Exhibit 1: September 25, 2003 Staff Recommendation

INVASIVE *SPARTINA* PROJECT – PHASE II
IMPLEMENTATION OF CONTROL PROGRAM

Agenda Item 3.
September 25, 2003

COASTAL CONSERVANCY

Staff Recommendation
September 25, 2003

INVASIVE *SPARTINA* PROJECT – PHASE II

IMPLEMENTATION OF CONTROL PROGRAM

File No. 99-054
Project Manager: Maxene Spellman

RECOMMENDED ACTION: Consideration and certification of the "Final Programmatic Environmental Impact Statement/Environmental Impact Report, San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program" (FEIS/R); and authorization: 1) to implement the *Spartina* Control Program; 2) to accept $50,000 from the U.S. Fish and Wildlife Service (USFWS), as an augmentation of a 1999 CALFED grant to the Conservancy; 3) to disburse up to $700,000, consisting of the $50,000 in augmented 1999 CALFED grant funds and $650,000 of Conservancy funds, for the purchase of equipment and for environmental consulting services needed to operate and manage the *Spartina* Control Program; and 4) to disburse up to $180,600 in funds, available under the 1999 CALFED grant and a 2001 CALFED grant to the Conservancy, as separate grants to ten organizations for *Spartina* treatment and removal demonstration projects.

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

PROGRAM CATEGORY: San Francisco Bay Area Conservancy

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 certifies the "Final Programmatic Environmental Impact Statement/Environmental Impact Report, San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program" (FEIS/R), attached to this staff recommendation as its Exhibit 1, authorizes the Conservancy to implement the *Spartina* Control Program consistent with Alternative 1 of the FEIS/R, as modified by incorporation of all mitigation measures identified in the FEIS/R, and adopts the Mitigation Monitoring and Reporting Program ("MMRP"), attached to the FEIS/R as Attachment K.

The Conservancy further authorizes:

1. The acceptance of fifty thousand dollars ($50,000) from the United States Fish and Wildlife Service (USFWS) by augmentation and amendment of a 1999 CALFED

grant to the Conservancy and disbursement of those funds as described in paragraph 2, below.

2. The disbursement of an amount not to exceed seven hundred thousand dollars ($700,000), consisting of the fifty thousand dollars ($50,000) in augmented 1999 CALFED grant funds and six hundred fifty thousand dollars ($650,000) in Conservancy funds, for the purchase of equipment and for environmental consulting services needed to operate and manage the regionally coordinated *Spartina* Control Program consistent with environmental law and regulation, including the continued services of a Project Director, Field Operations Manager, Field Biologist and Plant Ecologist and the supplemental services of a Compliance and Monitoring Officer.

3. The disbursement of an amount not to exceed one hundred eighty thousand six hundred dollars ($180,600), available through the 1999 CALFED Grant and a 2001 CALFED grant to the Conservancy, as separate grants for implementation of *Spartina* treatment and eradication demonstration projects. Grant recipients are the Alameda Flood Control District, the East Bay Regional Park District, the City of Palo Alto, the Marin Conservation Corps, the California State Parks Foundation, the USFWS Don Edwards San Francisco Bay National Wildlife Refuge, Friends of Corte Madera Creek, and National Audubon Society. Each grant shall be subject to the following conditions:

   a. Prior to implementing any control and treatment project and prior to disbursement of any funds to the grantee, the grantee shall submit for review and approval of the Executive Officer a site-specific plan, including mitigation measures, and a work program, schedules and budgets, and shall provide evidence that the grantee has obtained all necessary permits and approvals for the project.

   b. In carrying out any control and treatment project, the grantee shall comply with all applicable mitigation and monitoring measures that are identified in the FEIS/R for the Control Program, that are set forth in the approved site-specific plan, or that are required by any permit or approval for the project."

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 Conservancy has independently reviewed and considered the information contained in the FEIS/R pursuant to its responsibilities under the California Environmental Quality Act ("CEQA"). The FEIS/R has been completed in compliance with CEQA under the direction and supervision of the Conservancy and reflects the Conservancy's independent judgment and analysis.

2. The FEIS/R identifies potential significant effects from implementation of the *Spartina* Control Program in the areas of Hydrology and Geomorphology, Water Quality, Biological Resources, Air Quality, Noise, Human Health and Safety, Visual

Resources, Cultural Resources and Cumulative Impacts. With regard to these impacts, the Conservancy finds as follows:

a. As modified by incorporation of the mitigation measures identified in the FEIS/R, the *Spartina* Control Program or its operating conditions have been changed to avoid, reduce or mitigate all of the possible significant environmental effects of the project, including effects on Hydrology and Geomorphology, Water Quality, Biological Resources, Air Quality, Noise, Human, Health and Safety, Visual Resources, Cultural Resources and Cumulative Impacts, described in the accompanying staff report, except for short term effects to the salt-marsh harvest mouse, tidal shrew, California clapper rail and California black rail and short-term impacts to Visual Resources.

b. The *Spartina* Control Program will result in "significant and unavoidable" but short-term effects to the salt-marsh harvest mouse, tidal shrew, California clapper rail and California black rail and short-term impacts to Visual Resources. Specific environmental and other benefits of the project described in the accompanying staff recommendation and detailed in the FEIS/R outweigh and render acceptable these unavoidable adverse environmental effects because the project will result in the long-term environmental benefits of preserving and restoring native habitat for these endangered species and for other plant and animal species that otherwise would be threatened by the continued spread of invasive cordgrass in the Estuary, while avoiding the severe adverse impacts associated with failing to control the continued spread of non-native cordgrass.

c. Alternatives to the *Spartina* Control Program analyzed in the FEIS/R are infeasible in that they do not achieve the project objectives of control and eradication of non-native cordgrass, will result in the same or greater environmental impact and will not produce the same environmental benefit as the Control Program.

3. The environmental effects associated with the demonstration treatment projects proposed for grant funding by the Conservancy and the mitigation measures to reduce or avoid those effects were identified and considered in the program FEIS/R.

4. The Introduced *Spartina* Project and implementation of the *Spartina* Control Program remain consistent with Public Resources Code Sections 31160-31164, and with the resolutions, findings and discussion accompanying the Conservancy actions of October 28, 1999, and January 25, 2001, including the requirement of a board authorization for Phase II, Implementation of the *Spartina* Control Program (attached as Exhibit 2).

5. The proposed authorization is consistent with the Project Selection Criteria and Guidelines adopted by the Conservancy on January 24, 2001.

6. The Friends of Corte Madera Creek, the National Audubon Society, the Marin Conservation Corps, and the California State Parks Foundation are private nonprofit organizations existing under Section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the California Public Resources Code."

PROJECT SUMMARY:

Background and Overview

The Conservancy has managed the Invasive *Spartina* Project (ISP) since 2000 with the purpose of creating a regionally coordinated effort to control/eradicate invasive cordgrass from the San Francisco Estuary. To that end, and as noted in previous staff recommendations (Exhibit 2), the Conservancy has been working on critical research and related issues and on preparing the environmental documentation required under CEQA to fund and implement *Spartina* control and treatment projects. The need for immediate implementation of control efforts is best illustrated by two critical facts: 1) *Spartina* hybrids, the offspring of the invasive *alterniflora* and native cordgrass parents, spread at a greater than exponential rate; and 2) *every* marsh restoration project that has been implemented within the south and central San Francisco Estuary in the past 15 years has been invaded by non-native *Spartina* and its hybrids.

Long-term effects of the spread of invasive cordgrass and its robust hybrids, if left uncontrolled, are the following:

- Loss of tidal flats and critical foraging habitat for migratory birds that comprise the important San Francisco Estuary Pacific Flyway stopover.
- Inability to restore native tidal marsh through existing and future restoration projects.
- Filling and clogging of tidal sloughs and flood control channels.
- Threat to the survival of the endangered California clapper rail and the salt marsh harvest mouse, and endangered marsh plants such as soft bird's beak and California seablite.
- Potential spread of non-native cordgrass to other California estuaries.

The Invasive Spartina Project has reached some major milestones, most notably the completion of the "Final Programmatic Environmental Impact Statement/Environmental Impact Report for the San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program" (FEIS/R) and the development of a control strategy and of a number of site-specific plans for demonstration projects for the removal of invasive *Spartina*. Pursuant to the California Environmental Quality Act (CEQA), before the Conservancy can authorize, fund or implement control or treatment activities, the FEIS/R must be reviewed and certified as a complete document that complies with the requirements of CEQA. Once that has occurred, the Control Program can be approved, taking into consideration the FEIS/R, and required permits may be obtained and control work can immediately begin on priority demonstration sites during the last remaining months of the 2003 control season. That season includes selected days that extend from September through November to avoid the California clapper rail nesting season and to correspond with low tides.

This project involves three separate Conservancy actions. First, it seeks Conservancy consideration and certification of the FEIS/R that has been prepared pursuant to the requirements of CEQA and approval of the Control program in light of the FEIS/R analysis

of environmental effects of the Program. Second, assuming that the FEIS/R is certified, the project proposes that the Conservancy authorize the acceptance of additional funds ($50,000) for the ISP Control Program from the U.S. Fish and Wildlife Service (USFWS) by way of augmentation and amendment of an existing grant to the Conservancy that was originally awarded in 1999 (CALFED 1). Third, the project seeks authorization to disburse the augmented CALFED 1 grant funds, along with Conservancy funds in the amount of $650,000 and CALFED funds ($180,600) from CALFED 1 and from a second grant awarded to the Conservancy in 2001 (CALFED 2), all towards implementation of the ISP Control Program. Disbursement of funds for implementation of the Control Program will take two forms: grants to public entities and nonprofit organizations and contracts for equipment and environmental consulting services.

A maximum of $180,600 (CALFED 1 and CALFED 2) will be disbursed as separate grants to ten grantees for demonstration control projects. The proposed grantees are: the Alameda Flood Control District, the East Bay Regional Park District, the City of Palo Alto, the Marin Conservation Corps , the California State Parks Foundation, the USFWS Don Edwards San Francisco Bay National Wildlife Refuge, Friends of Corte Madera Creek, and National Audubon Society. With the exception of Friends of Corte Madera Creek and National Audubon Society, each control project will be implemented on property owned or managed by the grantee. Cumulatively, projects by these grantees will initiate treatment on a total of 135 acres, comprising approximately 25 percent of the *Spartina* invasion, during the 2003 control season. The demonstration projects are described in more detail, below.

A maximum of $700,000 (CALFED 1 and Conservancy funds) will be disbursed under existing and future Conservancy contracts for equipment purchases and for environmental consulting services needed to assist the Conservancy in carrying out the Control Program in compliance with environmental law and regulation. Further detail is provided below.

Implementation of the *Spartina* Control Program

Through the FEIS/R, the Conservancy and the USFWS jointly undertook a comprehensive evaluation of proposed *Spartina* treatment approaches and alternatives, their environmental impacts, and the means to mitigate those impacts. The FEIS/R specifically assessed three separate alternative approaches to addressing invasive *Spartina*. "Alternative 1," as described by the FEIS/R, consists of a comprehensive, region-wide eradication program coordinated by the Conservancy and the USFWS, utilizing all available control treatment methods (manual, chemical and mechanical), with the choice of which method to use dependent on the characteristics of a given site. Alternative 2 is a similar regional, coordinated eradication program using all available mechanical and manual treatment methods, but excluding the use of chemical treatment (application of a glyophosate-based herbicide). Alternative 3 is described as an approach under which treatment would occur, as it does now, on an *ad hoc* and limited basis, without any regional coordination by the Conservancy and USFWS.

