Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

Project Information

1. **Proposal Title:**
Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

2. **Proposal applicants:**
Larry Coons, Interim Executive Director, Solano Land Trust (Formerly Solano County Farmlands & Open Space Foundation), www.solanolandtrust.org

3. **Corresponding Contact Person:**
Larry Coons or Julian Meisler
Solano Land Trust PO Box 115 Fairfield, CA 94533
707 432-0150
lcoons@solanolandtrust.org or julian@solanolandtrust.org

4. **Project Keywords:**
Habitat Restoration, Riparian
Habitat Restoration, Upland
Habitat Restoration, Wetland

5. **Type of project:**
Planning

6. **Does the project involve land acquisition, either in fee or through a conservation easement?**
Yes

If yes, is there an existing specific restoration plan for this site?
No

7. **Topic Area:**
Riparian Habitat

8. **Type of applicant:**
Private non-profit

9. **Location - GIS coordinates:**
Latitude: 38.2567
Longitude: -121.7836
Datum:

Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.
East Solano County from east edge of Travis Air Force Base to the confluence of Lindsey Slough and the Sacramento River.

10. **Location - Ecozone:**
10.3 Solano, 1.1 North Delta, 2.1 Suisun Bay & Marsh, Code 15: Landscape

11. **Location - County:**
Solano

12. **Location - City:**
Does your project fall within a city jurisdiction?
No

13. **Location - Tribal Lands:**
Does your project fall on or adjacent to tribal lands?
No

14. **Location - Congressional District:**
3

15. **Location:**
California State Senate District Number: 4
California Assembly District Number: 8

16. **How many years of funding are you requesting?**
3

17. **Requested Funds:**

a) Are your overhead rates different depending on whether funds are state or federal?
No
If no, list single overhead rate and total requested funds:
Single Overhead Rate: 20%
Total Requested Funds: $1,563,506

b) Do you have cost share partners already identified?
No

c) Do you have potential cost share partners?
Yes

If yes, list partners and amount contributed by each:
Department of Fish and Game, Unknown

d) Are you specifically seeking non-federal cost share funds through this solicitation?
No

If the total non-federal cost share funds requested above does not match the total state funds requested in 17a, please explain the difference:

18. **Is this proposal for next-phase funding of an ongoing project funded by CALFED?**
Yes

If yes, identify project number(s), title(s) and CALFED program (e.g., ERP, Watershed, WUE, Drinking Water):
97-N10 Restoring Ecosystem Integrity to the Great Jepson Prairie Ecosystem ERP

Have you previously received funding from CALFED for other projects not listed above?
No

19. **Is this proposal for next-phase funding of an ongoing project funded by CVPIA?**
No

Have you previously received funding from CVPIA for other projects not listed above?
No

20. **Is this proposal for next-phase funding of an ongoing project funded by an entity other than CALFED or CVPIA?**
No

Please list suggested reviewers for your proposal. (optional)

Michael Eaton The Nature Conservancy
Kevin Rice University of California at Davis
Peter Moyle University of California at Davis

21. **Comments:**

Environmental Compliance Checklist
Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

1. **CEQA or NEPA Compliance**
a) Will this project require compliance with CEQA?
No

b) Will this project require compliance with NEPA?
No

c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

According to CEQA guidelines Section 15378(A), all of our proposed activities are non-invasive and would not change existing environmental conditions on site.

2. **If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies).** *If not applicable, put "None".*
CEQA Lead Agency: None
NEPA Lead Agency (or co-lead:) None
NEPA Co-Lead Agency (if applicable): None

3. **Please check which type of CEQA/NEPA documentation is anticipated.**
CEQA
-Categorical Exemption
-Negative Declaration or Mitigated Negative Declaration
-EIR
X none

NEPA
-Categorical Exclusion
-Environmental Assessment/FONSI
-EIS
X none

If you anticipate relying on either the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that you believe covers this project.

4. **CEQA/NEPA Process**

a) Is the CEQA/NEPA process complete?
Not Applicable

b) If the CEQA/NEPA document has been completed, please list document name(s):

5. **Environmental Permitting and Approvals**

LOCAL PERMITS AND APPROVALS
Conditional use permit
Variance
Subdivision Map Act
Grading Permit
General Plan Amendment
Specific Plan Approval
Rezone
Williamson Act Contract Cancellation
Other

STATE PERMITS AND APPROVALS
Scientific Collecting Permit Required
CESA Compliance: 2081
CESA Compliance: NCCP
1601/03
CWA 401 certification
Coastal Development Permit
Reclamation Board Approval
Notification of DPC or BCDC
Other

FEDERAL PERMITS AND APPROVALS
ESA Compliance Section 7 Consultation
ESA Compliance Section 10 Permit
Rivers and Harbors Act
CWA 404
Other

PERMISSION TO ACCESS PROPERTY
Permission to access city, county or other local agency land.
Agency Name:
Permission to access state land.
Agency Name: Department of Fish and Game Required, Obtained
Permission to access federal land.
Agency Name:
Permission to access private land.
Landowner Name:

6. **Comments.**

Land Use Checklist
Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

1. **Does the project involve land acquisition, either in fee or through a conservation easement?**
Yes
If you answered yes to #1, please answer the following questions:

a) **How many acres will be acquired?**
Fee: 0
Easement: Up to 1,100 acres depending on willing sellers.
Total: Up to 1,100 acres.

b) Will existing water rights be acquired?
No

c) Are any changes to water rights or delivery of water proposed?
No

2. **Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?**
No

3. **Do the actions in the proposal involve physical changes in the land use?**
No

If you answered no to #3, explain what type of actions are involved in the proposal (i.e., research only, planning only).

For conservation easements, changes will be made to land management only (i.e. cattle exclusion from riparian zones). Grazing, the current land use, will be maintained. All proposed action at the Calhoun Cut Ecological Reserve involves planning only.

4. **Comments.**

Conflict of Interest Checklist
Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

Please list below the full names and organizations of all individuals in the following categories:

- Applicants listed in the proposal who wrote the proposal, will be performing the tasks listed in the proposal or who will benefit financially if the proposal is funded.
- Subcontractors listed in the proposal who will perform some tasks listed in the proposal and will benefit financially if the proposal is funded.
- Individuals not listed in the proposal who helped with proposal development, for example by reviewing drafts, or by providing critical suggestions or ideas contained within the proposal.

The information provided on this form will be used to select appropriate and unbiased reviewers for your proposal.

Applicant(s):
Larry Coons, Interim Executive Director, Solano Land Trust
Julian Meisler, Conservation Planner, Solano Land Trust

Subcontractor(s):
Are specific subcontractors identified in this proposal?
Yes, but selection of subcontractor will be based on availability and specific skills applicable to job request.

If yes, please list the name(s) and organization(s):

Philip Williams Philip Williams and Associates

Helped with proposal development:
Are there persons who helped with proposal development?
No

If yes, please list the name(s) and organization(s):

Budget Summary

Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

Year 1												
Task	Task Description	Direct Labor Hours	Salary (per year)	Benefits (per year)	Travel	Supplies & Expendables	Services or consultants	Equipment	Other Direct Costs	Total Direct Costs	Indirect Costs	Total Cost
1	Conservation Easement Acquisition	200	7336	734		500			10000	18570	1714	20284
2	Slough Bathymetric Study									0		0
3	Slough Hydrologic Assessment									0		0
4	Restoration Plan									0		0
		200	7336	734	0	500	0	0	10000	18570	1714	20284

Year 2												
Task	Task Description	Direct Labor Hours	Salary (per year)	Benefits (per year)	Travel	Supplies & Expendables	Services or consultants	Equipment	Other Direct Costs	Total Direct Costs	Indirect Costs	Total Cost
1	Conservation Easement Acquisition	200	7336	734		500			610000	618570	1714	620284
2	Slough Bathymetric Study						150000			150000	30000	180000
3	Slough Hydrologic Assessment						150000			150000	30000	180000
4	Restoration Plan									0		0
		200	7336	734	0	500	300000	0	610000	918570	61714	980284

Year 3												
Task	Task Description	Direct Labor Hours	Salary (per year)	Benefits (per year)	Travel	Supplies & Expendables	Services or consultants	Equipment	Other Direct Costs	Total Direct Costs	Indirect Costs	Total Cost
1	Conservation Easement Acquisition	200	7336	734		2000			510000	520070	2014	522084
2	Slough Bathymetric Study									0		0
3	Slough Hydrologic Assessment									0		0
4	Restoration Plan	175	4505	541	600	400	25000		3000	34045	6809	40854
		375	11841	1274	600	2400	25000	0	513000	554115	8823	562938

Budget Justification
Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

Direct Labor Hours. Provide estimated hours proposed for each individual.

Coons 600 Meisler 175

Salary. Provide estimated rate of compensation proposed for each individual.

