WRP SMALL GRANTS PROGRAM

APPLICATION SUMMARY

1. **Project Name:** Coal Oil Point Reserve: Devereux Slough North Shore Margin Restoration

2. **Type of Project** (check only one)**:** ____ Acquisition ____ Planning
   __X__ Restoration/Enhancement

3. **Project summary** (1-2 sentences -- specify key action(s) to be undertaken)**:**
   The project consists of removal of non-native invasive plant species, including Pampas grass, Melaleuca, Myoporum, Harding grass, Tamarisk, and Palm from a seasonal wetland on the margin of Devereux Slough, and revegetation with native plants of the salt marsh and willow woodland plant communities. A large number of volunteers from the local community and students will learn concepts of restoration, conservation, and wetland function while participating in the project.

4. **Location:**
   County: Santa Barbara
   Watershed: Devereux Creek
   State Senate District (#18): Jack O'Connell
   State Assembly District (#35): Hannah-Beth Jackson

5. **Acreage:**
   Total acreage of project area: 1.25 acres .
   Acres of existing (pre-project) wetland habitat: 1 acre .
   Acres of post-project wetland habitat: 1 acre .
   Feet of stream corridor (if applicable) : NA .

6. **Budget Summary:**
   Total project cost: $41,020 .
   Amount requested from WRP: $ 28,820 .

7. **Contact Information:**
   Name: Dr. Cristina Sandoval
   Organization: Coal Oil Point Reserve, University of California
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8. **Proposal prepared by** Dr .Cristina Sandoval Title Reserve Director, Coal Oil Point Reserve

   Signature _____ Date _____

WRP SMALL GRANTS PROGRAM

COAL OIL POINT RESERVE
DEVEREUX SLOUGH NORTH SHORE MARGIN RESTORATION

Site Description

Devereux Slough is a coastal estuary on the University of California-Santa Barbara West Campus managed by the UC Natural Reserve System Coal Oil Point Reserve. The 157-acre reserve encompasses the estuary, sand dune habitat, a dune swale and associated pond, and surrounding uplands and has the primary missions of conservation, education, research and public outreach.

The slough provides habitat for waterfowl and the state-listed Belding's Savannah Sparrow, which breeds in the pickleweed marsh and forages in the transition zone at the margins of the slough. Two species of marsh dependent butterflies, the Pygmy Blue Butterfly, and the Wandering Skipper utilize the marsh vegetation for the larval phase and need nectar plants such as Coast Goldenbush for the adults.

The proposed restoration site is approximately 1.25 acres on the north shore of Devereux Slough. The site is dominated by annual weeds, as well as Pampas grass, *Melaleuca*, Tamarisk, and *Myoporum* which resprouted from the roots of plants removed last year. Additionally, annual weeds such as Ox tongue and thistle have recently invaded the site. Some natural regeneration has occurred in this area with the spread of native species such as Saltgrass and Jaumea, and Douglas nightshade, but the weeds will out-compete the native vegetation if left uncontrolled.

Inundation is infrequent in this seasonal wetland area, allowing establishment of non-natives in the absence of native cover. The vegetation in the surrounding area includes a Pickleweed/Frankenia salt marsh, an alluvial fan, wetland, willow woodland, coyote brush scrub, and transitional habitat along the slough margin (see maps attached).

The wetland portion of the site encompasses one acre, and the artificial slope to the paved trail/access (Venoco) road is 30 feet wide and 350 feet long, bordering the northern side of the site. This upland transitional habitat is dominated by some native species such as Coyote brush and non-native ruderal species, especially Harding grass and mustard.

Project Description

This project will restore an important component of the Devereux Slough ecosystem while educating participants of the local community and UCSB students about ecological concepts and restoration techniques. As an educational institution, the UCSB reserves thrive on promoting opportunities for educating the public on conservation and in particular, wetland ecosystems. The Reserve has been a role model for conservation issues to several federal and state agencies through it research-based management approach. The project entails the removal of non-native invasive species and the planting of native species appropriate for the site. Seeds and cuttings will be collected from the site and other portions of the Coal Oil Point Reserve, and

grown for out-planting as part of this project. We will provide nearly 30% in in-kind matching funds in the form on volunteer and reserve staff services.

