Ecosystem Habitat

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Goals Report (1999), San Francisco Bay Subtidal Habitat Goals Report (2010), San Francisco Bay Joint Venture Implementation Strategy (2011), San Francisco Estuary Comprehensive Conservation and Management Plan (2007), Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California (2013); 2) serves a regional constituency by enhancing habitat for endangered species; 3) can be implemented in a timely manner as the contractor and grantee are prepared to start work immediately upon securing funding and permits; 4) provides direct benefits to endangered species that would be lost if the project is not quickly implemented; and 5) will include significant matching funds from the USFWS.

### **CONSISTENCY WITH CONSERVANCY'S 2013 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S)**

The ISP and implementation of the Revegetation Program carry out the goals and objective of the 2013 Strategic Plan, adopted by the State Coastal Conservancy Board on December 6, 2012.

Consistent with **Goal 7, Objective D** of the Conservancy's 2013 Strategic Plan, the proposed project will install high tide refuge islands and artificial floating nesting islands for California Clapper Rail, which helps to implement adaptation pilot projects that reduce hazards from sea level rise and extreme storm events, and which protect natural resources and maximize public benefits.

Consistent with **Goal 11, Objective C** of the Conservancy's 2013 Strategic Plan, the proposed project will develop plans for enhancement of 3,315 acres of tidal wetlands.

Consistent with **Goal 11, Objective D** of the Conservancy's 2013 Strategic Plan, the proposed project will implement plans for enhancement of 3,315 acres of tidal wetlands.

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

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines adopted November 10, 2011, 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. **Support of the public:** The project has a broad base of support from multiple public agencies and non-profit organizations, including the USFWS, San Francisco Bay Joint Venture, San Francisco Estuary Partnership, Save The Bay, and others.
4. **Location:** The project is located within the jurisdiction of the San Francisco Bay Area Conservancy Program.

5. **Need:** The Conservancy depends on partnership and outside fund sources to complete ISP revegetation projects; without the proposed revegetation work, the project cannot succeed.
6. **Greater-than-local interest:** The recovery of endangered species and restoration of tidal marsh habitat is of regional significance.
7. **Sea level rise vulnerability:** Sea levels are anticipated to rise a minimum of eighteen inches by 2050 and fifty-five inches by 2100. The nine sites are subject to the effects of sea level rise, along with increased wave erosion, storm surge and habitat changes. The restoration of high tide flood refugia at these sites will provide higher elevation habitat in the face of sea level rise.

### **Additional Criteria**

8. **Urgency:** Failure to implement the project in the near future will mean not enhancing endangered species habitat at the sites, which is required by ISP permits.
9. **Leverage:** See the “Project Financing” section above.
10. **Readiness:** The project can be implemented in winters 2014-15 and 2015-16.
11. **Cooperation:** The revegetation plans for restoring the sites were developed with significant input from many organizations, including the USFWS, the San Francisco Bay Joint Venture, nine treatment agency grantees, and a Technical Advisory Committee with regional clapper rail experts.
13. **Minimization of Greenhouse Gas Emissions:** The EIR for the project provides a comprehensive discussion of temporary construction air quality impacts and the resulting air quality benefits of the project post-construction. Greenhouse gasses will be reduced post-construction primarily through vehicle trip reduction and carbon sequestration by restored habitats. Tidal marshes are known to sequester significant amounts of atmospheric carbon. According to Trulio et. al. (2007) “restoring tidal salt marshes is one of the most effective measures for sequestering carbon.” Other studies have demonstrated these beneficial effects on greenhouse gas reduction.

### **CONSISTENCY WITH SAN FRANCISCO BAY PLAN:**

The Project is within the permit jurisdiction of the San Francisco Bay Conservation and Development Commission (“BCDC”).

The project is consistent with the following policies of BCDC's San Francisco Bay Plan:

#### **Part III: The Bay as a Resource**

##### **Water Quality**

- To the greatest extent feasible, the Bay marshes, mudflats, and water surface area and volume should be maintained and, whenever possible, increased.

##### **Marshes and Mudflats**

- To offset possible additional losses of marshes due to necessary filling and to augment the present marshes: (c) the quality of existing marshes should be improved by appropriate measures whenever possible.

**COMPLIANCE WITH CEQA:**

The proposed activities were required as enhancement measures under the Conservancy-certified programmatic “Final Programmatic Environmental Impact Statement/Environmental Impact Report, San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program” (FEIS/R) prepared for the ISP Control Program pursuant to the California Environmental Quality Act (CEQA). In addition, all revegetation activities described in this proposal are subject to the oversight of and have been approved and permitted under the current Section 7 Endangered Species Act consultation with US Fish and Wildlife Service.

Since the projects, including potential environmental effects and conservation measures, remain unchanged, the proposed authorization remains consistent with the CEQA findings adopted by the Conservancy in connection with the September 22, 2011 authorization for the 40 original revegetation sites (Exhibit 2). No further environmental documentation for these revegetation activities is required.