Coons $36.68/hr Meisler $25.74/hr

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Coons 10% Meisler 12%

Travel. Provide purpose and estimate costs for all non-local travel.

All travel is local.

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Office $1000 Computing $1000 Field Supplies $1400

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Tasks 2 and 3. Slough bathymetric study and hydrodynamic modeling will require 6-10 months including background data searches, surveys data compilation and report writing. Hourly rates will vary dramatically from principal investigator to hydrologist to surveyor. Daily cost may range from $1000-$1700.

Task 4. Restoration plan for Calhoun Cut Ecological Reserve will take roughly 10 months to complete at roughly $625/week. Hours will be variable. This does not include SLT staff time.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

None

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentations, response to project specific questions and necessary costs directly associated with specific project oversight.

Inspection of work progress:50 hours at $40.35/hour
Reporting to Board and CALFED:120 hours at $40.35/hour
Oversee staff:80 hours at $40.35/hour
Respond to project specific questions:50 hours at $40.35/hour

Other Direct Costs. Provide any other direct costs not already covered.

Pre-acquisition costs for conservation easements include appraisals, title reports, baseline surveys, attorney fees.

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs.

Solano Land Trust uses a predetermined 20% overhead. This is based on administrative staff, rent, phones, insurance and copies.

Executive Summary

Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

The Cache Slough complex in eastern Solano County was once a large and vitally linked ecosystem composed of dead end sloughs and adjacent riparian, marsh, vernal pool and perennial grassland habitats. Although comprising only a small part of the vast Bay-Delta ecosystem, the complex provides essential habitat for numerous resident and migratory species including 29 at-risk species. This proposal focuses on the southern arm of the Cache Slough complex, which follows Lindsey Slough upstream from the Sacramento River where it splits into two smaller dead end sloughs, Barker Slough and Calhoun Cut. This slough system together with adjacent uplands is known as the Jepson Prairie-Prospect Island Corridor (Corridor). The Corridor includes over eleven miles of sloughs, 614 acres of riparian and marsh habitat, 38 acres of mid-channel islands and over 14,000 acres of vernal pool/perennial grassland habitats. The lack of development in this area makes landscape scale restoration is both politically feasible and economically affordable.

CALFED awarded the Solano Land Trust (SLT) $246,370 to begin PHASE II restoration in the Corridor including vernal pool restoration and stakeholder outreach. SLT was asked to resubmit its grant for two additional components as directed actions. This directed action proposal requests **$1,563,506** to implement two additional components associated with PHASE II of landscape scale restoration of the Corridor's uplands and waterways.

- Component 1. Purchase of up to 1,100 acres of conservation easements on top priority lands within the Corridor. Easements will be from willing sellers and land will remain in wildlife friendly agriculture.
- Component 2. Feasibility analysis of landscape scale restoration on the publicly owned Calhoun Cut Ecological Reserve. This includes hydrologic and bathymetric modeling and a restoration plan.

Our objective is to achieve one overarching goal: To reestablish vital ecosystem function through the entire Lindsey Slough watershed by protecting and restoring important habitat types to benefit 29 at risk species, while simultaneously maintaining compatible agricultural land uses. The four-component project, two already funded and two proposed for funding, includes demonstration and research projects implemented with numerous partners. The primary expected outcome of this long-term, multi-phase and multi-habitat project is a restored, protected corridor extending from Jepson Prairie to Prospect Island. Specifically, we intend to significantly increase the overall acreage of marsh and riparian habitats, double the restored acres of vernal pool/perennial grasslands and increase the abundance and local distribution of at risk and other native plant and animal species.

The project complements Strategic Goals 1, 4 and 5 as identified in the CALFED Ecosystem Restoration Program and is supported by stakeholder agencies and organizations. The long-term conservation returns from PHASE II can be accomplished while maintaining the local agricultural and economic base.

This revised grant proposal addresses all concerns raised during the public comment period. The Hastings Island Land Company, the Reclamation District 2060, the Delta Protection Commission (DPC), and the CA Department of Conservation all expressed concerns over the acquisition of the 775-acre Pembco property. Further analysis of the area and completion of the *Site Conservation Plan for the Jepson Prairie-Prospect Island Corridor* determined this acquisition not to be top priority. Fee acquisition of the Pembco property is no longer included in this proposal. Instead, this proposal now seeks funding for conservation easements on lands considered highest priority.

The DPC also requested a complete inventory of existing habitats at the publicly owned Calhoun Cut Ecological Reserve, a site proposed for restoration. A botanical survey that includes descriptions and locations of all community types and special status species was prepared in 1994. In 2001, a detailed fish, invertebrate and habitat study was conducted in the sloughs adjacent to the Reserve. SLT has informed DPC of these documents. Further, the new site conservation plan describes the entire Corridor in terms of habitats present.

The DPC also requested analysis of the proposal's ability to meet CALFED goals. Pages 4-5 of the proposal describe how the goals will be met.

Restoring Ecosystem Integrity in the Northwest Delta
PHASE II

A. Project Description

1. Problem

The Cache Slough complex, while only a small part of the vast Bay-Delta ecosystem, in eastern Solano County was once a large and vitally linked ecosystem composed of dead end sloughs and adjacent riparian, marsh, vernal pool and perennial grassland habitats. The complex provides essential habitat for resident and migratory fish, waterfowl, songbirds, mammals, amphibians, reptiles, invertebrates and plants. Its southern arm follows Lindsey Slough upstream from the Sacramento River where it splits into two smaller dead end sloughs, Barker Slough and Calhoun Cut. This portion of the Lindsey Slough watershed is known as the Jepson Prairie-Prospect Island Corridor (Corridor).

The Corridor's watershed crosses three Ecological Management Zones from west to east: the Bay Region EMZ, the Sacramento EMZ and the Delta EMZ (CALFED 2001). Roughly bounded by Travis Air Force Base in the west, Hay Road in the north, Creed Road in the south and Prospect Island in the east, the Corridor is comprised of 11.4 miles of slough habitat, 614 acres of tule marsh and riparian habitat, 38 acres of mid-channel islands and one of the largest and most intact vernal pool/perennial grassland complexes in the state of California (Figure 1; Table 1).

The ecological processes, habitats and species characteristic of the Corridor are impacted by several major stressors:

Conversion of vernal pool/perennial upland habitat to non-compatible uses – Central Valley vernal pool habitat has been reduced by 75% as a result of intensive agriculture, flood control, overgrazing and urbanization. This rate continues at 1.5% per year threatening the highly adapted at risk species endemic to this habitat (Holland 1998). The Greater Jepson Prairie Ecosystem, in which the Corridor sits, has been spared to some extent by its relatively infertile soils but recent demand for land by real estate developers, power companies, Travis Air Force Base and potential ranchette owners poses a serious threat to this area.

Non-native species – Displacement of native species is common in cases where species are naturally rare like many vernal pool species or where highly invasive species form homogeneous stands as is the case with the upland grass species medusahead (*Taeniatherum caput-medusae*) (Phytosphere Research 2002). Table 2 provides a list of target weed species.

Levee construction and removal of riparian vegetation – Most of the open water segments of the Corridor are confined between large earthen levees largely devoid of woody riparian vegetation. Often these barriers are reinforced with riprap along minor and major meander bends. Processes affected include altered net flows, lowered