Based on existing, established scientific opinion, the FEIS/R assessment concluded that "Alternative 1," as modified by incorporation of all mitigation measures, was the environmentally superior alternative under CEQA. In brief, this is because Alternative 1 is

expected to achieve control and eradication of invasive *Spartina* within the San Francisco Bay and Estuary, given the greater effectiveness of appropriate herbicide control and treatment, particularly in areas where the size of infestation is large. Further, even though Alternative 2 may avoid impacts associated with herbicide use, any such impacts would be more than offset by the need for greater reliance on mechanical and manual methods and the more substantial impacts associated with those methods and the need to repeat the use of those methods over a longer term. Moreover, under Alternative 2, there is a greater possibility that, despite treatment, effective control would not be achieved, given the inability of mechanical and manual treatment to keep pace with the spread of invasive *Spartina* and its hybrids. (Also see discussion under the "Compliance with CEQA" section below)

Based on this assessment, staff recommends that, subject to certification of the FEIS/R, the Conservancy act to authorize the implementation of Alternative 1 (as modified by incorporation of mitigation measures identified in the FEIS/R) as the S*partina* Control Program. Implementation of the Control Program, in general, will involve activities undertaken by Conservancy staff and its team of retained environmental consultants to move forward the coordinated region-wide program of control, treatment and eradication of invasive *Spartina* as described by Alternative 1. In addition, the Control Program will be implemented by the Conservancy through specific authorizations for disbursements of grants for treatment projects and for the funding of equipment and needed environmental consultants, as are proposed by this staff recommendation, and described below

Grants for Demonstration Projects

This staff recommendation proposes grants to ten organizations for demonstration projects on 12 sites. The proposed demonstration projects for the initial control season in 2003 were chosen as a result of a regionally coordinated, collaborative, and scientifically based process. The Conservancy mapped non-native *Spartina* and hybrids in partnership with the San Francisco Estuary Institute and the University of California at Davis, and using Bodega Bay laboratories where samples of *Spartina alterniflora* and hybrids were sent for genetic testing to confirm field identification. Criteria for selecting priority sites, treatment methods, and site-specific plans were developed in collaboration with management entities throughout the Bay and researchers at the Bodega Bay lab. Invaded sites were scrutinized according to weighted criteria such as proximity to open mudflats or existing restoration sites at risk, eradication of outlier populations to restrict spread, presence and absence of California clapper rail, and strength of landowner/management partnerships. Some of the management goals that can be achieved at the selected sites include the following:

- Demonstrate both mechanical and chemical control methods to help determine the most cost-effective and environmentally sensitive approach for the 2004-2006 control seasons.
- Eradicate outliers to restrict spread.
- Treat 100% of the invasive *Spartina densiflora* at Piper Park, Pickleweed Park, and Point Pinole, and 100% of invasive *Spartina patens* found in the San Francisco Estuary.
- Complete treatment at one site by following up work that was previously done.

- Eradicate all non-native *Spartina* on some high priority sites.

The highest-ranking demonstration sites (see Exhibit 3 for locations), where these goals for removal of invasive *Spartina* can be achieved, are proposed for grant funding. Partner grantees are committed and are in the process of obtaining permits to be ready to implement site-specific plans according to the requirements of this project and in compliance with regulatory and mitigation and monitoring measures identified in the FEIS/R. The proposed demonstration projects are described below:

1) Blackie's Pasture, Marin County (Grantee: National Audubon Society)
Blackie's Pasture is at Blackie's Creek. The treatment area includes 0.08 acre at the seasonal creek, at its mouth, and along the Bay shoreline. Very steep channel banks are colonized by thick, dense stands of *Spartina* hybrids. At the mouth and shoreline are hybrid *Spartina*, invasive *Spartina alterniflora* and invasive *Spartina densiflora*. No California clapper rails are found at this site. The goal is to eradicate the invasives through digging, mowing, and covering.

2) Pickleweed Park, City of San Rafael, Marin County (Grantee: Marin Conservation Corps)
The treatment area includes 0.03 acre of predominantly high marsh dominated by pickleweed and cordgrass. The site is moderately infested with invasive *Spartina densiflora* on the bayward side of the park. Digging, mowing, and hand application of herbicides are planned here. The goal is complete eradication of *Spartina densiflora* at this site.

3) Corte Madera Creek, City of Corte Madera, Marin County (Grantee: Friends of Corte Madera Creek)
This site includes Corte Madera Marsh Reserve (a large bayfront pickleweed-dominated high marsh with stands of invasive *Spartina densiflora*, and hybrids), College of Marin Ecological Reserve (a tidal marsh with stands of invasive *Spartina densiflora),* and Piper Park (City park with high marsh with approximately five dozen invasive *Spartina densiflora* left after manual removal effort in January 2003). California clapper rail is found here and digging, mowing, and covering are planned with the goal of removing approximately 5.07 acres of non-native cordgrass.

4) Alameda Flood Control Channel, Alameda County (Grantee: Alameda Flood Control District)
The Alameda Flood Control Channel includes the upper and lower channel on either side of Coyote Hills Slough. The total infestation is on 48 acres and exists as far as five miles from the Bay, mostly on the northern banks. The lower channel represents the densest infestation with large meadows of the hybrid. The California clapper rail is found in the lower channel but not the upper. This site will be used to demonstrate various control options, including mechanical and chemical, to determine the best and most effective approach for the 2004-06 control seasons.

5) Emeryville Crescent, Alameda County (Grantee: East Bay Regional Park District)
Emeryville Crescent is a shallow fringe marsh that includes some mudflats. Native *Spartina foliosa* is interspersed with the invasive *Spartina alterniflora*/hybrids. Invasives cover about 0.8 acres. This is one of the most northerly locations of the hybrids in the

East Bay. The goal is to eradicate the invasive *Spartina* here using backpacks and an amphibious vehicle to spray with herbicides.

6) Oro Loma Marsh, Alameda County (Grantee: East Bay Regional Park District)

Oro Loma Marsh is a formerly diked salt pond with many dispersed invasive *Spartina* hybrid clones which are spreading rapidly. The invasion will likely be similar to the adjacent Cogswell Marsh, a restored marsh dominated by monocultural stands of *Spartina* hybrids. One and a third acre will be treated this season. This site will also be used to demonstrate mechanical and chemical, including aerial application, treatment options with the ultimate goal to eradicate approximately 70 acres of *Spartina* hybrids over the 364-acre site next seasons.

7) Palo Alto Baylands, Santa Clara County (Grantee: City of Palo Alto)

Palo Alto Baylands is established high marsh dominated by pickleweed with invasive *Spartina* established at the mouths of the sloughs. The interior is a restored marsh with stands of scattered invasive *Spartina.* Treatment will occur on .05 acre spread over 10 acres using ground and boat application of herbicides with the goal to eradicate all of the infestation. California clapper rail is found here.

8) Coyote Creek/Mowry Slough, Alameda County and Santa Clara County (Grantee: USFWS Don Edwards National Wildlife Refuge)

This site is a high marsh pickleweed habitat between Coyote Creek and Newark Slough with *Spartina* hybrids dispersed amongst wide high marsh and along the channel edges. The goal is to treat approximately 0.1 acre of non-native cordgrass using ground, boat, and targeted aerial application of herbicides, with the goal to eradicate the infestation at this site. California clapper rail is found here.

9) Bair and Greco Islands, San Mateo County (Grantee: USFWS Don Edwards National Wildlife Refuge)

This is a complex of large sloughs, restored sites (formerly diked marshes), and an island marsh dominated by pickleweed bordered with patches of cordgrass. Infestations of *Spartina* hybrids range from patchy to dense. The goal is to treat 80 acres using ground, boat, and targeted aerial treatment of herbicides. California clapper rail is found here.

10) Point Pinole Marshes, Contra Costa County (Grantee: East Bay Regional Park District)

Whittel marsh is within the Point Pinole Regional Shoreline. This historic marsh is dominated by pickleweed and other high marsh vegetation with *Spartina densiflora* scattered along the eroding bay edges. The marsh on the southern end of Point Pinole is a narrow fringe marsh with 1-2 *Spartina* alteerniflora/hybrids and a couple of dozen *Spartina densiflora* clones. The goal is to eradicate the complete infestation of approximately 0.1 acre by ground application of herbicides. California clapper rail is found here.

11) Southampton Marsh, Contra Costa County (Grantee: California State Parks Foundation)

This site, located in Benecia State Recreation Area, is predominantly high marsh dominated by pickleweed with a single major slough and many smaller sloughs. Southampton Marsh contains the only known population of the invasive *Spartina patens* scattered mostly amongst the lower portion of this marsh and spreading rapidly. The goal is to eradicate the infestation on 0.3 acre using mowing covering and targeted aerial herbicide

application. California clapper rail and the endangered plant species soft bird's beak are found here.

12) Southeast San Francisco Shoreline, San Francisco County (Grantee: California State Parks Foundation)

The Southeast San Francisco Shoreline comprises four locations: Pier 98 Heron's Head, India Basin, Hunters Point Naval Reservation, and Yosemite Channel. The sites are heavily industrialized with remnant or restored tidelands dispersed among mudflats and creek mouths. *Spartina* hybrids are sparsely scattered, with one site (India Basin) having only one large clone, one with hybrids scattered within riprap (Heron's Head), and two sites (Hunters Point and Yosemite Channel) with several small and large hybrid clones. The goal is to accomplish full eradication on 1.9 acres at these sites this season, using mowing and targeted herbicide application. No California clapper rails are found at these sites.

Each demonstration site will be monitored for control efficacy. Water quality monitoring will also be done at some of these sites

Disbursements for Equipment and Environmental Consultants

Completion of environmental documentation has been delayed nearly one year due primarily to USFWS workload and need to attend to compliance for other projects that delayed review of the Administrative Draft and Draft EIS/R. Hence, the CALFED grants that provide funding for this project were extended to December 2004 and March 2006 so that the funds budgeted for treatment can be used prior to expiration. In addition, CALFED recently approved a $50,000 augmentation of the existing 1999 CALFED grant in order to fund ongoing project management. The augmented CALFED funds, along with Conservancy funding in the amount of $650,000, are needed to meet the costs of equipment and of Conservancy environmental services consultants for effective operation and management of the Invasive *Spartina* Project and its Control Program through December 2004.

These funds will be used to move the multi-faceted ISP into the implementation phase over the next year and a half. Specifically, Conservancy funds will be used to continue the environmental services of the Project Director, Field Operations Manager, Field Biologist, and Plant Ecologist, and to add the services of a Compliance and Monitoring Officer. As this project moves into implementation of the Control Program, the Compliance and Monitoring Officer will be needed to help track and monitor appropriate regulatory approvals for each site-specific project under the Control Program and 'tiered' off of the FEIS/R. The team of environmental professionals will assist the Conservancy in its efforts to effectively and properly implement the Control Program, through establishment of scientific panel oversight, review and preparation of site-specific treatment plans, coordination of environmental permitting and compliance, sponsoring and encouraging active and ongoing research, monitoring to assess the efficacy and impacts of the variety of treatment methodologies, and assisting grantees and partners in carrying out treatment and control activities in compliance with CEQA and all other environmental regulations. The Conservancy will also fund required field supplies, equipment, and crews for monitoring. Examples of needed equipment, field supplies, and related costs include the following:

- Geographic Positioning Systems units

- software
- cameras
- aerial photographs
- water quality lab costs
- spray ball
- other related items as needed
- field-based data input equipment

The purchase of a spray ball, a well-tested new technology that allows for aerial spraying that precisely targets individual plants identified for treatment, is expected to further reduce impacts that are already identified as less than significant in the FEIS/R.