Removal of weeds:

The first phase of the project will be weed removal. Weeds in the margin of the slough (access road embankment) would be cut and covered with black plastic for 8 weeks. Care will be taken to avoid native vegetation. This method has been successful in killing iceplant in other areas of the Reserve. Weeds such as Pampas grass, regenerated non-native shrubs, and annual weeds growing on the wetland will be removed by hand. One palm tree located on the wetland will be removed by contractors using chainsaws and no heavy equipment will be used in the wetland. Stumps of sprouting exotic shrubs will be painted with herbicide (Rodeo) during the dry season (May to October) to control regrowth.

Native species revegetation

Seeds and cuttings will be collected in the surrounding wetland and upland and plants will be propagated in the greenhouse. Cuttings may also be planted directly into the project site. Planting will occur during the rainy season and supplemental water will be applied from a water truck on the adjacent access road on the dry season as needed. The species communities for each micro-habitat within the project site will mimic the surrounding vegetation. See table below shows the main plant community that will be used in the restoration.

Table 1. List of plant species that will be used in the restoration area.

Species	**Common Name**	**Sites—preliminary siting of species**				
		Alluvial fan	**Coyote brush scrub**	**Willow woodland**	**Central wetland**	**Embankment --transition**
Anthrocnemum (Salicornia) subterminale	Parish's glasswort	x			x	
Atriplex lentiformis	Quail bush		x			x
Cressa truxillensis	Alkali weed				x	x
Distichlis spicata	Saltgrass	x	x	x	x	x
Frankenia salina	Frankenia	x			x	x
Isocoma menziesii	Coast goldenbush		x			x
Jaumea carnosa	Jaumea	x			x	
Leymus condensatus	Giant ryegrass			x		x
Sambucus mexicana	Blue elderberry			x		x
Scirpus maritimus	Bulrush				x	
Scrophularia californica	Bee plant		x	x		x
Suaeda taxifolia	Woolly seablight				x	x

Follow-up maintenance

Maintenance of weed control and the application of supplemental water will continue through the fall of 2004, for a total of two years. Supplemental planting will occur in the second rainy season to replace plants that die.

We will monitor the percent cover of native species from shortly before the start of the project, and every six months for two years. Monitoring will include photo documentation and transect lines to estimate the percent of native species cover.

Work will be accomplished by a Restoration Ecologist/Biologist, a project assistant/volunteer coordinator, restoration interns, and volunteers. Oversight of the project will be by the Coal Oil Point Reserve Director, Dr. Cristina Sandoval.

Permitting.

The project will take place on the Coal Oil Point Reserve, which is in the Coastal Zone and governed by the University of California at Santa Barbara's 1990 Long Range Development Plan. The removal of exotic species is part of routine Reserve maintenance. No heavy equipment will be used in the wetland and no disturbance to native vegetation will occur, thus no permits from regulatory agencies are required. The project will qualify for an Exemption under CEQA, which can be obtained after completion of the Final Restoration Plan. Permit requirements will be explored with the Planning Department at UCSB after submitting this project description to them.

Anticipated Timeline

September-October 2002	Final restoration plan Baseline plant survey Site preparation: clearing of non-natives Collection of seeds and cuttings
November-December 2002	Initiate planting
January-March 2003	Planting & site maintenance
April-June 2003	Site maintenance; Monitoring
July-September 2003	Site maintenance; supplemental water as needed
October-December 2003	Supplemental planting; maintenance Monitoring
January-March 2004	Planting & site maintenance
April-June 2004	Site maintenance & water additions
July-September 2004	Maintenance; final monitoring & report

Ecological Benefits

Modern thinking on wetland protection recognizes that to maintain the health of a wetland ecosystem, wetland edges and upland buffer zones must be protected, restored, and maintained. For example, some species need both the salt marsh and adjacent upland habitats to complete their complex life cycles. The endangered Belding's Savannah Sparrow nests in dry marshes and feed in wet areas. Pygmy Blue butterflies and Wandering Skippers need marsh plants, such as the Pickleweed or Saltgrass, in the larval stage and flowering shrubs growing on the upland for nectar for adult butterflies.

This project will restore an important wetland/upland transition zone on the Devereux Slough and is part of a larger project to restore the entire margin of the Devereux Slough ecosystem. In 2000-2001, a half mile of iceplant along the slough's eastern margin was removed and replaced with native species. *Myoporum* and acacia trees growing along the slough's margin were removed in 2001 and resprouting non-native vegetation has been continuously removed.