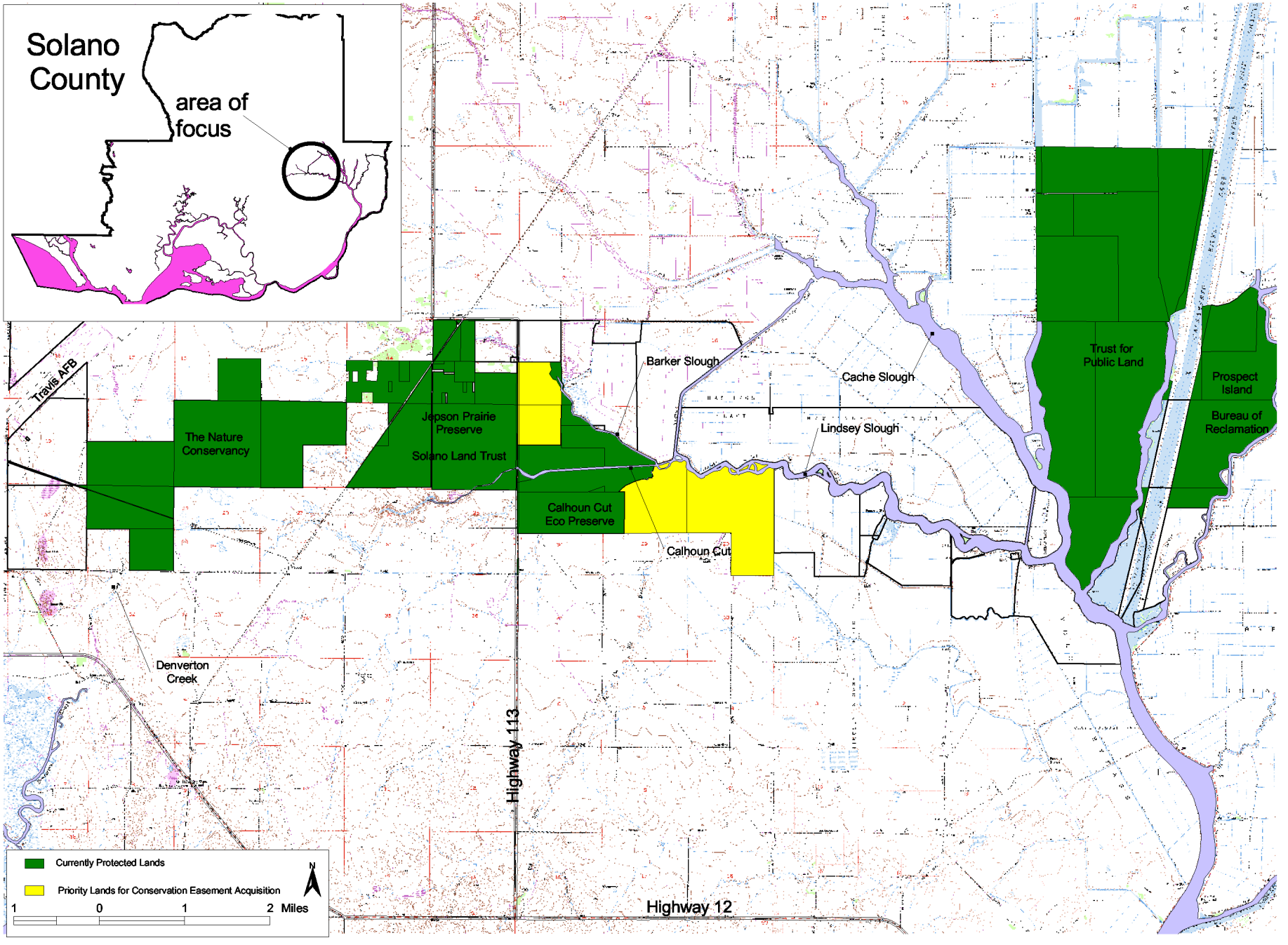

Figure 1. Location of the Jepson Prairie-Prospect Island Corridor. Green shaded parcels are currently protected. Yellow shaded parcels are high priority for acquisition of conservation easments.

residence times and reduced nutrient cycling as result of the isolation or absence of adjacent riparian and marsh habitats (CALFED 2000). The reduction of riparian, marsh and shaded riverine aquatic habitats affects a large number of terrestrial and aquatic species dependent upon these habitats (CALFED 2000; Knopf 1985; Brode and Bury 1984).

Water diversion – The Barker Slough Pumping Plant, completed in 1988, exports water to the North Bay Aqueduct providing a source of drinking water for several Solano County cities and Travis Air Force Base. When the primary source of drinking water, Lake Berryessa, cannot meet demand these areas become dependent on Barker Slough. The plant is equipped with a fish screen but entrainment of small fry may still be an issue. Of great concern also is the disruption of tidal flow into upper Barker Slough contributing to a disconnection of the upper and lower reaches during the summer months.

In this project, Solano Land Trust (formerly Solano County Farmlands and Open Space Foundation) will continue and expand upon work begun in Phase I (CALFED 97-N10)[1]. PHASE II will implement a three-year, four-component program. Two of the components are already funded by CALFED. This proposal seeks funding for two additional components described below as directed actions. The project will include elements of both targeted research and demonstration projects.

In Phase I Solano Land Trust (SLT) broadened its understanding of vernal pool restoration through focused weed control efforts. In Phase II it will continue this track by beginning to understand the needs and implications surrounding large-scale restoration of the slough ecosystem. If funded, PHASE II will be followed by PHASE III, which includes implementation of large-scale restoration and monitoring. This multi-phase, multi-year program is a long term commitment by SLT that will bear large conservation returns including watershed-wide conservation planning, increased populations and cover of native species, control of non-native species, building of partnerships with local entities and perpetual stewardship over one of the richest ecosystems in California.

This proposal is requesting **$1,563,506** for PHASE II directed actions. Unless otherwise noted, all the following sections of this proposal apply only to PHASE II.

Table 1. Target habitats identified by CALFED that occur in the Jepson Prairie-Prospect Island Corridor (CALFED 2001).

Habitat Type	*Approximate existing area or length*
Dead end slough	11.4 miles
Riparian/Marsh	614 acres
Mid-channel islands	38 acres
Vernal pool/perennial grassland	>17,000 acres

[1] Details regarding the goals, successes and status of Phase I can be found in Attachment 2.

Table 2. Target weed species in the Jepson Prairie-Prospect Island Corridor.

Common Name	**Scientific Name**
Fennel	*Foeniculum vulgare*
Italian thistle	*Carduus pycnocephalus*
Yellow star-thistle	*Centaurea solstitialis*
Purple star-thistle	*Centaurea calcitrapa*
Bull thistle	*Cirsium vulgare*
Milk thistle	*Silybum marianum*
Cocklebur	*Xanthium strumarium*
Perennial pepperweed	*Lepidium latifolium*
Goat grass	*Aegilops cylindrical*
Medusahead grass	*Taeniatherum caput-medusae*
Lippia	*Phyla nodiflora var. n.*

GOALS

In this section, all four components of the project are listed. SLT seeks funding for Components 1 and 2 as directed actions. Components 3 and 4 are already funded by CALFED and will not be described in detail in this proposal. Following each directed action component are descriptions of how the action will fulfill goals and objectives of both SLT and CALFED.

DIRECTED ACTIONS

Component 1 – Acquire conservation easements over 1,100 acres of top ranked properties bordering Calhoun Cut and Lindsey Slough as identified in the *Site Conservation Plan for the Jepson Prairie-Prospect Island Corridor* (Solano Land Trust 2002) while maintaining viable agriculture. (See Attachment 1)

SLT Goals and Objectives

Goal 1.1: Protect up to 1,100 acres of existing riparian, wetland and upland agricultural habitat in the Corridor.

Objective 1.1: Acquire conservation easements on up to 1,100 acres of the most ecologically important and viable properties within the corridor. Easements will permit continued extensive agricultural practices and encourage management efforts that will add extra protection to buffer areas immediately adjacent to slough, vernal pool and marsh habitats.

CALFED Ecosystem Restoration Goals and Objectives fulfilled by Component 1

Ecosystem Restoration Goal 1: Endangered and other at-risk species and native species.

Protection of the habitats will contribute to the fulfillment of Objectives 1-4 by protecting native freshwater fish assemblages, neotropical migratory birds, wading birds, waterfowl, freshwater marsh plant communities, riparian plant communities, seasonal wetland plant communities, vernal pool communities, aquatic plant communities, and terrestrial biotic assemblages associated with aquatic and wetland habitats and contributing to the recovery of at-risk species including Mason's lilaeopsis, Suisun marsh aster, delta tule pea, Crampton's Tuctoria, delta mudwort, alkali milkvetch, Bogg's lake hedge-hyssop, heartscale, Swainson's hawk, bank swallow, western pond turtle, California tiger salamander, and Sacramento perch.

Ecosystem Restoration Goal 4: Habitats

Protecting these important lands will contribute to the fulfillment of Objectives 3 and 4 by protecting existing connected high quality aquatic, wetland and riparian habitats; minimizing the conversion of agricultural lands to intensive agriculture or suburban development; and provide a buffer to proposed restoration sites including the Calhoun Cut Ecological Reserve.

Ecosystem Restoration Goal 5: Nonnative Invasive Species

Protecting these important lands will contribute to the fulfillment of Objectives 5 and 6 by prohibiting planting of non-native invasive species and encouraging control of these species.

Component 2. Feasibility analysis and plan for restoration of perennial grassland, vernal pool, seasonal wetland, marsh, riparian and shaded riverine aquatic habitat at the Calhoun Cut Ecological Reserve. Implementation of restoration of the Reserve would occur in Phase III of this project. Funding for Restoration is not sought in this grant proposal.

SLT Goals and Objectives

Goal 2.1: Assess feasibility of restoring hydrologic processes necessary for natural reestablishment of multiple habitat types at the Calhoun Cut Ecological Reserve.
Objective 2.1: Hire consultant to conduct bathymetric studies and create hydrodynamic models to determine feasibility of levee removal and/or levee setbacks at the Calhoun Cut Ecological Reserve.