Prior Conservancy Actions and Funding History: As described in detail in Exhibit 2, previous Staff Recommendations for the Invasive Spartina project, the Conservancy has authorized the following:

- Two expenditures of Conservancy funding totaling $486,250.
- Acceptance and disbursement of all but implementation funds from two CALFED grants totaling $2,068,661.
- Acceptance and disbursement of $101,000 from other non-CALFED grants.

Between 2000 and 2003 the Conservancy also expended the following:

- $7,000 to hire an environmental consultant to assist in devising a strategy for environmental compliance.
- $7,000 to hire a field assistant to assist in the identification and mapping of invasive *Spartina*.
- $14,925 and $20,000, respectively, to help project management while awaiting an executed agreement from CALFED for its second grant to the Conservancy for this project.
- $1,750 for printing the Final EIS/R.

PROJECT FINANCING THIS AUTHORIZATIOIN:

A. <u>Financing for Consultants, Equipment and Supplies</u>

Coastal Conservancy	$650,000
1999 CALFED grant augmentation	50,000
Total Project Cost	**$700,000**

Conservancy funding for this aspect of the project is expected to come from the Conservancy's FY 03/04 budget appropriation from the "Water Security, Clean Drinking Water Coastal and Beach Protection Fund of 2002" (Proposition 50). These Proposition 50 funds may be used for coastal watershed projects for protection or restoration of land and water resources. The proposed project does just that—its major object is to protect restore the watershed lands of the Bay and bayland resources and habitat by control and eradication of invasive cordgrass.

B. Financing of Grants for Demonstration Projects

Grantee	Site(s)	SCC	Grantee match
Alameda Flood Control District	Alameda Flood Control Channel	$24,000	$20,000
East Bay Regional Park District	1.Emeryville Crescent	$8,400	$2,000
	2. Oro Loma Marsh	$12,000	$8,000
	3. Point Pinole	$1,800	$2,000
Don Edwards San Francisco Bay Nat'l. Wildlife Refuge (USFWS)	1. Bair/Greco Islands	$108,000	$80,000
	2. Coyote/Mowry Slough Area	$1,800	$1,200
City of Palo Alto	Palo Alto Baylands	$1,800	$500
California State Parks Foundation	1. Southeast San Francisco Shoreline	$12,000	$6,500
	2. Southampton Marsh	$1,800	$6,500
Marin Conservation Corps	Pickleweed Park	$1,800	$800
Friends of Corte Madera Creek	Corte Madera Creek	$3,000	$3,000
Tiburon Audubon	Blackie's Pasture	$3,000	$1,500
TOTAL		**$180,600**	**$87,300**
GRAND TOTAL COSTS – ALL PROJECTS:		**$267,900**	

The total Conservancy (SCC) contribution of $180,600 for the proposed grants is from funds remaining under 1999 and 2001 CALFED grants to the Conservancy. Under the terms of the CALFED grants, the Conservancy may use these funds for *Spartina* treatment and control projects.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

As described in previous staff recommendations (Exhibit 2) and associated Conservancy resolutions, the ISP and implementation of the Control Program serve to carry out the objectives for the San Francisco Bay Conservancy Program mandated by Chapter 4.5 of the Conservancy's enabling legislation (Public Resources Code Sections 31160-31164). The project is authorized by Section 31162 of the Public Resources Code, which allows the Conservancy to undertake projects and award grants in the nine-county San Francisco Bay area to public and private agencies and organizations. The project is consistent with Public Resources Code Section 31162(a), since both the ISP and its Control Program will serve to protect and restore tidal marshes, which are natural habitats of regional importance.

CONSISTENCY WITH CONSERVANCY'S STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):

San Francisco Bay Program Goal Matrix under Regional Projects identifies the *Spartina* Control project as a program of regional significance under the Strategic Plan.

Consistent with **Goal 5, Objective C** of the Conservancy's Strategic Plan, the proposed project will serve to implement 12 projects to eradicate non-native invasive species that threaten native coastal habitats. If left uncontrolled, non-native invasive *Spartina* will potentially spread up and down the coast to other California estuaries.

Consistent with **Goal 10, Objective A**, the proposed project will initiate implementation of the Invasive *Spartina* Project: *Spartina* Control Program to prevent up to 30,000 acres of marsh and mudflats from being invaded and potentially covered by invasive *Spartina* and hybrids and to preserve and restore natural habitats in the San Francisco baylands.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines adopted January 24, 2001, 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:** This project is supported by regulatory agencies, public agencies and special districts, nonprofit organizations, and scientists that work to protect and restore wetlands. This broad support is demonstrated by the numerous Letters of Support as part of the original October 28, 1999 Staff Recommendation. Additionally, a number of agencies and environmental organizations have expressed support in comments received on the Draft EIS/R (see Chapter 10 of the FEIS/R).
4. **Location:** This project is located in the nine San Francisco Bay Area Counties to benefit the restoration of the San Francisco baylands.
5. **Need:** San Francisco Bay has lost up to 93 percent of its original tidal marsh habitat. Fifty-five percent of the threatened and endangered species of the Bay Area are found in the tidal marshes. Left uncontrolled, introduced *Spartina* threatens to convert a significant portion of the open mudflats and tidal marshes to a monoculture which will reduce habitat for the species endemic to the area.
6. **Greater-than-local interest:** Introduced *Spartina* threatens to move up the delta, and down the coast to southern California. In the San Francisco Bay, introduced *Spartina* threatens to displace listed state and federal special status species, such as the endangered California clapper rail, California black rail, and the salt marsh harvest mouse.

Additional Criteria

7. **Urgency*:*** Many experts believe that if the spread of introduced *Spartina* is not controlled within the next few years, the greater than exponential spread of the plants and extensive hybridization with the native *Spartina foliosa* will preclude any chance for successful control in the future. If the Conservancy and its partners can address the problem appropriately in the short-term, long-term maintenance expenses can be avoided.
8. **Leverage:** The Conservancy's $650,000 contribution will be used to leverage up to $1,793,661 of CALFED funds and $ 50,000 as an augmentation to the first $275,000 CALFED grant for this project Additionally, grantees will contribute $87,000 in staff time, equipment and expertise. See the "Project Financing" section above.
9. **Innovation:** Many of the projects proposed for treatment to remove invasive *Spartina* involve use of a spray ball, a new technology that precisely targets herbicides to specific plants to avoid impacts to surrounding plants and animals. Also, the goal of some of the treatment projects is to establish the most effective and cost-effective combination of treatment techniques for application in subsequent treatment seasons.
10. **Readiness:** Grantees have worked in close collaboration with the Conservancy to prepare site-specific plans and are poised to implement them as soon as funds are available for expenditure.
11. **Cooperation:** The grantees will contribute a total of $87,000 in staff services, hours, and equipment

CONSISTENCY WITH SAN FRANCISCO BAY PLAN:

The Invasive *Spartina* Project: *Spartina* Control Program is consistent with the San Francisco Bay Plan, Section entitled "Marshes and Mudflats," Policy 3 (c) (page 9) that states: "the quality of existing marshes should be improved by appropriate measures whenever possible." The main purpose of this project is to remove invasive *Spartina* to improve the long-term quality of existing marsh habitat in the baylands of the San Francisco Estuary.

COMPLIANCE WITH CEQA:

Introduction

The California Environmental Quality Act (Public Resources Code Sections 21000 *et seq*., hereafter CEQA) requires consideration of potential environmental effects of California public agency actions and approvals, unless exempt. The National Environmental Policy Act (NEPA) requires the same for federal agency action and approvals. Accordingly, Conservancy and USFWS staff jointly prepared, through the consulting firm of Grassetti Environmental Consulting (and other ISP environmental consultants), the "Final Programmatic Environmental Impact Statement/Environmental Impact Report, San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program" (FEIS/R), attached as Exhibit 1, to evaluate the potential environmental consequences associated with implementation of the *Spartina* Control Program.

For purposes of the FEIS/R, the Control Program consists of a comprehensive, region-wide eradication program coordinated by the Conservancy and the USFWS, as co-lead

agencies, and other partner agencies, utilizing all available control treatment methods (manual, chemical and mechanical), with the choice of which method to use dependent on the characteristics of a given site and the nature of infestation. This is referred to as "Alternative 1" by the FEIS/R. As described previously in this staff recommendation, the FEIS/R also assesses the environmental impacts of two other treatment approaches: "Alternative 2" which is the same as Alternative 1, except that the use of chemical treatment is excluded; and "Alternative 3," which is a "no project" alternative that assumes that no future region-wide, coordinated treatment program occurs.

The FEIS/R is a *programmatic* Environmental Impact Report (Section 15168 of the CEQA Guidelines, 14 Cal. Code of Regulations, Sections 15000 *et seq.*, hereafter "Guidelines") in that it analyzes the potential effects of implementing treatment methods for a regional program, rather than the impacts of a single individual project. This program-level EIS/R identifies mitigation measures that will be applied to reduce or eliminate impacts at treatment locations. The Conservancy will use the FEIS/R to evaluate the Control Program for approval. The Conservancy, along with its state and local partner agencies, will also use the FEIS/R as a basis for "tiered" CEQA review and approval of individual treatment projects under the Control Program, which may or may not require further formal environmental documentation under CEQA (CEQA Section 21094; Guidelines Sections 15152 and 15168).

A Notice of Preparation for the EIS/R was distributed on April 6, 2001, followed by a scoping meeting on April 24, 2001. The Draft EIS/R was completed and made available for pubic review and comment and a Notice of Completion (NOC) was delivered with copies of the Draft EIS/R to the State Clearinghouse on April 17, 2003.

In connection with the public review process, the Conservancy provided copies of the Draft to over 180 organizations, including federal, state, and local agencies, legislators, environmental organizations, private landowners and associations, organizations affiliated with research, protection, or restoration activities related to the San Francisco Bay and Estuary and invasive species, and other organizations expressing an interest. In addition, four public meetings were held at various locations in the San Francisco Bay Area in April and May 2003 to provide information about the Control Program and the Draft EIS/R.

Sixteen comment letters were received during the 45-day public review period, which ended as of June 4, 2003. The comment letters and responses to the comments are incorporated in the FEIS/R as Chapter 10. Copies of the responses to the comments have been provided to state and local trustee and responsible agencies as of September 4, 2003, as required by CEQA Section 21092.5

The FEIS/R was completed in September 2003. Copies have been made available on request at the offices of the Conservancy and on the ISP internet website: wwwspartina.org. Additional copies will be made available at the Conservancy meeting. The FEIS/R and all underlying records and documentation are to be maintained at the offices of the Conservancy.