The proposed project is an integral part of a larger program to restore the slough ecosystem. The proposed restoration area has a unique freshwater seep entering the slough forming a potentially rich wetland habitat. If not restored, weeds such as Pampas grass, Harding grass (*Phalaris aquatica)*, and *Myoporum* shrubs will continue to invade the wetland and displace native vegetation. This project will remove the last Pampas grass plants in this area, as well as resprouting *Myoporum*, Tamarisk and *Melaleuca*, which dominate this site.

Control of weedy species along the margin of the slough, and replacement with native coastal sage scrub species, will have multiple benefits: (1) establishment of a native plant community, (2) provision of secondary habitat needed by marsh-dependent animal species (above), (3) reduction of the seed source for weeds invading adjacent wetland habitats, (4) buffering the slough from recreational (pedestrian and bicycle) and vehicular traffic on the access road, (5) enhancement of our knowledge of weed control, and (6) promotion of education about restoration ecology to UCSB students, community members, and land managers of the Santa Barbara County Weed Management Area.

Re-establishment and enhancement of the wetland habitats—including the alluvial fan and willow woodlands—is critical given the loss and degradation of 90% of California's coastal wetlands. Improving the ecological function of the remaining is a major goal of the Southern California Wetlands Recovery Project.

Community Involvement/Education Element

Most of the work of site preparation, planting and site maintenance will be done by volunteers and restoration interns. The Santa Barbara Audubon Society works closely with the Coal Oil Point Reserve staff in recruiting volunteers for restoration projects on the reserve. People recruited for previous projects have included University of California students as volunteers and interns, school groups, and community members. With major plans for habitat enhancement and open space preservation in conjunction with residential development in the Devereux/Ellwood region, neighbors and community groups are involved in executing restoration projects.

Applicant's Experience

Darlene Chirman is a Restoration Ecologist with a Master's in Ecology from UC Davis in 1994. Thesis research and post-graduate research involved establishment in riparian habitats. Since 1996, Ms. Chirman has been actively involved in habitat restoration in Santa Barbara, in both wetland and riparian habitats. She manages wetland restoration projects in Goleta Slough for Santa Barbara Audubon, and worked on contract with the University of California, the Land Trust of Santa Barbara County, the Community Environmental Council, and Santa Barbara County Parks in planning and implementing restoration in freshwater and estuarine wetlands, and riparian habitats.

Dr. Cristina Sandoval is the Director of Coal Oil Point Reserve, and has been carrying out habitat restoration in the Reserve's wetland and dune habitats for five years. Dr. Sandoval has a PhD in Ecology from the University of California at Santa Barbara.

PROJECT BUDGET

Table 2: Project Budget Broken Down by Task and Funding Source

Project Task	SGP	In-kind service (NRS)	In-kind service (volunteers)	Subtotal task
Biologist: Final Restoration Plan, oversight site prep/planting/seed & cutting collection, training interns/Project Assistant, monthly community workdays, monitoring, plant census, reports 218 hrs x $50/hr	$10,900			$10,900
Project Assistant/Volunteer Coordinator: volunteer recruitment, assist in instructing/supervising volunteers & interns, site maintenance, propagule collection & plant propagation. 700 yours x $15/hour inc. benefits	$10,500			$10,500
Restoration Interns: All aspects of restoration. 30 hours/quarter, $250/quarter, 6 quarters	$ 1,500			$ 1,500
Reserve Director: Oversight of project, approval of design, permitting, monitoring implementation, staff hiring & budget management.		$ 5,000		$ 5,000
Volunteers. 480 hours x $15/hr			$ 7,200	$ 7,200
Contractor: Tree removal (Palm tree)	$ 700			$ 700
Materials & Supplies: Estimates: disposal $500, plant propagation supplies $500, field supplies e.g. black plastic, Rodeo, plant flags $800, outreach (flyers/volunteer refreshments) $400, reports, photos $300, fuel $100.	$ 2,600			$ 2,600
Administration: Overhead to UCSB (10%)	$ 2,620			$ 2,620
TOTAL	**$28,820**	**$ 5,000**	**$ 7,200**	**$41,020**