Goal 2.2: Develop plan to restore function to the variety of habitats at the Calhoun Cut Ecological Reserve.
Objective 2.2: Hire consultants to work with SLT and DFG staff to develop restoration plan that identifies specific restorative actions and outlines all the necessary permitting and compliance measures that must be considered.

CALFED Ecosystem Restoration Goals and Objectives

Feasibility analysis and restoration planning alone will not fulfill CALFED Ecosystem Restoration Goals. However, the analysis is a requisite first step toward restoration of the Calhoun Cut Ecological Reserve. If the restoration occurs it will address Goals 1, 2, 4, 5, and 6.

ALREADY FUNDED BY CALFED

Component 3. Restoration and management of the vernal pools and perennial grasslands on 1,600 acres of the Wilcox Ranch or an equivalent property.

Component 4. Outreach campaign to educate and build support among local stakeholder agencies, organizations, and landowners.

HYPOTHESES

(These hypotheses address the full scope of the project and include PHASES I, II and III)

- A combination of prescribed burning and grazing treatments will increase the cover of native species and decrease the cover of target weed species in vernal pool/perennial grassland complexes.
- Levee removal and/or setbacks or restoration of flow to historic channel will facilitate the natural regeneration of riparian and marsh habitats.
- Levee removal and/or setbacks or restoration of flow to historic channel will increase abundance and local distribution of at risk and other native fish, invertebrates and plants associated with dead end sloughs and adjacent habitats.

2. Justification

The Jepson Prairie-Prospect Island Corridor presents a rare opportunity to restore an entire slough system from the upper reaches of its watershed to its confluence with the Sacramento River. In the upper corridor a vast and nearly connected area of nearly 5,000 acres is already protected by SLT, the California Department of Fish & Game, The Nature Conservancy and mitigation holdings while in the lower watershed over 3,200 acres are protected by the Trust for Public Land and the Bureau of Reclamation (Figure 1). The protected acreages include vernal pools, perennial grasslands, marsh, riparian and slough habitats. Each of these habitats is rich in species, 29 of which are targeted for recovery by CALFED and other agencies (Table 3).

The vital link between slough and the upland has been compromised and, in many cases, severed. Large earthen levees have long isolated the slough from its floodplain causing the tule marshes to shrink and almost completely wiping out riparian vegetation. In the grasslands, laser leveling, trenching, over and undergrazing have contributed to a loss of species. This is compounded by the massive influx of non-native invasive species. Annual grasses, such as Italian ryegrass, not only displace natives through their presence but also through the buildup of thatch (Barry 1998). Accumulated thatch absorbs significant water causing vernal pools to fill more slowly and reduces the pools' hydroperiod. This, in turn, permits the advance of the ryegrass further into the once prohibitively wet pool and displaces native species (Keeley and Zedler 1998).

In many cases, natural drainage from upland to the slough has been channelized delivering high velocity, sediment laden waters across bare banks and into the sloughs. The reduced ability of the slough system to retain water due to loss of floodplain and

meandering capability causes higher peak flows, which may cause fish and invertebrates to be flushed from the system. Water quality is reduced during these periods.

The proposed actions in this grant are designed to abet these circumstances. Ongoing restorative actions in the uplands such as controlled burning and seasonal grazing will reinstate the ecological processes with which all obligate vernal pool species have evolved. Stopping the spread of weeds in the upper watershed is crucial to slowing infestations in the lower watershed (Pringle 2001, Kennedy et al. 2002). This restoration of process is the first step toward stabilization and recovery of at risk species.

By protecting up to 1,100 acres of land fronting the sloughs with conservation easements, a large preemptive step will be taken to stem the spread of non-native invasive plants, to preserve the extensive agricultural heritage and protect both upland and aquatic habitats from development. Acquisition of conservation easements is always from willing sellers and landowners play a vital role in shaping the language of the easements.

The publicly owned Calhoun Cut Ecological Reserve offers the greatest opportunities for habitat restoration in the entire Jepson Prairie-Prospect Island Corridor. The Reserve supports vernal pool, perennial grassland, marsh and riparian habitats and is leased for grazing throughout the year. Its biological resources are well documented. In the uplands, a complete floral survey was conducted in 1994 (Witham and Kareofelas 1994) while a CALFED funded fish and macroinvertebrate survey was conducted in both Barker Slough and Calhoun Cut directly adjacent to the Reserve in 2001 (Garcia and Associates 2001).

When Calhoun Cut was dredged 80 years ago, flow was directed away from the original channel. The original channel, which may be called South Barker Slough, is still visible to the south (Figure 2). Although South Barker Slough still maintains a network of tule marsh, its extent is reduced and its function is greatly compromised because of the reduced flow and minimal tidal action. A feasibility study would examine the potential for restoring flow to South Barker Slough. As an alternative, the study would examine the potential for connecting Calhoun Cut to its floodplain through removal and/or setbacks of levees at the Reserve. Both of these actions would serve as major steps toward restoring ecosystem function to the upper watershed of the lower Cache Slough complex. Expected benefits include normalized flow velocities, reduced sedimentation, increased shallow water habitat at the appropriate time of year to benefit native fish life cycles, and increased marsh and riparian habitat. Development of riparian habitat benefits both terrestrial and aquatic species by substantially increasing habitat complexity (Nakano and Murakami 2001; Krajick 2001).

Table 3. At risk species identified by CALFED and other special status species that occur or are likely to occur in the Jepson Prairie-Prospect Island Corridor (CALFED 2000).

Species	**Latin binomial**	**Confirmed presence**
Plants		
Suisun marsh aster	*Aster lentus*	X
Mason's lilaeopsis	*Lilaeopsis masonii*	X
Delta tule pea	*Lathyrus jepsonii*	X
Delta mudwort	*Limosella subulata*	X
Alkali milk-vetch	*Astragalus tener var. tener*	X
Crampton's tuctoria	*Tuctoria mucronata*	X[a]
Colusa grass	*Neostapfia colusana*	X
Boggs lake hedge-hyssop	*Gratiola heterosepala*	X
Contra Costa goldfields	*Lasthenia conjugens*	X
Legenere	*Legenere limosa*	X
Fragrant fritillary	*Fritillaria liliacea*	X
Dwarf downingia	*Downingia pusilla*	X
Invertebrates		
Conservancy fairy shrimp	*Branchinecta conservatio*	X
Vernal pool fairy shrimp	*Branchinecta lynchi*	X
Vernal pool tadpole shrimp	*Lepidurus packardi*	X
Delta green ground beetle	*Elaphrus viridis*	X
Fish		
Delta smelt	*Hypomesus transpacificus*	
Splittail	*Pogonichthys macrolepidotus*	
Chinook salmon	*Oncorhyncus tshawytscha*	X
Steelhead trout	*Oncorhynchus mykiss*	X
Striped bass	*Morone saxatilis*	X
Sacramento perch	*Archoplites interruptus*	
Wildlife		
Giant garter snake	*Thamnophis gigas*	
Western spadefoot	*Scaphiopus hammondi*	
California tiger salamander	*Ambystoma californiense*	X
Western pond turtle	*Clemmys marmorata marmorata*	X
Western yellow-billed cuckoo	*Coccyzus americanus*	
Burrowing owl	*Athene cunicularia*	
Swainson's Hawk	*Buteo swainsoni*	X