Significant Effects Reduced To Less Than Significant Levels By Mitigation

The FEIS/R provides a detailed analysis of potential environmental impacts and proposed mitigation measures to address the possible impacts associated with implementation of the Control Program. The FEIS/R identified possible significant effects of the project in the areas of Hydrology and Geomorphology, Water Quality, Biological Resources, Air Quality, Noise, Human Health and Safety, Visual Resources, Cultural Resources and Cumulative Impacts. With the exception of short-term significant impacts to the salt-marsh harvest mouse, tidal shrew, Californian clapper rail and California black rail and short-term impacts to visual resources, each of these potentially significant effects can be mitigated to a less-than-significant level by the imposition of mitigation measures recognized by the FEIS/R, as briefly outlined in "Summary Of Significant Effects That Are Reduced To Less Than Significant Levels By Mitigation Measures Identified By The FEIS/R" attached as Exhibit 4 to this staff recommendation and incorporated by this reference. (A detailed and complete discussion is found in the FEIS/R, Chapters 3 and 10, in particular.)

Since the potential significant effects of the Control Program can be mitigated by the imposition of the measures outlined above and described in detail in the FEIS/R, staff recommends that in approving the *Spartina* Control Program the Conservancy incorporate all FEIS/R mitigation measures. Consistent with the FEIS/R, staff also recommends that the Conservancy find that, as changed by incorporation of the mitigation measures, the Control Program or its operating conditions have been changed to avoid, reduce or mitigate the possible significant environmental effects on Hydrology and Geomorphology, Water Quality, Biological Resources, Air Quality, Noise, Human, Health and Safety, Visual Resources, Cultural Resources and Cumulative Impacts, except for short term effects to the salt-marsh harvest mouse, tidal shrew, Californian clapper rail and California black rail and short-term impacts to visual resources. CEQA Section 21801; Guidelines Section 15092 (a).

Unavoidable Significant Effects Of The Control Program

The FEIS/R analysis concluded that despite mitigation several effects of the Control Program potentially could not be reduced to less than significant levels. These are described below:

Effects of Treatment On Salt Marsh Harvest Mouse and Tidal Marsh Shrew: The possible effects of treatment activities would be limited to indirect effects primarily through marsh habitat degradation from vehicle access, crushing of mice under tracked vehicles, and destruction of high tide flood refugia. Because of the severe endangerment of southern subspecies of salt marsh harvest mouse any potential risk of "take" is significant. Mitigation measures which will limit these impacts include: minimize use of vehicles in potential habitat; restrict vehicle access to shortest, flagged pathways; restrict excavation equipment in marshes to mats or covers; use optimal combinations of treatment to minimize repeat entry; and schedule work soon after natural mass-mortality events caused by extreme high tides. Despite these required measures, potential "take" of salt marsh harvest mouse, through harassment, excessive habitat degradation, or other means, may occur despite avoidance and minimization measures. In that event, appropriate compensatory mitigation may include construction of pickleweed marshes to add habitat or provision of tidegates to choke tidal circulation to optimal levels needed to maintain habi-

tat quality. Ultimately, any compensatory mitigation will be determined in consultation on a site-specific basis with the USFWS and California Department of Fish and Game (DF&G).

Effects of Treatment on California Clapper Rail and California Black Rail: Because the clapper rail has been reported to nest in young tall stands of non-native Atlantic cordgrass and to seek cover under the higher stands of that cordgrass, eradication in areas where the non-native and hybrids dominate and have large stands would result in significant impacts to individual rails and the local population. In any areas in which clapper rails and non-native cordgrass of any type are located, treatment activities may also disturb them, risk nest destruction or remove habitat. These impacts can be minimized by incorporation of identified mitigation measures, but nonetheless remain significant (FEIS/R 3.3-40 to 3.3-41). In the event of unavoidable significant impacts in any specific site, despite the avoidance and minimization measures, compensatory mitigation will be determined in consultation USFWS and DF&G.

In the limited areas in which black rails are now most frequently located (northern San Pablo Bay and Suisin Marsh), salt-meadow cordgrass eradication activities (include crew movement) may temporarily disturb rails, and degrade habitat where eradication is near tidal creek banks. The impacts may potentially be unavoidable and significant, despite implementation of avoidance and minimization measures similar to those related to the clapper rail (FEIS/R, pp. 3.3-41 to 3-3.42).

Effects of Treatment on Visual Resources: The removal of stands of non-native cordgrass in areas where there is public access and visibility will unalterably change the views available to the public by replacing green vegetation with restored, unvegetated marsh or, during the process of herbicide eradication, with dead or dying non-native cordgrass. A treatment site's appearance may also change due to geomorphic alterations arising after treatment. These impacts are short-term, but can only be reduced and not fully minimized or eliminated by the proposed measure of placing educational signage at such sites informing the public of the reasons for the changed vista (FEIS/R pp. 3.7-9).

Statement Of Overriding Considerations

The Guidelines (Section 15093) require the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific benefits outweigh the unavoidable adverse environmental effects of the project, a Statement of Overriding Consideration may be adopted and the project approved, despite its adverse environmental effects. A Statement of Overriding Considerations consists of the agency's statement, in writing, about its specific reasons to support its approval, based on substantial evidence in the record, including the EIR and/or other information.

The overall environmental benefits of the Control Program as detailed in the FEIS/R, warrant the Conservancy's decision to approve the project even though not all of the environmental effects of the project are fully mitigated. First, unavoidable significant impacts to the four identified biological species (salt harvest mouse, tidal shrew, and rails) are limited and short-term, arising during and only as a result of treatment. Second, with

implementation of the Control Program it is anticipated that over the long term, as the non-native cordgrass is removed, the native cordgrass and other native vegetation will return to the areas from which they have been displaced, thereby creating additional species habitat. In addition, existing native habitat, that would otherwise be overrun, will be preserved. Third, after successful completion of the Control Program, restoration projects planned for the Estuary that will add further native habitat may then move forward without the risk of providing fertile ground for more extensive invasion of non-native *Spartina* and its hybrids. Fourth, in the absence of the coordinated and comprehensive Control Program, the FEIS/R concludes, based on best available science, that the spread of non-native cordgrass will expand, eventually creating an altered Estuary environment that will be less suitable for these four species and lead to more severe long-term impacts on them and on other species dependent on marsh and tidal areas. Finally, other severe long-term impacts that are associated with failing to control the spread of non-native cordgrass will be avoided, including increased accretion of the Bay, the potential for increased flooding, and the further change from mudflats, marsh, and open water to areas vegetated with non-native plants.

The unavoidable, significant impact on visual resources is likewise a short-term one. The change in vistas occurs only with and during treatment and the change is one-time. When balanced against the environmental benefits of the removal of an aggressive non-native plant that displaces native plants and impacts biological resources, there is little question that environmental concerns are best served by implementing the Control Program.

For these reasons, the Conservancy staff recommends that Conservancy find that the social, economic and other benefits or considerations of the Control Program outweigh the unmitigated or unavoidable environmental effects of the project, thereby warranting its approval.

Consideration Of Project Alternatives

CEQA requires that an EIR include a discussion of a reasonable range of alternatives to the proposed project or to the location of the project. If a lead agency finds that any of the project's significant environmental impacts cannot be avoided or substantially lessened by mitigation measures, the agency must, before approving the project, make written findings that the project alternatives are infeasible. CEQA Section 21081; Guidelines Section 15091(a)(3).

The EIR evaluated a reasonable range of alternatives to the proposed project. While three scenarios were extensively evaluated, the FEIS/R also considered four other possible alternative treatment scenarios but rejected them as either unable to achieve the project objectives of controlling and eradicating non-native cordgrass, lacking scientific support, or insufficiently flexible in approach as to allow for effective treatment with the least amount of environmental impact.

As discussed previously and as detailed in the FEIS/R, the Control Program is the most likely to achieve the project objectives with the least impact on the environment. Alternative 2, treatment without the use of herbicide, would result in all of the same significant, unavoidable impacts to biological species and to visual resources associated with the Control Program. Moreover, impacts under Alternative 2 to the endangered species are

likely to be longer in term and more severe, given the fact that Alternative 2, by definition, relies exclusively on the methods—mechanical and manual—that take longer to achieve effective control and result in the greatest habitat destruction and the most disturbance or potential "take" by access. In addition, the best prediction based on available science is that Alternative 2 is less likely to succeed in effective eradication and control, since it may not be able to keep pace with the ongoing spread of non-native cordgrass. Alternative 3 presents an even more gloomy outlook: while it may avoid some short-term impacts, it provides few long-term benefits and in the end is likely to result in the failure of control of the non-native species and the severe consequences that are expected to be associated, including loss of species, habitat destruction, and significant geomorphic changes to the Estuary, as detailed above and in the FEIS/R. Since neither Alternative 2 nor Alternative 3 will achieve the project objectives, and since both will result in greater environmental impact and will not produce the same environmental benefit, staff recommends that the Conservancy find that these alternatives are infeasible.

Mitigation Monitoring and Reporting Program

Under CEQA. whenever measures are required and adopted in order to mitigate or avoid the significant effects on the environment of an approved project, the agency must also prepare and adopt a mitigation monitoring or reporting program designed to ensure compliance with the required mitigation during project implementation (CEQA Section 21081.6). Staff has prepared a Mitigation Monitoring and Reporting Program for this project, attached as Attachment K to the FEIS/R. The proposed Conservancy resolution for this project serves to adopt the program.

Environmental Documentation – Grants for Demonstration Projects

A subsequent activity that follows under a program that has been assessed pursuant to CEQA must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared. If the agency proposing the later activity finds that its effects and required mitigation to reduce those effects were already identified and considered under the program EIR, the activity can be approved with no further environmental documentation [Guidelines Section 15168(c)]. The Guidelines suggest the use of a written checklist or similar device to document the evaluation of the activity to determine whether the environmental effects of the operation were covered in the program EIR.

Each of the proposed demonstration projects has a prepared site-specific plan, describing the site and identifying the precise treatment activities proposed. In addition, each has been assessed by use of a checklist to determine whether the effects of those activities and the mitigation required have been considered by the FEIS/R. This documentation is attached as Exhibit 5. In each case, the conclusion is that the program FEIS/R did consider the effects associated with the demonstration project and there are no new mitigation measures required. Conservancy staff recommends that the Conservancy adopt a finding to that effect.

Finally, upon Conservancy certification of the FEIS/R and approval of the proposed project, Conservancy staff will prepare and file a Notice of Determination.

EXHIBIT 1

Final Programmatic Environmental Impact Statement/Environmental Impact Report,

San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program

Distributed to Board Members only;
available for public review at Conservancy office and at the Board Meeting.

EXHIBIT 2

October 28, 1999 and January 25, 2001 Staff Recommendations

COASTAL CONSERVANCY

Project Summary
October 28, 1999

INTRODUCED *SPARTINA* ERADICATION

PHASE I–STAGE I

File No. 99-054
Project Managers: Maxene Spellman/Nadine Hitchcock

RECOMMENDED ACTION: Authorization to: 1) accept $250,000 from the U.S. Fish and Wildlife Service (USFWS) and $59,900 from the National Fish and Wildlife Foundation to support this project and (2) disburse an amount not to exceed $305,900 toward implementation of Phase I–Stage I of the Introduced Spartina Eradication Project.