[a] *not seen for several years*

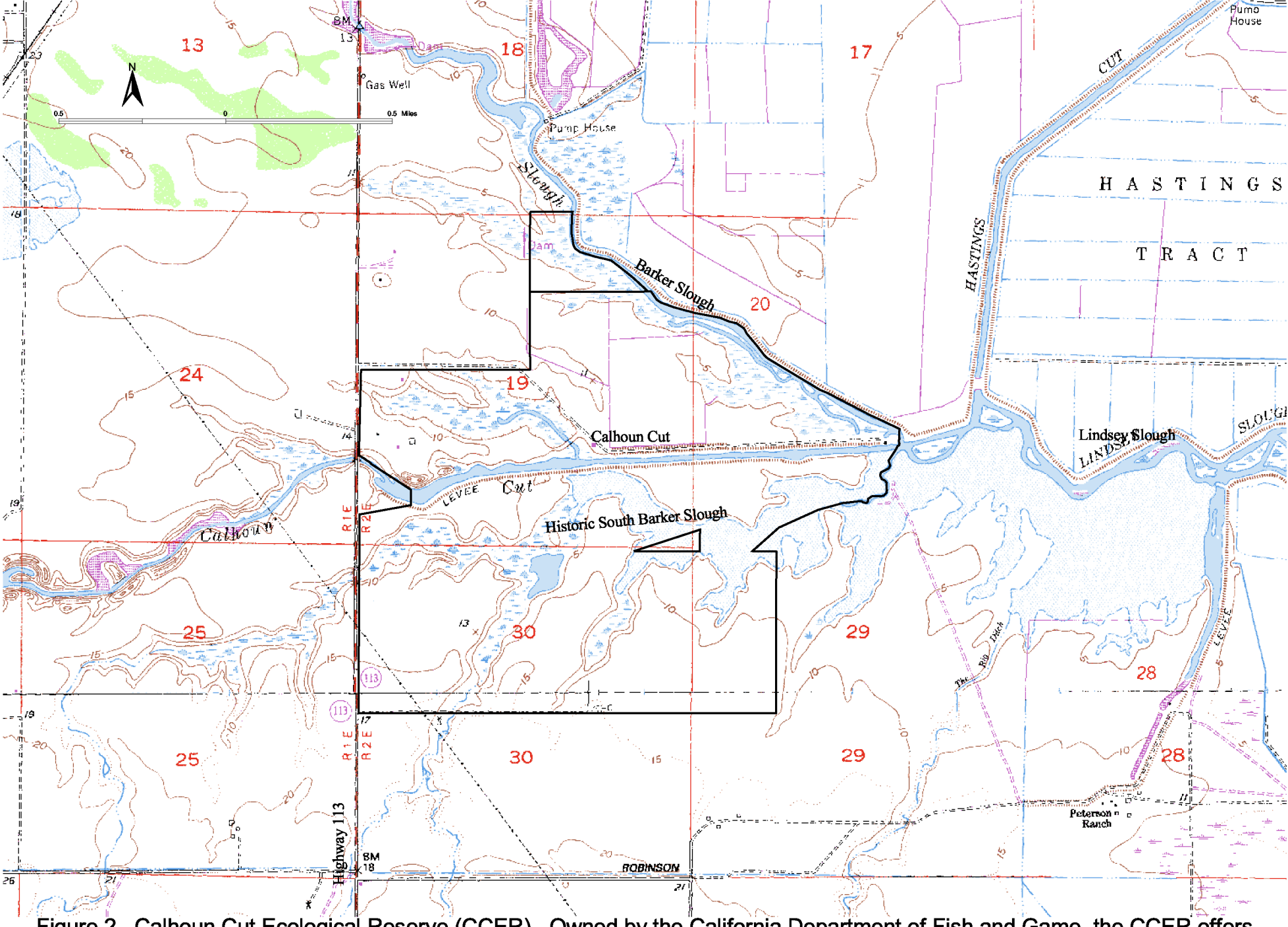

Figure 2. Calhoun Cut Ecological Reserve (CCER). Owned by the California Department of Fish and Game, the CCER offers excellent opportunites for restoration. Potential actions include restoring flow to historic South Barker Slough and removing or setting back levees along Calhoun Cut. USGS quadrangles include Dozier and Bird's Landing.

3. Approach for Directed Actions

Component 1 – Acquire conservation easements over 1,100 acres of top ranked properties bordering Calhoun Cut and Lindsey Slough as identified in the *Site Conservation Plan for the Jepson Prairie-Prospect Island Corridor* (Meisler 2002) while maintaining viable agriculture.

A product of Phase I CALFED funding was the production of a site conservation plan for the Jepson Prairie-Prospect Island Corridor. Among other things, the plan ranks all the properties within the 14,000-acre Corridor in terms of ecological condition, potential for successful restoration and proximity to protected lands. Attachment 2 briefly describes the ranking process. Within the Corridor, roughly 1,100 acres rank as Level 1 or top priority for protection. While the previous grant proposal sought funding for fee title acquisition of the Pembco property, subsequent analysis showed that other lands retain higher ecological value and that conservation easements provide sufficient protection. Level 1 lands will be sought first. If not all the funds are spent or if not all landowners are interested, Level 2 lands will be explored.

While easements will encourage continued extensive agriculture, SLT will work with landowners to develop weed management plans that may include targeted grazing. Extra protection will be sought for the riparian and marsh habitats bordering the sloughs.

Pursuing conservation easements instead of fee acquisition of the Pembco property and others addresses concerns expressed by the Delta Protection Commission, Reclamation District 2060, and the Hastings Island Land Company. All of these stakeholders were concerned about increased flood risk associated with levee setbacks on the Pembco property.

Copies of the site conservation plan will be distributed to the Delta Protection Commission and interested landowners including those identified as holding the top priority properties. Conservation easement acquisition is based on a willing seller policy.

<u>Proposed activities include:</u>
1. *Landowner outreach.*
2. *Purchase of one or more conservation easements.*

Component 2. Feasibility analysis and plan for restoration of perennial grassland, vernal pool, seasonal wetland, marsh, riparian and shaded riverine aquatic habitat at the Calhoun Cut Ecological Reserve.
(Implementation of restoration at the Reserve would occur in Phase III of this project. Funding for restoration is not sought in this grant proposal).

The Calhoun Cut Ecological Reserve, owned and managed by the California Department of Fish & Game (DFG), offers the greatest opportunity for habitat restoration in the entire Jepson Prairie-Prospect Island Corridor. At its widest point, the 963-acre Reserve extends 1.7 miles from Highway 113 to the confluence of Barker Slough and Calhoun Cut. Its longest axis stretches 1.5 miles: 0.75 miles from Barker Slough to Calhoun Cut

and another 0.75 miles south of Calhoun Cut (Figure 2). The Reserve supports vernal pool, perennial grassland, marsh and riparian habitats and is leased for grazing throughout the year. In the uplands, a complete floral survey was conducted in 1994 (Witham and Kareofelas 1994). A CALFED funded fish and macroinvertebrate survey was conducted in both Barker Slough and Calhoun Cut directly adjacent to the Reserve (Garcia and Associates 2001).

Despite the existence of these habitats, overall ecosystem function is compromised. Calhoun Cut is an artificial channel that was dredged around 1920. It is bound by levees for most of its length, which severs the connection between slough and floodplain. Further, the creation of the channel diverted water away from the historic channel, South Barker Slough.

Herein lies an excellent opportunity for restoration. The most desirable restoration action is to redirect flow into South Barker Slough. If this is determined to be unfeasible, an alternative is to explore opportunities for connecting Calhoun Cut with its floodplain via levee setbacks and/or removal.

Neither of these actions will be carried out in this phase of funding. Rather, funding is sought for feasibility analyses of these actions and creation of a restoration plan.

Proposed activities include:

1. Hire hydrologic consultants to conduct feasibility analysis.

Phillip Williams and Associates or an equivalent firm will be hired to conduct relevant bathymetric studies and hydrodynamic modeling to first define the landscape and second determine likely effects of the proposed restoration alternatives at Calhoun Cut Ecological Reserve.

2. Prepare restoration plan

Based on the results of the feasibility analysis, SLT will work together with appropriate agencies and hired consultants to create a restoration plan for the Calhoun Cut Ecological Reserve. Plan implementation would take place in Phase III funding which is not sought in this proposal.

PHASE III (not proposed for funding in this grant)

Component 1. Restoration Implementation.

Proposed activities include:

1. Hire consultants to implement restoration of Calhoun Cut Ecological Reserve.

Consultants will work closely with SLT and DFG staff and appropriate permitting agencies to implement the restoration plan.

Component 2. Monitor effects of levee removal and setbacks.

Proposed activities include:
1. Vegetation monitoring.
Area and composition of riparian and marsh habitat will be monitored to provide evidence of success.
2. Aquatic monitoring.
A survey of fish and invertebrates will be carried out and compared to previous surveys conducted in 2001 as part of PHASE I. Results will be compared to assess effects of restoration from year to year.

Component 3. Acquisition of other vital property.

Proposed activities include:
1. Acquisition of fee title or conservation easement on vital property in the Corridor as identified in the Site Conservation Plan completed in PHASE I (Meisler 2002).
Opportunities will be explored as they arise.

4. Feasibility

SLT has carried out restoration projects of similar size on several of its properties including Lynch Canyon Open Space, Rush Ranch Open Space and Jepson Prairie Preserve. Its experience in successfully purchasing fee title and/or conservation easements on over 10,000 acres further demonstrates its ability to carry out the work as described.

Phase II activities are not expected to trigger CEQA/NEPA regulations. All work at the Calhoun Cut Ecological Reserve involves only feasibility analysis and planning. Permits would be required for levee setbacks and/or removal if PHASE III were funded. In later phases of the project, SLT assumes the CALFED and partners will take the lead on any required CEQA/NEPA documentation. SLT will provide information as needed.

5. Performance Measures

Performance measures are given for the objectives stated in Section A1. Objectives are referred to by number only. For descriptions of each objective, refer to Section A1.

Performance measures for Objective 1.1

- Successful purchase of conservation easements on up to 1,100 acres of top priority lands within the Corridor.

Performance measures for Objective 2.1

- Completion of report on results of hydrologic study and feasibility analysis.

Performance measures for Objective 2.2

- Completion of restoration plan.

6. Data Handling and Storage

All data will be stored on compact disc. Hard copy and/or electronic data files, reports and photographs will be available upon request.

7. Expected Products/Outcomes

General outcomes include establishment of a protected corridor extending from Jepson Prairie to Prospect Island. Each PHASE brings this outcome one step closer. Specific products and outcomes are given below.

PHASE II

Component 1

- Successful purchase of conservation easements on up to 1,100 acres of top priority lands within the Corridor.

Component 2

- Report on feasibility and impact analysis for large-scale hydrologic and vegetative restoration at the Calhoun Cut Ecological Reserve.
- Report on restoration alternatives at Calhoun Cut Ecological Reserve.

PHASE III (not proposed for funding in this grant)

Component 1

- Expected benefits include normalized flow velocities, reduced sedimentation, increased shallow water habitat at the appropriate time of year to benefit native fish life cycles, and increased marsh and riparian habitat.

Component 2

- Monitoring reports illustrating the effects of restoration of the slough ecosystem including vegetation, fish and invertebrates.

Component 3

- Acquisition of conservation easement or fee title by willing sellers on other vital properties in the Corridor. All lands would remain in agriculture.

8. Work Schedule

Table 4. Schedule of tasks for "Restoring Ecosystem Integrity in the Northwest Delta: PHASE II."

Tasks	2002-2003				2003-2004				2004-2005			
	F	W	SP	SU	F	W	SP	SU	F	W	SP	SU
Component One												
Purchase of conservation easements												
Component Two												
Bathymetric Study												
Hydrologic Assessment												
Restoration Plan												

Major Milestones

- Bathymetric study of Jepson Prairie-Prospect Island Corridor (Summer 2004).
- Hydrologic assessment determining effects of levee removal and setbacks on Jepson Prairie-Prospect Island Corridor (Summer 2004).
- Acquisition of conservation easements on up to 1,100 acres of land within the Corridor (Summer 2005).
- Completion of restoration plan for Calhoun Cut Ecological Reserve (Summer 2005).

Each component can stand alone if only partial funding is granted. Ability of multiple tasks within components to stand alone is discussed below.

Component 1: Conservation Easements
This component has only one task.

Component 2: Feasibility Analysis and Restoration Plan
The feasibility analysis can be funded without the restoration plan. However. the restoration plan must follow the feasibility analysis and therefore cannot stand alone.

B. Applicability to CALFED ERP and Science Program Goals and Implementation Plan and CVPIA Priorities

1. ERP, Science Program and CVPIA Activities

Delta Region (DR) priorities are fulfilled in the following way:
DR-1. Acquisition of conservation easements, restoration and management of properties along this north Delta corridor that include marsh, riparian and mid-channel island habitats.

2. Relationship to Other Ecosystem Restoration Projects

This proposal relates to several operative and future ecosystem restoration projects in the general vicinity of the Jepson Prairie-Prospect Island Corridor.

- In 1999 the Environmental Protection Agency (EPA) and the Trust for Public Land (TPL) granted SLT funding to develop and begin to implement the *Conservation Strategy for the Vernal Pools of the Greater Jepson Prairie Ecosystem*. SLT released that report in June 2001. Resulting vernal pool protection, management and restoration in the watershed is tightly connected to water quality in the sloughs and assists in halting the spread of weeds from upper to lower watershed.

- The Solano County Water Agency (SCWA) is developing best management practices to improve water quality in the Barker Slough watershed. This project is funded through a Prop 204 grant from the State Water Resources Control Board. SCWA plans to fence the uppermost reaches of the Barker Slough to exclude cattle.

  Funding of the SLT's efforts to restore Barker Slough, Calhoun Cut and Lindsey Slough will further enhance water quality in Barker Slough.

- The Community Alliance with Family Farmers (CAFF) received a CALFED grant (ERP-01-N42) to provide outreach and education to farmers in the Barker Slough watershed. CAFF will partner with SCWA and the Ulatis Resource Conservation District (URCD) to develop a demonstration site in the Barker Slough watershed. The site will be used for clean-up, maintenance, revegetation, habitat restoration, water quality monitoring and evaluation. The site will become the model for the educational component of the CAFF grant.

  If SLT's conservation easement acquisitions are funded, wildlife friendly agricultural practices highlighted in the CAFF study could be encouraged on easement lands.

- SCWA is presently applying for a CALFED directed action grant to assess the feasibility of developing an alternate intake for the North Bay Aqueduct. Currently water is drawn from the Barker Slough at the Barker Slough Pumping Plant. Establishment of a new intake could result in more widespread restoration of the Barker Slough area.

  Restoration in the Corridor would be enhanced if the primary intake for the Aqueduct were located elsewhere.

3. Requests for Next-Phase Funding

See Attachment 2.

4. Previous Recipients of CALFED Program or CVPIA Funding

SLT received funding for CALFED grant 97-N10 "Restoring Ecosystem Integrity in the Northwest Delta." Major accomplishments include restoration of riparian vegetation along 1 mile of Barker Slough; removal of 7 acres of eucalyptus trees; implementation of an innovative burning/grazing program for the weed control at Jepson Prairie Preserve; development of a state of the art weed and native species monitoring program; fundraising of nearly $70,000, a detailed survey of the fish, invertebrates and habitats of Barker Slough and Calhoun Cut, and production of the Site Conservation Plan for the Jepson Prairie-Prospect Island Corridor.

5. System-Wide Ecosystem Benefits

The TPL/EPA, CAFF and SCWA projects described above have great potential for system wide benefits. SCWA's goal to improve water quality will be complemented by the CAFF proposal to educate landowners and by efforts of SLT to restore the Jepson Prairie-Prospect Island Corridor. In this case, higher water quality for humans equates to higher habitat quality for fish, wildlife and plants.

6. Additional Information for Proposals Containing Land Acquisition

All proposed acquisitions are conservation easements.

C. Qualifications

Established in 1986, the Foundation has received and effectively managed numerous grants since its inception. It is currently completing projects funded by CALFED, California Coastal Conservancy, Packard Foundation, DOC California Farmland Conservancy Program, Trust for Public land, Environmental Protection Agency, Solano County Water Agency, Vallejo Sanitation District and the Bay Area Open Space Council. Sample projects include acquisition of 6,000 acres (fee) of open space and 4,200 acres of agricultural and habitat conservation easements, countywide open space planning, countywide agricultural conservation easement planning, red-legged frog habitat restoration and study of oral history as a tool for stewardship.

Larry Coons, is the Interim Executive Director of SLT. Coons was General Manager of the Santa Clara Open Space Authority as well as founder and Executive Director of the Santa Clara Land Trust. Coons will be responsible for general project supervision and will assist with all conservation easement transactions.

Julian A. Meisler, M.S., is the Conservation Planner for SLT. He has worked on a diversity of restoration and research projects since 1992 and continues to work with California State Parks conducting red-legged frog surveys and volunteers his time for research on the California tiger salamander. Meisler managed the Phase I CALFED grant and will manage the Phase II projects and service contracts and carry out some of the biological tasks. He is the author of articles and reports and including the *Conservation*

Strategy for the Vernal Pools of the Greater Jepson Prairie Ecosystem and the *Site Conservation Plan for the Jepson Prairie-Prospect Island Corridor.* In this regard, Meisler is very familiar with the ecological resources of the topic area.

Ken Poerner, B.S, is the Land Steward for SLT. He has planned and directed numerous restoration efforts in Solano County including Barker Slough riparian habitat restoration and red-legged frog habitat enhancement at Lynch Canyon. Poerner is trained and certified in prescribed burning and currently leads prescribed burning at Jepson Prairie. Poerner will implement the weed control efforts on the Wilcox property.

Phytosphere Research (www.phytosherereresearch.com) is a plant science consulting firm providing consulting and research services for all applications in horticulture, urban forestry, arboriculture, natural plant communities and agriculture. The principals, Swiecki and Bernhardt, are authors of numerous scientific papers and reports including *Exotic and Native Plant Monitoring at Jepson Prairie Preserve, 2001*.

Carol Witham, botanical consultant, has over twenty years experience in the Central Valley. Witham has special expertise in vernal pool ecosystems throughout California and has written and edited numerous technical papers and reports.

Philip Williams and Associates (www.pwa-ltd.com) is a well known and highly regarded hydrologic consulting firm in California. The firm has carried out many bathymetric studies and hydrologic analyses elsewhere in California.

D. Cost

1. Budget

See Table 5.

2. Cost-Sharing

The Department of Fish and Game is likely to contribute staff time to assisting with the development of a restoration plan for the Calhoun Cut Ecological Reserve.