LOCATION: The baylands of the nine counties that bound the San Francisco Bay and the lower Delta in Sacramento County (Exhibit 1)

PROGRAM CATEGORY: San Francisco Bay Area Conservancy

ESTIMATED COST:

PHASE I – Stage I:	
CALFED (USFWS)	$120,000
National Fish and Wildlife Foundation	48,900
Coastal Conservancy (HCF)	137,000
Total Project Costs—Phase I–Stage I	**$305,900**
PHASE I – Stage II, Future Authorization:	
CALFED (USFWS)	$130,000
National Fish and Wildlife Foundation	11,000
In-Kind Contributions (equipment, facilities, personnel)	394,500
Total Project Costs—Phase I–Stage II	**$535,500**
TOTAL PROJECT COST	**$841,400**

PROJECT SUMMARY: This project uses a regional approach to address perhaps the most serious adverse impacts ever to threaten the San Francisco baylands and associated habitats. Of all the introduced plant species to the region, the non-native cordgrasses have the potential to significantly transform the mudflats and marshes

throughout the region, greatly reducing habitat for native and special status species, and creating flood hazards. Many experts believe that if the spread of introduced *Spartina* is not controlled within the next few years, the battle will be lost. *Spartina,* which exists on about 1,000 acres of San Francisco bayland, will spread into approximately 40,000 acres of wetland and 29,000 acres of tidal mudflats. This process has occurred as close by as Humboldt Bay and as far away as Puget Sound in Washington, and in China, New Zealand, and Britain.

The U.S. Fish and Wildlife Service considers the spread of introduced *Spartina* to be a serious threat to the recovery and survival of several threatened and endangered species that reside in the baylands. They have considered the need to prohibit new tidal restoration projects until the introduced *Spartina* populations can be safely managed. The U.S. Fish and Wildlife Service, East Bay Regional Parks District, Alameda County Flood Control Department, and other public landowners have undertaken individual control efforts, resulting in costly duplication of efforts that include separate project funding, environmental compliance and permitting, research, testing of control methods, and public outreach. Re-invasion has occurred in controlled areas because of non-controlled neighboring infestations.

Team *Spartina,* an ad hoc association comprised of over a dozen public agencies and institutions that are collaborating to develop a regional approach to the threats posed by introduced *Spartina,* requested the Coastal Conservancy to administer this grant. The Team identified the Conservancy as the only entity that has a regional jurisdiction and extensive involvement in tidal restoration projects. The recommended Conservancy disbursement, Phase I–Stage I, would result in development of a regionally coordinated program with the primary objectives of preventing further spread of the introduced *Spartina* to the North Bay, Delta, and South Bay and to newly developed restoration projects, where it is most opportunistic. Phase I–Stage II involves using $130,000 of CALFED funds to continue to experiment and apply the most effective methods for eradication/control; and using $11,000 of the National Fish and Wildlife Foundation funds to initiate control of invasive *Spartina* in the South Bay.

The management structure and plan for the intensive eradication efforts developed in Phase I are needed for Phase II to eliminate or maintain introduced *Spartina* populations to a non-threatening level. Phase I is expected to take just over 1 year, and Phase II is expected to take 2-3 years. CALFED has indi-

cated that, if successful, this project will result in additional CALFED funds for Phase II.

As proposed for Phase I–Stage I, the Conservancy will assist Team *Spartina* members by providing required matching funds and by disbursing funds to three public agencies and hiring two contractors. Phase I–Stage I of the Introduced *Spartina* Eradication Project (ISEP) provides for the development of:

- a Mapping, Monitoring, and Introduced *Spartina* Assessment Plan;
- an Introduced *Spartina* Eradication Management and Implementation Plan;
- development and implementation of a public outreach and education program;
- research to refine control and eradication techniques; and
- preparation of environmental review and permit documents for eradication/control work that is proposed for Phase I–Stage II and Phase II of this project.

The environmental review documents will be completed by the Conservancy prior to disbursement of funds for Phase I–Stage II. The focus of Stage II will be limited eradication in the South Bay, and continued outreach and assistance to landowners wherever colonies of introduced *Spartina* continue to be targeted. The objective of Phase II will be to control/eradicate invasive species of *Spartina* to a manageable level throughout the Bay.

This project implements a priority recommendation of the San Francisco Estuary Project's Comprehensive Conservation and Management Plan (1994) which is to develop species-specific management plans to control or eliminate undesirable non-indigenous species. It further implements a recommendation of the Baylands Ecosystem Habitat Goals (Goals) report (1999) to develop a systematic and coordinated program of introduced *Spartina* control prior to undertaking extensive tidal restoration.

REVISED

COASTAL CONSERVANCY

Staff Recommendation
October 28, 1999

INTRODUCED SPARTINA ERADICATION

PHASE I–STAGE I

File No. 99-054
Project Managers: Maxene Spellman/Nadine Hitchcock

STAFF RECOMMENDATION: The resolution for this project has been revised as follows:

Staff recommends that the State Coastal Conservancy adopt the following Resolution pursuant to Sections 31160-31164 and 31104 of the Public Resources Code:

> "The State Coastal Conservancy hereby authorizes the acceptance of two hundred fifty thousand dollars ($250,000) from the U.S. Fish and Wildlife Service and fifty-nine thousand nine hundred dollars ($59,900) from the National Fish and Wildlife Foundation; and disbursement of an amount not to exceed $305,900 in the form of grants to the San Francisco Estuary Institute, the U.S. Department of Agriculture, and the University of California at Davis, and for services necessary for completion of Phase I–Stage I of the Introduced *Spartina* Eradication Project."

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 Public Resources Code Section 31160 *et seq.* regarding the Conservancy's mandate to address the resource and recreational goals of the San Francisco Bay Area;
> 2. The proposed authorization is consistent with the Interim Project Selection Criteria and Guidelines adopted by the Conservancy on May 27, 1999;
> 3. Acceptance of the $250,000 grant from the U.S. Fish and Wildlife Service and the $59,900 grant from the National

Fish and Wildlife Foundation is consistent with Public Resources Code Section 31104, which authorizes the Coastal Conservancy to accept funds from public and private sources; and

4. The San Francisco Estuary Institute is a "nonprofit organization" under Public Resources Code Section 31013."

STAFF DISCUSSION:

Project Description: Non-native *Spartina* was first brought into the San Francisco Bay tidal wetlands in the 1970s, and has rapidly invaded marshes where it competes with native plants. The robust *Spartina alterniflora*, for example, grows taller that native *Spartina* allowing it to withstand greater inundation of water. Its spread could convert valuable mudflats and small tidal channels to dense marsh of low habitat value for many species, including the protected California clapper rail. Introduced *Spartina* also partially fills flood control channels to reduce flow capacity. Introduced *Spartina* is causing significant ecological and economic impacts. This project proposes to significantly reduce or eliminate the introduced *Spartina* throughout the Bay, with the primary objectives of preventing further spread into the North Bay and Delta and to newly restored tidal marshes, where it undermines restoration objectives.

This authorization will provide for these implementation steps on a regional basis of Phase I–Stage I of the Introduced *Spartina* Eradication Project (ISEP):

- Monitor and map existing and new populations of introduced *Spartina.*
- Identify landowners on whose land it is determined that eradication or control of introduced *Spartina* is needed.
- Research effective methods for eradication.
- Create a public education and outreach program.
- Prepare permits and environmental review documents (CEQA) for eradication/control work that is proposed for Phase I–Stage II.

These efforts will result in preparation of the Mapping, Monitoring and Introduced *Spartina* Assessment Plan (Assessment Plan) and the Introduced *Spartina* Eradication Management and Implementation Plan (Management Plan).

The Conservancy will enter into two contracts and provide two grants for the preparation of these plans. The Conservancy will contract out a project coordinator position to oversee Phase I–Stage I, identify landowners, conduct public outreach, establish rapid response control strategies, and oversee the preparation of environmental compliance documents. The Conservancy will enter into a separate contract with a field operations coordinator who will identify and monitor colonies of invasive *Spartina*, make extensive landowner contacts, and coordinate with the research and mapping teams (see below). The Conservancy also will fund the purchase of equipment needed for field operations such as a Global Positioning System (GPS). A GPS can quickly record the precise location of invasive plants as they are found in the field.

This authorization will also provide for a grant to the San Francisco Estuary Institute (SFEI) for mapping, monitoring and development of a Web site for public outreach. SFEI will use its Bay Area EcoAtlas for base maps, produce aerial photography, and will update its existing invasive plant 'point' map. SFEI also will design protocols for monitoring targeted areas.

The Conservancy will provide two research grants under this disbursement. One will go to the U.S. Department of Agriculture's Weed Control Lab to study existing and new control and eradication techniques in order to find what works best. Among the methods to be studied will be application of registered herbicides, mowing, burning, covering, and digging. Successful methods applied in the State of Washington will also be evaluated for appropriate use in San Francisco Bay. The other research grant will be given to U.C. Davis to study the hybrids of *Spartina alterniflora* and native *Spartina* to determine their dispersal and ability to compete with native plant species. Team *Spartina* members will provide in-kind contributions, and will convene biannually to advise, review reports, and assess the progress of the project.

Phase I–Stage II and Phase II will require separate board authorizations. In addition to refining the Assessment and Management Plans, Phase I–Stage II will involve a pilot project to eradicate invasive *Spartina* on 75 acres in the South Bay. Phase I–Stage II will also focus on reaching out to landowners in order to educate and offer assistance for control/eradication of targeted invasive *Spartina.* The permits and environmental review completed in Stage I will be utilized in Stage II to begin implementing eradication on targeted sites. Stage II will involve eradication/control work by enlisting not only private landowners but also public agencies that routinely apply meth-

ods to control invasive species (*e.g.*, the East Bay Regional Park District and California Department of Fish and Game).

Project Financing: PHASE I – Stage I:

CALFED (USFWS)	$120,000
National Fish and Wildlife Foundation	48,900
Coastal Conservancy (HCF)	137,000
Total Project Costs—Phase I–Stage I	**$305,900**

PHASE I – Stage II, Future Authorization:

CALFED (USFWS)	$130,000
National Fish and Wildlife Foundation	11,000
In-Kind Contributions (equipment, facilities, personnel)	394,500
Total Project Costs—Phase I–Stage II	**$535,500**
TOTAL PROJECT COST	**$841,400**

Approval of this staff recommendation would authorize the Conservancy to accept $250,000 from the U.S. Fish and Wildlife Service, which is the administrator of the CALFED funds, and $59,900 from the National Fish and Wildlife Foundation, and to disburse $305,900 in the form of three grants and two contracts for Phase I–Stage I of a project for a regionally coordinated invasive species eradication and control program for introduced cordgrasses (*Spartina*). Disbursement of the remaining project funds will require a separate board authorization.

Site Description: Phase I–Stage I of the ISEP, including strategic planning, mapping, monitoring, experimentation, research for eradication of introduced *Spartina*, and environmental review, will be conducted throughout the baylands of the nine counties that bound San Francisco Bay and the lower Delta in Sacramento County.

Project History: Several species of non-native cordgrasses were introduced in the southern San Francisco Bay in the 1970s for use in tidal restoration projects. The introduced cordgrasses rapidly invaded intertidal habitats where they compete with native vegetation and can potentially transform open-mud flats into dense monocultures of tall grass. *Spartina alterniflora* has spread to approximately 1,000 acres, including most recently in Richardson Bay, Marin County. Other species present in the bay can potentially pose a similar problem as they have in Humboldt Bay and other parts of the world where entire regions have been transformed by these species. Also, recent research has indicated that non-native spe-

cies of *Spartina* hybridize with the native, *Spartina foliosa*, complicating control efforts.