Table 5. Budget for "Restoring Ecosystem Integrity in the Northwest Delta: PHASE II

		Subject to Overhead					Not Subject to Overhead			
Year 1	**Task**	**Direct Labor Hours**	**Direct Salary and benefits**	**Service Contracts**	**Materials**	**Misc and other Direct Costs**	**Overhead (20%)**	**Pre-Acquisition Costs**	**Acquisition Cost**	**Total Cost**
	Conservation Easement Acquisition	200	$ 8,070			$ 500	$ 1,714	$ 10,000		$ 20,284
	Slough Bathymetric Study						$ -			$ -
	Slough Hydrologic Assessment						$ -			$ -
	Restoration Plan						$ -			$ -
Total Costs Year 1		**200**	**$ 8,070**	**$ -**	**$ -**	**$ 500**	**$ 1,714**	**$ 10,000**	**$ -**	**$ 20,284**
Year 2	Conservation Easement Acquisition	200	$ 8,070			$ 500.00	$ 1,714	$ 10,000	$ 600,000	$ 620,284
	Slough Bathymetric Study			$ 150,000			$ 30,000			$ 180,000
	Slough Hydrologic Assessment			$ 150,000			$ 30,000			$ 180,000
	Restoration Plan						$ -			
Total Costs Year 2		**200**	**$ 8,070**	**$ 300,000**	**$ -**	**$ 500**	**$ 61,714**			**$ 980,284**

Table 5 continued

		Subject to Overhead					Not Subject to Overhead			
Year 3	**Task**	**Direct Labor Hours**	**Direct Salary and benefits**	**Service Contracts**	**Materials**	**Misc and other Direct Costs**	**Overhead (20%)**	**Pre-Acquisition Costs**	**Acquisition Cost**	**Total Cost**
	Conservation Easement Acquisition	200	$ 8,070			$ 2,000	$ 2,014	$ 10,000	$ 500,000	$ 522,084
	Slough Bathymetric Study						$ -			
	Slough Hydrologic Assessment						$ -			
	Restoration Plan	175	$ 5,045	$ 25,000	$ 2,000	$ 2,000	$ 6,809			$ 40,854
Total Costs Year 3		**375**	**13115**	**25000**	**2000**	**4000**	**8823**	**10000**	**500000**	**562938**
Totals by Task	Conservation Easement Acquisition	600	$ 24,210		$ -	$ 3,000	$ 5,442	$ 30,000	$ 1,100,000	$ 1,162,652
	Slough Bathymetric Study	0		$ 150,000	$ -	$ -	$ 30,000	$ -	$ -	$ 180,000
	Slough Hydrologic Assessment	0		$ 150,000	$ -	$ -	$ 30,000	$ -	$ -	$ 180,000
	Restoration Plan	175	$ 5,045	$ 25,000	$ 2,000	$ 2,000	$ 6,809	$ -	$ -	$ 40,854
Total Project Cost		**775**	**$ 29,255**	**$ 325,000**	**$ 2,000**	**$ 5,000**	**$ 72,251**	**$ 30,000**	**$ 1,100,000**	**$ 1,563,506**

E. Local Involvement

Solano County Water Agency, Ulatis Resource Conservation District (URCD), the Department of Fish and Game (DFG), the US Fish and Wildlife Service, The Nature Conservancy (TNC), the University of California Natural Reserve System (UCNRS), the Delta Protection Commission, the Hastings Island Land Company and the Reclamation District 2060 have been notified of this proposal. Support letters from URCD, TNC, and UCNRS are attached.

Compliance with Standard Terms and Conditions

SLT is familiar with the standard terms and conditions of CALFED from its experience with the PHASE I grant. SLT further agrees to comply with all the terms and conditions for PHASE II.

F. Literature Cited

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Attachment 1. Excerpt from the *Site Conservation Plan for the Jepson Prairie-Prospect Island Corridor* produced by the Solano Land Trust in 2002.

V. Conservation Opportunities

Large tracts of land within and adjacent to the Corridor are already protected such as the 1,566-acre Jepson Prairie Preserve owned by SLT and the 963-acre Calhoun Cut Ecological Reserve owned by the California Department of Fish and Game (Figure 5). Opportunities for increased vernal pool protection in the upper watershed are being pursued by SLT following the recently completed *Conservation Strategy for the Vernal Pools of the Greater Jepson Prairie Ecosystem* (Meisler 2001). The project, funded by the U.S. Environmental Protection Agency and the Trust for Public Land, set a goal of protecting up to 8,400 acres of what are considered Priority One vernal pool lands. Following the purchase of the 3,400-acre Wilcox Ranch adjacent to Jepson Prairie (of which 1,600 acres will be permanently protected) by The Nature Conservancy, SLT hopes to protect roughly 5,000 additional acres in the next 10 years. If purchased, these lands would continue to be grazed in a manner similar to Jepson Prairie Preserve. While protection and management of the vernal pools also protects the watersheds that flow into Barker Slough and Calhoun Cut, protection of land directly adjacent to the sloughs will be important to maintaining the quality of marsh, riparian and aquatic habitats.

As shown throughout this site conservation plan, the lands bordering the Corridor are in mixed uses that largely coincide with agricultural zoning designations. Within the study area, some properties offer greater opportunity for conservation and / or restoration. This section identifies priorities for acquisition of either conservation easements or fee ownership. Conservation easements are the preferred mode of protection in the Corridor because intensive management is not required. This is opposite the recommendation of the *Conservation Strategy for the Vernal Pools of the Greater Jepson Prairie Ecosystem* which urges fee title acquisition because of the adaptive and often intensive management required for managing vernal pool species.

When circumstances allow only a fee simple purchase, however, SLT should make the purchase, implement restoration where appropriate and resell with a conservation easement that encourages wildlife friendly agriculture. Wildlife friendly agriculture includes actions such as reduced pesticide use, exclusion of livestock from riparian areas and controlling non-native weeds. Because resale of lands encumbered by conservation easements may be time consuming, every effort should be made to purchase conservation easements instead. Following SLT policy, all acquisitions would be from willing sellers only.

Within the Corridor, all properties were ranked according to conservation value. Figure 14 illustrates the priority rankings. The rankings were developed using aerial photo analysis, field surveys (from the water) and local knowledge. Appendix 4 provides contact information for all landowners in the Corridor. For reasons of confidentiality, Appendix 4 will not be externally circulated with this document. Funding sources for

all of the proposed conservation actions are identified in Section VIII and Appendix 5. The basis for the ranking is given below followed by details of the Level 1 properties.
Explanation of Importance Ranking of Lands for Protection in the 13,700-acre Corridor

- **Level 0** = Already Protected (although protection may not be for habitat). **The total acreage of already protected land is 5,743 acres**.

- **Level 1** = Most important land for protection based on high quality habitat, proximity to protected lands and strong potential for restoration. **The total acreage of Level 1 land is 1,160 acres.**

- **Level 2** = Lands that are strategically located in relation to other protected lands and the sloughs but that have less intact habitat. These lands may have strong potential for restoration. **The total acreage of Level 2 land is 2,335 acres.**