Significant adverse impacts are expected to occur from the spread of introduced *Spartina* and the hybrids:

- degradation of habitat for four federal and state endangered species;
- physical alteration of the wetlands due to greater sediment accretion and stabilization;
- loss of migratory shorebird feeding habitat, including unvegetated mudflats;
- clogging of navigable waterways;
- constriction of flood control channels; and
- increased need for mosquito abatement measures.

In 1998, over 20 agency and institutional interests formed the *Spartina* Team to formulate a regional strategy for eradicating introduced *Spartina* from San Francisco Bay. The recommended strategy is believed to have a high probability of success providing implementation begins this year.

The Conservancy applied for and was awarded a $250,000 CALFED Ecosystem Restoration grant for the Introduced *Spartina* Eradication Project. The required 50 percent matching funds ($137,000) is from the Conservancy's Habitat Conservation Fund. The Conservancy also applied for and was awarded a $59,900 National Fish and Wildlife Foundation grant for the mapping, monitoring, and eradication of introduced *Spartina* on 75 acres in the South Bay. These two grants will be split between Stages I and II of the first Phase of the project. Nearly $400,000 of in-kind contributions is included from seven agencies or institutions. These include the East Bay Regional Park District, the San Francisco Estuary Institute, U.C. Davis, the USDA Agricultural Service, the U.S. Fish and Wildlife Service, California Department of Fish and Game, and Alameda County Flood Control.

PROJECT SUPPORT: This project is supported by the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and over 20 other agencies and institutions represented by Team *Spartina* (see Exhibit 3). Exhibit 2 lists Team *Spartina* members.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The project is consistent with Section 31162 of the Public Resources Code which authorizes the Conservancy to undertake projects and award grants in the nine-county San Francisco Bay area to public and private agencies and organizations.

Consistent with Public Resources Code Section 31162(a), the project site is located within the nine-county San Francisco Bay Area, and will help achieve the goals of the San Francisco Bay Area Conservancy Program (Sections 31160 *et seq*.) by protecting and restoring tidal marshes, which are natural habitats that are of regional importance.

The Conservancy's acceptance of a U.S. Fish and Wildlife Service grant of $250,000 and a National Fish and Wildlife Foundation grant of $59,900 is consistent with Public Resources Code Section 31104, which authorizes the Conservancy to accept grants and other financial support from public and private sources.

In authorizing a grant to the SFEI, a nonprofit organization defined in Section 31013, this project is consistent with Section 31116(a), which authorizes the Conservancy to make grants to nonprofit organizations.

CONSISTENCY WITH CONSERVANCY'S PROGRAM GUIDELINES:

The proposed project is consistent with the Conservancy's interim Program Guidelines adopted May 27, 1999, in the following respects:

Required Criteria

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Promotion of the Conservancy's Statutory Programs and Purposes: The project will help the Conservancy carry out purposes of Division 21 of the Public Resources Code, Chapter 4.5, by protecting and restoring bayland and associated habitats in the nine county bay region.

Consistency with Purposes of the Funding Source: The Conservancy's matching funds are anticipated to be provided from the Conservancy's 99/00 Habitat Conservation Fund, which may be used for restoration and/or enhancement of wetlands.

Support from the Public: The project is supported by regulatory agencies, public agencies and special districts, nonprofit organizations, and scientists that work to protect and restore wetlands. It is also supported by flood control districts that

anticipate adverse impacts from introduced *Spartina* clogging drainage ways.

Need: San Francisco Bay has lost up to 93 percent of its original tidal marsh habitat. Fifty-five percent of the threatened and endangered species of the Bay Area are found in the tidal marshes. Introduced *Spartina* threatens to convert a significant portion of the open mudflats and tidal marshes to a monoculture which will reduce habitat for the species endemic to the area.

Additional Criteria

Urgency: Many experts believe that if the spread of introduced *Spartina* is not controlled within the next few years, the battle will be lost. *Spartina* will spread into approximately 40,000 acres of wetland and 29,000 acres of tidal mudflats. This process has occurred as close by as Humboldt Bay and as far away as Puget Sound in Washington, and in China, New Zealand, and Britain.

Greater-than-local Interest: Introduced *Spartina* threatens to move up the delta, and down the coast to southern California. In the San Francisco Bay, introduced *Spartina* threatens to displace listed state and federal special status species, such as the endangered California clapper rail, California black rail, and the salt marsh harvest mouse.

Leverage: The Conservancy's $137,000 contribution will be used to leverage $250,000 of CALFED funds. In-kind contributions of personnel and equipment will total $394,500 from the following project participants: East Bay Regional Park District, the San Francisco Estuary Institute, U.C. Davis, the USDA Agricultural Service, the U.S. Fish and Wildlife Service, California Department of Fish and Game, and Alameda County Flood Control.

Project Support: Strong support for this project is demonstrated by the many contributing agencies. In addition to agencies identified under "Leverage" and "Cooperation," the following organizations also will participate: The Don Edwards San Francisco Bay National Wildlife Refuge, the Alameda County Public Works Department, the Bay Area County Commissioners, the California Department of Fish and Game, the Alameda Department of Agriculture, and the Benicia State Recreation Area. Also, over 100 scientists who assisted in the preparation of the *Baylands Ecosystem Habitat Goals* report, in which the eradication of introduced *Spartina* is given high priority, support this project.

Cooperation: The Conservancy will enter into agreements with two public agencies, a nonprofit organization, and two independent contractors to complete Phase I–Stage I: The San Francisco Estuary Institute will conduct the mapping, monitoring, and assessment; a project coordinator will cooperate with a field operations coordinator to identify targeted sites, educate landowners, and complete environmental review; and the USDA Aquatic Weed Lab and U.C. Davis will conduct research, and will coordinate with the project coordinator and the field operations coordinator. Phase I–Stage II will consist of a coordinated effort and in-kind services by seven local, state, and federal agencies, and one nonprofit organization. Additional public and private agencies will be added to this list as project implementation expands in Phase II.

CONSISTENCY WITH SAN FRANCISCO BAY PLAN: The proposed project is consistent with the Bay Conservation Development Commission's San Francisco Bay Plan policies on Fish and Wildlife (page 9):

> "The benefits of fish and wildlife in the Bay should be insured for present and future generations of Californians. Therefore, to the greatest extent feasible, the remaining marshes and mudflats around the Bay . . . should be maintained"
>
> "Specific habitats that are needed to prevent the extinction of any species, or to maintain or increase any species that would provide substantial public benefits, should be protected."

COMPLIANCE WITH CEQA: The mapping, monitoring, and assessment aspects of Phase I–Stage I of the project constitute feasibility and planning studies for possible future actions which are statutorily exempt from CEQA's EIR or Negative Declaration requirements under 14 Cal. Code Regs. Section 15262. The research activities of Phase I are categorically exempt from CEQA's EIR and Negative Declaration requirements because it will consist of "basic data collection, research, experimental management and resource evaluation activities which [will] not result in a serious or major disturbance to an environmental resource." (14 California Code Regulations, Section 15306)

COASTAL CONSERVANCY

Staff Recommendation
January 25, 2001

CONSENT ITEMS

File Nos. 00-115, 99-054

STAFF RECOMMENDATION: Staff recommends that the State Coastal Conservancy adopt the following Resolution pursuant to Sections 31000 *et seq.* of the Public Resources Code:

"The State Coastal Conservancy hereby:

a. [*omitted*]

b. 1. Disbursement of an amount not to exceed $200,000 in Conservancy funds toward completion of Phase I of the Introduced *Spartina* Project, which includes mapping, monitoring, research, inter-agency coordination, public outreach, and geographical expansion of the Project;

2. Acceptance of a grant of up to $1,793,661 from CALFED for this project; and

3. Disbursement of up to $1,366,661 of the CALFED grant toward completion of Phase I and site-specific pre-implementation work for Phase II over the next two years.

The anticipated grantees and contractors are listed in Exhibit 4 to the accompanying Project Synopsis b., which Exhibit is incorporated herein."

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:

a. [*omitted*]

b. Acceptance and disbursement of funds for the Introduced *Spartina* Project is consistent with the resolution, findings and discussion accompanying the Conservancy action of October 28, 1999, attached as Exhibit 2 to the accompanying current Project Synopsis b."

INTRODUCED *SPARTINA* PROJECT
2001 CALFED GRANT

COASTAL CONSERVANCY

Project Synopsis b.
January 25, 2001

INTRODUCED *SPARTINA* PROJECT

2001 CALFED GRANT

File No. 99-054
Project Manager: Maxene Spellman

RECOMMENDED ACTION: Authorization to: 1) disburse an amount not to exceed $200,000 in Conservancy funds toward completion of Phase I of the Introduced *Spartina* Project, which includes mapping, monitoring, research, inter-agency coordination, public outreach, and geographical expansion of the Project; 2) accept a grant of up to $1,793,661 from CALFED for this project; and 3) disburse up to $1,366,661 of the CALFED grant toward completion of Phase I and site specific pre-implementation work for Phase II over the next two years. The anticipated grantees and contractors are listed in Exhibit 4, which is incorporated herein.

LOCATION: The baylands of the nine counties that bound the San Francisco Bay and lower Delta in Sacramento County.

PROGRAM CATEGORY: San Francisco Bay Area Conservancy

ESTIMATED COST:

Coastal Conservancy	$ 200,000
CALFED	1,793,661
TOTAL COST	**$1,973,661**

Since 1999 the introduced *Spartina* Project has been supported by $1,026,650 in grants and other funding, including $286,250 from the Conservancy. It is anticipated that the Conservancy will receive CALFED Ecosystem Restoration Program 2001 funds in the amount of $1,793,661 for continued work on this project as confirmed in the November 28, 2000 letter from the CALFED Bay-Delta Program (Exhibit 1). The $200,000 in Conservancy funding currently proposed is expected to come from the San Francisco Bay Conservancy Program (Bay Program) through a FY00-01 appropriation from the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000 (Proposition 12).

PROJECT SUMMARY: The Conservancy first authorized the disbursement of $137,000 of Conservancy funds (HCF) on October 28, 1999 (Exhibit 2) for Phase I of the Introduced *Spartina* Project (ISP), and $149,250 of Conservancy funds (Bay Program) on June 22, 2000 for the preparation of a joint CALFED/Conservancy EIR/EIS (Exhibit 3). The proposed authorization would fund continued Phase I work, including mapping and monitoring for the project. The proposed authorization would also allow the Conservancy to geographically expand the ISP by augmenting scientific research and public outreach to increase chances for a successful prevention of the further spread of the introduced *Spartina* in the San Francisco Bay intertidal zone and delta. The Conservancy's contribution of $200,000 would match a grant of up to $1,793,660 that the Conservancy is expected to receive from CALFED's Ecosystem Restoration Program for an expanded effort to build a bay-wide infrastructure to significantly reduce existing populations, and detect and prevent future *Spartina* invasions. This CALFED grant will fund the completion of Phase I, site-specific pre-implementation work for Phase II, and future phases of the greater ISP.

The spread of introduced *Spartina* presents perhaps the most serious danger to ever threaten the existence of the San Francisco baylands. The U. S. Fish and Wildlife Service Draft Recovery Plan for the Tidal Marshes of Central and Northern California ranks eradication of the exotic *Spartina alterniflora* as a number 1 recovery action needed to prevent listed species' forseeable slide towards extinction. The threat of regional loss of tidal flat habitat and the recovery of endangered species is emphasized as the reason for the highest possible ranking. The Conservancy is coordinating a regional effort to reverse the spread of the introduced cordgrass through Team *Spartina*, an ad hoc association of agencies and institutions.

Funding History:

The Conservancy has previously authorized two expenditures of Conservancy funding as follows:

- $137,000 to match $250,000 from CALFED and $59,000 from the National Fish and Wildlife Foundation (NFWF) for Phase I to establish a regionally coordinated effort; and
- $149,250 to match $25,000 of existing CALFED funding, $5,750 of existing NFWF funding, and $20,000 of new funding from the U.S. Fish and Wildlife Service (FWS) for the preparation of environmental documentation.

The Conservancy has also expended $7,000 to hire an environmental consultant to assist in devising a strategy for environmental compliance, and $7,000 to hire a field assistant to assist in the identification and mapping of invasive *Spartina*.

Project Status:

- The Conservancy has entered into agreements with the FWS and NFWF to establish a region-wide ISP according to approved budgets for project coordination, public outreach, research, mapping, monitoring and planning;
- The Conservancy has completed interagency agreements with the University of California at Davis (UC Davis) and the United States Department of Agriculture (USDA) to conduct research for the best possible control techniques, monitoring techniques, genetic testing and continued research on hybridization. UC Davis has completed extensive genetic sampling and some research to better identify the distribution and impact of hybrid *Spartina* on native populations. USDA is conducting experimentation with three herbicides and a new application technique in which herbicides would be applied using a wiper blade.
- Project and field coordinators have accomplished the following:
    1. Conducted surveys and field visits to assist agencies, including FWS, the California Department of Parks and Recreation, and multiple municipalities, to identify and assess their invasive *Spartina* populations;
    2. Together with the San Francisco Estuary Institute, developed a suitable mapping protocol for ISP and are conducting ongoing vegetation surveys to map the invasive *Spartina* distribution and net acreage of invasive *Spartina* populations in the South Bay, Central Bay, and portions of the North Bay;
    3. Produced a public outreach brochure which is included as Exhibit 5;
    4. Under the direction of the Conservancy, communicated the urgency and importance of controlling introduced *Spartina* to a long list of nonprofit organizations, regulatory agencies, and other stakeholders; and
    5. Applied to CALFED, on behalf of the Conservancy, for a grant of 1.9 million dollars from the CALFED Ecosystem Restoration Program to continue and expand

ISP. Staff anticipates receiving the grant in the amount of $1,793,661 (Exhibit 1);

- Hired a field assistant to perform site visits, collect samples, and provide technical and logistical assistance and species identification;
- Hired an environmental consultant to assess alternative CEQA compliance strategies for implementation of the ISP; and
- Hired an environmental consulting firm to produce a joint EIR/EIS for ISP. The Notice of Preparation and Initial Study are completed. The anticipated completion date for the EIR/EIS is July 31, 2001.

Need for Additional Funding:

The long-term goal of ISP is to eradicate invasive *Spartina* in the San Francisco Bay intertidal zone. Resource managers and scientists familiar with the invasive *Spartina* issues anticipate that this will be achieved in approximately ten years. The new grant expected from CALFED, with matching funds from the Conservancy, will support efforts toward that end. It will permit the completion of planning, ISP Phase I, as well as continued monitoring, research and public outreach during implementation of control work, ISP Phase II. These efforts will build on and expand ISP's accomplishments in 1999-2000.

Funds will be available to provide ongoing support for ISP staff including the hiring of a second field coordinator and a public outreach coordinator. Funding will provide for focused research projects by UC Davis, the USDA and the Point Reyes Bird Observatory. For example, it is not known what is the best protocol to restore appropriate vegetation for marshes where large amounts of hybrid populations are removed; nor is the potential threat to shorebirds fully understood. Additional research on these issues will result in the best possible recommendations of priority sites targeted for control efforts.

Funds will also be used to conduct site-specific pre-implementation work for Phases I and II. In Benecia, for example, site-specific work included searching for and identifying introduced *Spartina* on several hundred acres, conducting separate site visits to coordinate with USFWS staff, who advised on the presence of endangered species, and coordinating site visits with the California Department of Parks and Recreation, the landowner, and USDA staff to discuss the best control techniques. Also, the field coordinator spent a day using Global

Positioning System to enter new data on aerial photographs to create the first map ever done on the site.

A portion of the existing and anticipated CALFED funds will be made available for implementation of ISP Phase II, which will assist agencies and landowners in the control of invasive *Spartina* on their property. However, no funds will be disbursed for control/eradication work for Phase II implementation until environmental review is completed and a separate board authorization is obtained.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION: The project is consistent with Section 31162 of the Public Resources Code which authorizes the Conservancy to undertake projects and award grants in the nine-county San Francisco Bay area to public and private agencies and organizations.

Consistent with Public Resources Code Section 31162(a), the project site is located within the nine-county San Francisco Bay Area, and will help achieve the goals of the San Francisco Bay Area Conservancy Program (Sections 31160 *et seq.*) by protecting and restoring tidal marshes, which are natural habitats of regional importance. This project, the regional effort to reduce and control the introduced *Spartina*, will help achieve the goals of the San Francisco Bay Area Conservancy Program by assisting in the protection, restoration, and enhancement of natural habitats.

CONSISTENCY WITH CONSERVANCY'S PROGRAM GUIDELINES: The proposed project is consistent with the Conservancy's interim Program Guidelines adopted May 27, 1999, in the following respects:

Required Criteria

Promotion of the Conservancy's Statutory Programs and Purposes: The project will help the Conservancy carry out purposes of Division 21 of the Public Resources Code, Chapter 4.5, by protecting and restoring bayland and associated habitats in the nine county bay region.

Consistency with Purposes of the Funding Source: ISP will implement the goals of the San Francisco Bay Area Conservancy Program, consistent with the appropriation of Proposition 12 funds. This project will have no effect on air quality.

Support from the Public: This project is supported by regulatory agencies, public agencies and special districts, nonprofit organizations, and scientists that work to protect and restore wetlands. This broad support is demonstrated by the numerous Letters of Support as part of the original October 28, 1999 Staff Recommendation.

Need: San Francisco Bay has lost up to 93 percent of its original tidal marsh habitat. Fifty-five percent of the threatened and endangered species of the Bay Area are found in the tidal marshes. Introduced *Spartina* threatens to convert a significant portion of the open mudflats and tidal marshes to a monoculture which will reduce habitat for the species endemic to the area.

Additional Criteria

Urgency*:* Many experts believe that if the spread of introduced *Spartina* is not controlled within the next few years, the battle will be lost.

Greater-than-local Interest: Introduced *Spartina* threatens to move up the delta, and down the coast to southern California. In the San Francisco Bay, introduced *Spartina* threatens to displace listed state and federal special status species, such as the endangered California clapper rail, California black rail, and the salt marsh harvest mouse.

Leverage: The Conservancy's $200,000 contribution will be used to leverage up to $1,793,661 of CALFED funds.

COMPLIANCE WITH CEQA: The mapping, monitoring, assessment, and planning aspects of Phases I and II of the project constitute feasibility and planning studies for possible future actions which are statutorily exempt from CEQA's environmental review requirements under 14 California Code of Regulations Section 15262. In addition, the mapping, monitoring, and research activities of Phases I and II are categorically exempt under 14 California Code of Regulations, Section 15306 because they consist of "basic data collection, research, experimental management and resource evaluation activities which [will] not result in a serious or major disturbance to an environmental resource."

EXHIBIT 4

SUMMARY OF SIGNIFICANT EFFECTS THAT ARE REDUCED TO LESS THAN SIGNIFICANT LEVELS BY MITIGATION MEASURES IDENTIFIED BY THE FEIS/R

1. Hydrology and Geomorphology

a. *Increased Erosion or Deposition of Sediments at Sites of Eradication*

Increased erosion following removal of invasive *Spartina* will be mitigated by use of temporary physical erosion controls or, in mud flats, armoring with heavier natural material (shell fragments). Erosive effects on tidal creeks will be limited by monitoring after removal of non-native cordgrass and revegetation with sprigs of native cordgrass once adequate channel dimensions are restored by erosion.

b. *Erosion or Topographic Change of Marsh and Mudflat by Vehicles*

Impacts from vehicles used in eradication will be reduced to less than significant levels by minimizing their use, using boat access where significant erosion or sedimentation are likely and using mats on marsh surfaces when feasible. Where the use of mats is not possible, trips will be minimized and paths marked for least impact.

c. *Remobilization of Sand in Cordgrass–Stabilized Beaches*

Loss of sand beach after eradication will be mitigated though the use of one or both of the two following techniques, as appropriate to the specific conditions: 1) sand nourishment (artificial placement of suitably textured sand); or 2) repair or replacement of rock slope protection or other existing erosion protection structures.

d. *Potential Spread of Invasive Cordgrass via Sediment Disposal*

Impacts from treatment using removal of sediments (*e.g.*, dredging) will be reduced to less than significant by disposal of sediments in upland areas or at depth in diked, hypersaline non-tidal sites destined for tidal marsh restoration.

2. Water Quality

a. *Degradation of Water Quality Due to Herbicide Application*

The potential for water quality degradation will be reduced to less than significant through: use of methods and timing that minimize application directly to water (apply directly on plants, at low or receding tides); application by licensed applicators and in compliance with labeling; conformity with NPDES permit requirements and an approved monitoring plan, including toxicological studies; and utilizing adaptive management strategies to refine herbicide solution and application techniques and decrease impacts.

b. *Herbicide Spills*

Precautions to limit or reduce the potential for herbicide spills are required as mitigation, including active supervision by licensed applicators, storage of herbicides in accordance with approved spill prevention and containment plan; and confinement of on-site mixing and filling operations to areas bermed or otherwise protected to minimize spread or dispersion of spilled herbicide or surfactants into surface waters.

c. *Fuel or Petroleum Spills*

These potential impacts will be minimized by restricting fueling and servicing of vehicles and equipment and storage of fuel to offsite locations, except for emergencies and fueling of hand-held gas-powered equipment which may be fueled in the field using precautions to minimize or avoid fuel spills within the marsh, and by implementing other, detailed best management practices that will be specified in project-specific Waste Discharge Requirements.

d. *Contaminant Remobilization*

In connection with treatment involving dredging or excavation of bay mud, the following measures will be used to mitigate impacts: before treatment, a preliminary assessment for potential contamination shall be undertaken; if the assessment determines a potential for historic sediment contamination, sediment sampling and analysis will be implemented; if contaminants are present at levels of possible concern, an alternative treatment method (that does not disturb sediment) will be implemented, or the project shall apply to the Regional Water Board for site-specific Waste Discharge Requirements.