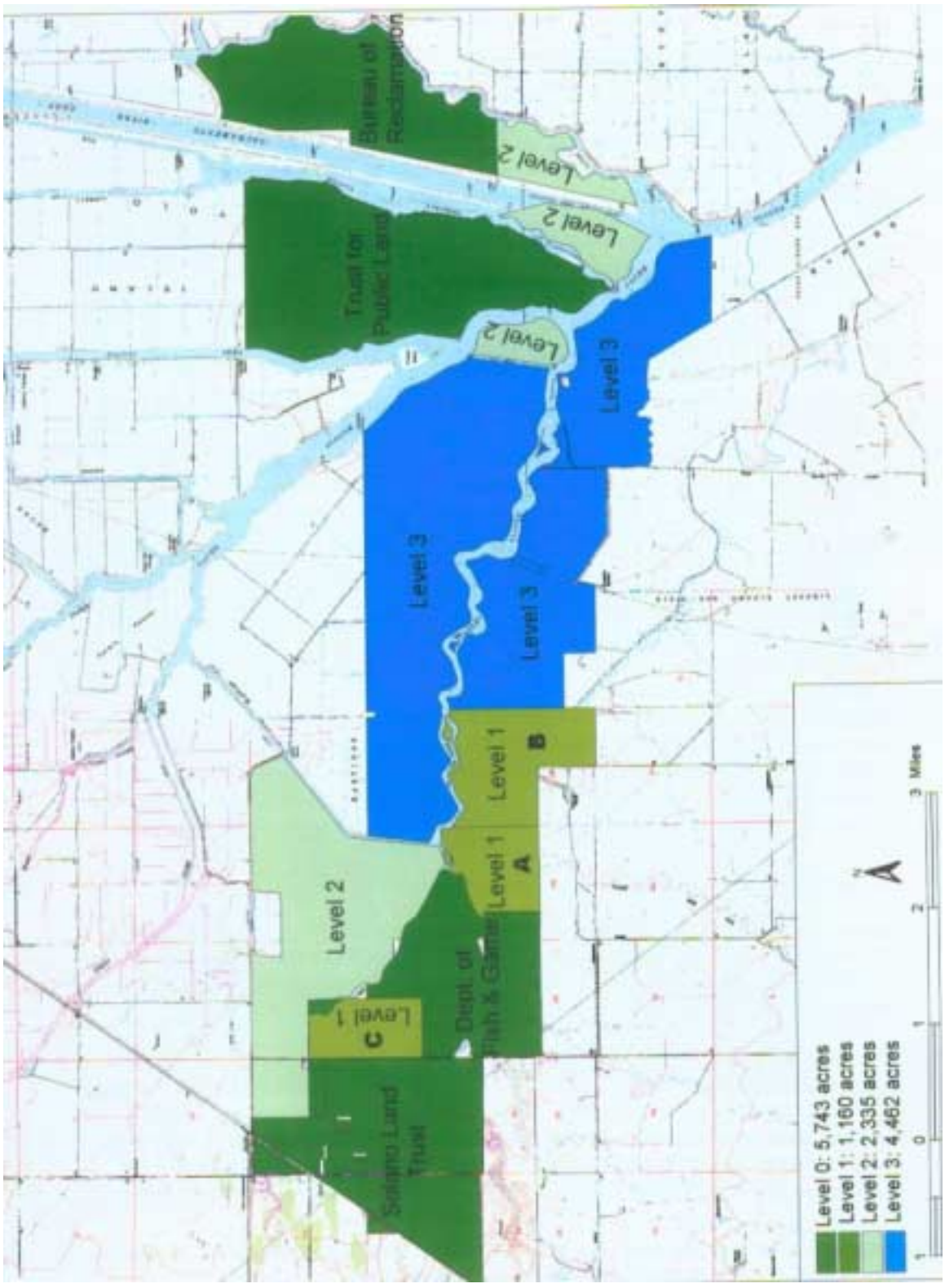
- **Level 3** = Lands that are intensively developed and have little remaining natural habitat. **The total acreage of Level 3 land is 4,462 acres.**

Level 1
Property A – Property A has the greatest acreage of unprotected riparian and marsh habitat within the corridor. The western boundary follows the historic channel of Calhoun Cut (South Barker Slough), for roughly 2/3 mile and supports substantial riparian habitat. The northern boundary fronts Lindsey Slough for approximately ½ mile and also supports a large area of riparian and marsh habitats. A nearly 4 acre mid-channel island densely vegetated with native riparian vegetation is part of the property. Land use is principally cattle grazing. The land is not for sale and no contact has been made with the landowner regarding their interest in a conservation easement. Contact with the landowner will be the first step in implementation of this plan.

Property B – Property B fronts Lindsey Slough for roughly 1- ¼ miles and includes 5 mid-channel islands comprising over 11 acres. Some of these islands are known locations of special status species such as Delta tule pea and Mason's lilaeopsis. The western section of the property appears to have a large area of intact marsh and riparian habitat. The land is not for sale and no contact has been made with the landowner regarding their interest in a conservation easement. Contact with the landowner will be the first step in implementation of this plan.

Property C – Property C is bordered on the north by Barker Slough, the west by Highway 113 and the south and east by the Calhoun Cut Ecological Reserve. The land is used for sheep grazing and appears to be in good condition. Although SLT has had substantial contacts with the landowner, no specific discussions regarding sale of a conservation easement on this property have taken place.

Protection of the listed **Level 1** properties would fulfill Goal 1 of this site conservation plan in which 1,000 acres of private land are placed under conservation easements for the purpose of protecting and fostering biological diversity while maintaining the agricultural activities that are currently in place.


Bureau of Reclamation
Level 2
Level 2
Trust for Public Land
Level 2
Level 3
Level 3
Level 3
Level 1
B
Level 1
A
Level 2
Dept. of Fish & Game
Level 1
C
Solano Land Trust
Level 0: 5,743 acres
Level 1: 1,160 acres
Level 2: 2,335 acres
Level 3: 4,462 acres
3 Miles

Attachment 2.

Status of CALFED 97-N10 "Restoring Ecosystem Integrity in the Northwest Delta PHASE I"

PHASE I was completed September 30, 2002. The original signing date of the grant agreement was delayed one year and therefore began in February 1998. In January 2001, the Ecosystem Roundtable Committee granted a 20-month extension and a budget increase of $48,000. The extension was granted to enable an additional season of data collection by subcontracted weed monitoring consultants (see Task Order 3). The budget increase was granted to support higher than anticipated costs of eucalyptus removal (Task Order 7) and weed monitoring.

Task Order 1. Administration.
Quarterly reports and invoices are thorough and timely. In January 2001 the National Fish and Wildlife Foundation conducted a fiscal and field review and the results were excellent.

Task Order 2. Material Acquisition
SLT purchased numerous items vital to completing tasks. Highlighted items include but are not limited to safety equipment, tools and training for prescribed burns, a small slough boat for conducting surveys of the Jepson Prairie-Prospect Island Corridor and a camera.

Task Order 3. Monitoring
This task order is divided into terrestrial and aquatic monitoring.

Terrestrial Monitoring
In partnership with UC Davis, SLT developed and implemented a management plan for the Jepson Prairie Preserve that outlines synchronistic grazing and burning programs (see Task Order 7). As explained in Task Order 7, the burn program is growing each year in acreage and support through the dedication and expertise of Foundation staff, UC Davis Natural Reserve System (UCNRS), The Nature Conservancy (TNC) and volunteer docents. Initial delays made early monitoring of little use. However, beginning in spring 2001, Phytosphere Research (PR) was subcontracted to develop and implement a weed monitoring program that could be carried out annually with staff and volunteers.

PR collected data in spring and summer of 2001 and 2002 on target weeds and desired native species. The analysis and subsequent reports provided SLT with a detailed picture of baseline conditions. In spring 2002, PR trained staff in data collection protocol and analyzed data collected by staff and volunteers. The 2002 data will provide the first opportunity to test the original hypotheses that cover of each target weed species is declining over time.

Aquatic Monitoring
Monitoring goals changed from the original grant proposal due to inconsistent inventories of juvenile fish at the Barker Slough Pumping Station by public agencies. In winter, spring and summer 2001, subcontractors GANDA conducted fish, invertebrate and habitat surveys in the upper and lower reaches of both Barker Slough and Calhoun Cut. Major findings in the final report include presence of rearing chinook salmon ad steelhead. This survey serves as a baseline condition for future monitoring efforts. This will become especially important if PHASES II and III are funded.

Task Order 4. Conservation Planning
In February 2000 SLT hired a Conservation Planner. The planner strategized to combine CALFED funding and Environmental Protection Agency (EPA) to conduct watershed level planning. EPA funded a study and planning effort focused on protection of vernal pools of the Greater Jepson Prairie Ecosystem (GJPE). The vernal pool and perennial grassland focus comprise the upper watershed of the Jepson Prairie-Lindsey Slough Corridor. Therefore, vernal pool planning was completed first. The planner recently completed Site Conservation Plan for the Jepson Prairie-Prospect Island Corridor, which identifies priority properties for restoration and preservation.

Task Order 5. Fundraising
SLT's fundraising effort was a complete success. It raised nearly $70,000 for the Jepson Prairie Preserve endowment. The effort met the TNC challenge, which provided a 1:1match for TNC funding.

Task Order 6. Riparian Restoration
Barker Slough riparian restoration was a tremendous success. Over 1 mile of Barker Slough was restored with willow, and dogwood poles. A dedicated team of volunteers directed by staff led the effort. A small amount of funding remains in the task order and is currently being used to exclude sheep from a particularly impacted portion of Calhoun Cut. A solar pump, tank and trough will be used to supply sheep with water. The Foundation is confident that the degraded riparian area will regenerate naturally. If this does not happen within one year, SLT staff and volunteers will plant willow poles in the affected area.

Task Order 7. Weed Control
CALFED funding permitted SLT to acquire the necessary inventory of equipment needed to conduct prescribed burns. Staff and volunteers have received extensive training in conducting prescribed burns and now train volunteers to assist. In the past three years, almost 500 acres have been burned and monitoring efforts are attempting to assess the results. Spot control of purple star thistle, perennial pepperweed and other noxious weeds are continually implemented.
In August 2001, 6 acres of eucalyptus trees were removed from Jepson Prairie. This is a major step forward in restoring the uplands and vernal pools within the preserve and beyond.