3. **Biological Resources**

a. *Effects of Treatment on Tidal Marsh Plant Communities Affected by Salt-meadow, Chilean and English Cordgrasses*

Impacts can be mitigated to a less-than-significant level by the imposition of a variety of mitigation measures. Vehicle and foot accessways into marshes will be minimized and optimal combinations of treatment and retreatment will be utilized as on means to reduce repeat entry. Seasonal timing of herbicide application will be adjusted to limit impacts to non-target plants. Adjacent vegetation may be buffered against herbicide spray drift by use of one of several methods, such as fabric covers or bay mud suspensions applied to plants. Post-application irrigation of oversprayed non-target vegetation will also be used. Standard best management practices for herbicide application (*e.g.*, field crew training, clear marking of spray boundaries in the field, ecological supervision during field operations, restricting operation to optimal low-wind times, nontoxic spray markers, etc.) shall be used to minimize overspray and drift. Disposal of cut, mown or shredded cordgrasses will be restricted to methods designed to prevent dispersal. Revegetation will be undertaken as appropriate and needed to prevent invasion by other nonnative plants.

b. *Effects of Treatment on Tidal Marsh Plant Communities Affected by Atlantic Smooth Cordgrass and Its Hybrids*

To reduce and minimize these effects, measures similar to those described under 3.a., above, will be used, including reducing foot and vehicle access, using the most effective combinations of treatment, limiting equipment impact though the use of mats, removal of excavated cordgrass and sediment, buffering non-target vegetation against herbicide drift or overspray, use of methods other than helicopter application of herbicide where feasible and less environmentally damaging, and removal of non-native cordgrass prior to seed set or maturation to prevent dispersal of seed.

c. *Effects of Treatment on Submerged Aquatic Plant Communities*

Avoiding transport of herbicide spray solutions near salt marsh pans and removing large deposits of mown cordgrass will curtail any possible effects on aquatic plants.

d. *Effects of Treatment on Special Status Plants in Tidal Marshes*

Effects on sensitive plants will be reduced by: surveys timed to determine location of sensitive species and recording of GPS location data, avoidance of identified plant locations during treatment, use of on-site botanical supervision whenever sensitive plants occur in treatment sites, refraining from burning in such sites and use of overspray and drift barriers and post-application irrigation of non-target plants to limit impact of herbicide use. After treatment, revegetation will be undertaken as appropriate and needed to prevent reinvasion or invasion by other nonnative plants.

e. *General Effects of Treatment on Birds and Waterfowl*

Measures which will curtail effects on birds and waterfowl include: refrain from treatment within 1,000 feet of mudflats during peak fall and spring Pacific Flyway stopovers; use optimal combinations of treatment to minimize activities near sensitive shorebird roosts or preferred foraging areas; discourage presence of shorebirds in herbicide treatment sites by early entry as mudflats emerge from high tide and by hazing, immediately remediate any spilled herbicide and keep birds away by hazing until completed, use of targeted helicopter application of herbicide by “spray ball” as preferred treatment option unless within 1,000 feet of active major roosting or foraging sites, in which case, helicopter spraying is not to be used.

f. *Effects of Treatment on Resident Harbor Seal Colonies*

To avoid such effects, access to marshes will be curtailed to specified paths and limited to within 1000 feet of haul outs or, when pups are present, to 2000 feet or any greater distance that elicits vigilance behavior and helicopter use will be limited to no closer than 2000 feet. Further mitigation includes consultation with marine mammal experts to determine seasonal variation in sensitivity to disturbance. Use of optimal treatment combinations to reduce access and precautions related to the handling and remediation of spills of herbicide solution.

g. *Effects of Treatment on Tidal Marsh Song Sparrow Subspecies and Salt Marsh Yellowthroat*

In areas known to support these birds, mitigation to reduce impacts to less than significant levels will include the adaptation and use of the protocols for minimization and avoidance of clapper rails (Appendix G to FEIS/R), emphasizing pre-project surveys (call detection), minimization of marsh disturbance, and avoidance of occupied habitat during the breeding season.

h. *Effects of Treatment on Western Snowy Plovers and California Least Terns*

Potential effects will be minimized or eliminated by pretreatment surveying for potential snowy plover nests near levee roads and by restricting dredging and excavation until after least terns have migrated out or during middle to lower tidal stages that allow navigation of barge and crane operations, while exposing the maximum extent of cordgrass above standing tides.

i. *Effects of Treatment on Raptors*

To avoid or reduce potential effects, application of herbicide solution by helicopter will be minimized in mid- and upper-marsh plains during raptor nesting season and, if used, will maintain a buffer of at least 500 feet from any nest identified by a pre-application survey performed by a qualified biologist.

j. *Effects of Treatment on Anadromous Fish*

To reduce impacts to less than significant levels, the following mitigation measures will be required: dredging of intertidal channels limited to tidal stages when target areas are emerged above water level and during seasons when winter- and spring-run Chinook salmon and steelhead migration times minimize risk of exposure; when using impoundments, to avoid trapping fish, water intakes will have intake elevations limited to tides above mean high water or fish screens will be installed on any new tidegates; herbicide use will be restricted during near channels and mudflats during migration periods of winter-run and spring-run Chinook salmon and steelhead and will be minimized by using other pre-herbicide treatment methods; and any spill of herbicide or solution will be immediately and effectively remediated.

k. *Effects of Treatment on Estuarine Fish in Shallow Intertidal Mudflats and Channels*

In infested North Bay marshes, in order to mitigate impacts, impoundment techniques will be eliminated, spray drift near tidal creeks will be minimized and intertidal excavation or dredging in tidal creeks will be restricted to tidal stages when target areas are emerged above water level.

l. *Effects of Treatment on Mosquito Production*

The effects related to enhanced mosquito production are reduced and eliminated by monitoring for and backfilling or enhancing drainage of any vehicle or foot access depressions created in marsh areas and, when using impoundment as a treatment

method, creating impoundment areas of a sufficient size and depth to minimize mosquito production.

4. **Air Quality**

a. *Dust Emissions*

Potential effects will be mitigated by using dust control measures where visible dust clouds are possible or where sensitive receptors (*i.e.*, houses, schools, hospitals) within 500 feet of the treatment site.

b. *Smoke and Ash Emissions*

The following mitigation will reduce this effect to less than significant: for prescribed burns, as required, obtained a burn permit and/or notify the BAAQMD and the Agriculture Commissioner prior to initiating the burn.

c. *Herbicide Effects on Air Quality*

To minimize the effects of herbicide application: for areas targeted for aerial herbicide application within 0.5 mile of sensitive receptors, prepare and implement an herbicide drift management plan. The plan will include the following elements: coordination with the County Agricultural Commissioner; identification and pre-treatment notification of nearby sensitive receptors; identification of areas that have non-target vegetation; modifications to equipment and application techniques to reduce drift; compilation of proper application instructions and warnings; avoidance of spraying when winds exceed 10 miles per hour when surface-based inversions are present; establishment of buffer zones to avoid affecting sensitive receptors; restrictions on public access during treatment activities and for a period (of up to 12 hours) after application; consideration of ground application near buffer zones and areas adjacent to sensitive receptors when prevailing conditions would increase potential for drift; and provision for temporary termination if conditions change and present drift potential at sensitive receptor sites.

5. **Noise**

a. *Disturbance of Sensitive Receptors*

The following mitigation measures reduce this effect to less than significant: the use of equipment and machinery in compliance with all applicable local noise regulation and otherwise limited to weekdays between 7:00 a.m. to 7:00 p.m. within 500 feet of sensitive receptors; and no use of helicopters within 1,500 feet of sensitive receptors.

6. **Human Health and Safety**

a. *Worker Injury from Accidents – Manual and Mechanical Treatment*

Potential effects related to worker injury will be mitigated by requiring pre-treatment worker safety training and the use of appropriate safety procedures and equipment, including hearing protection.

b. *Worker Health Effects – Herbicide Application*

In order to eliminate or reduce these effects, health and safety procedures and equipment, as described on the herbicide or surfactant label, will be used by workers and only certified or licensed herbicide applicators will mix and apply herbicide.

c. *Health Effects to the Public – Herbicide Application*

Public health effects can be avoided or reduced to less than significant by: 1) managing application for herbicide drift and terminating application when winds are in excess of 10 miles per hour, when inversion conditions exist or when wind could carry spray drift into inhabited areas; 2) notifying the public of treatment by posting conspicuous signs at or near any publicly accessible treatment sites 24 hours prior to treatment, warning of the pending treatment and harmful effects of the herbicide and advising "no entry" for eight hours after treatment; 3) avoiding the use of herbicides in high use areas where the public is likely to contact water or vegetation within 24 hours prior to weekends and public holidays or closing such areas to the public for 24 hours before and after treatment; 4) providing advance, one-week notification of future herbicide treatment by posting and by separate notice to schools and hospitals within 500 feet of any treatment site; and 5) prohibiting aerial spraying within 0.25 mile of a school, hospital, or other sensitive receptor location.

d. *Health Effects to Workers or the Public – Accidents Associated with Treatment*

These risks are mitigated by: use of appropriate health and safety procedures and equipment; preparation of a contingency plan including a Spill Prevention, Control and Countermeasures (SPCC) plan and Participation of the local fire department during prescribed burning activities.

7. **Cultural Resources**

a. *Disturbance or Destruction of Cultural Resources from Access and Treatment*

The following mitigation measure will reduce the potential effects of ground-disturbing control methods access (other than manual removal and smothering): a qualified archaeologist will conduct a Phase I site record and literature search; if the location is identified as a prehistoric or historic cultural resource site, excavations will be monitored; and if significant cultural resources are identified at the site, an alternative treatment method must be used or, alternatively, if the resource is determined significant and impacts cannot be avoided, then the lead Federal agency shall consult with the California Office of Historic Preservation (OHP) to identify appropriate

mitigation measures. For sites involving manual removal or smothering of invasive cordgrass and not requiring ground-disturbing access, if prehistoric or historic cultural resources are discovered, the project sponsor will suspend work for appropriate investigation and, if the find is an important resource, will fund and allow recovery of an archaeological sample or implement avoidance measures.

b. *Loss of Cultural Resources from Erosion*

In order to reduce these effects and in addition to previously identified mitigation measures, treatment will be designed to avoid damaging potentially significant cultural resource sites through early screening to detect sensitive prehistoric marsh remnants or near-surface buried prehistoric marsh surfaces, selection of treatment methods that minimize potential damage or, if not feasible, implementation of the mitigation measures identified in 7.b., above.

8. **Cumulative Impacts**

a. *Effects of Wetland Restoration Projects on Spread of Non-Native Cordgrass*

The potential of restoration projects to accelerate the spread the non-native *Spartina* will be mitigated as follows: the Conservancy and USFWS will review each proposed wetland restoration project to assure proper sequencing with cordgrass treatment so as to prevent the increased spread of invasive cordgrass to newly restored wetlands and will encourage all other agencies with permitting authority to do the same.

b. *Cumulative Damage to Marsh Plain Vegetation*

To the extent that mosquito abatement activity and projects under the Control Program will overlap, they may cumulatively impact marsh plain vegetation. The potential for cumulative impacts may be minimized by implementing joint planning and field coordination to avoid or minimize cumulative impacts.

EXHIBIT 5

Demonstration Projects: Impact Evaluation and Mitigation

Distributed to Board Members only;
available for public review at Conservancy office and at the Board Meeting.

INVASIVE *SPARTINA* PROJECT – PHASE II
IMPLEMENTATION OF CONTROL PROGRAM

Agenda Item 5.
September 25, 2003

EXHIBIT 1

Final Programmatic Environmental Impact Statement/Environmental Impact Report,
San Francisco Estuary Invasive *Spartina* Project: *Spartina* Control Program

INVASIVE *SPARTINA* PROJECT – PHASE II
IMPLEMENTATION OF CONTROL PROGRAM

Agenda Item 5.
September 25, 2003

EXHIBIT 5

Demonstration Projects: Impact Evaluation and Mitigation