

# Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)

## Project Information

1. **Proposal Title:**

Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)

2. **Proposal applicants:**

Ryan Luster, The Nature Conservancy  
Dawit Zeleke, The Nature Conservancy  
Greg Golet, The Nature Conservancy

3. **Corresponding Contact Person:**

Sam Lawson  
The Nature Conservancy  
Sacramento River Project 500 Main St. Chico, CA 95928  
530 897-6371  
slawson@tnc.org

4. **Project Keywords:**

**Habitat Restoration, Riparian  
Restoration Ecology  
Revegetation**

5. **Type of project:**

Implementation\_Full

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

No

7. **Topic Area:**

Riparian Habitat

8. **Type of applicant:**

Private non-profit

9. **Location - GIS coordinates:**

Latitude: 39.701

Longitude: -121.961

Datum:

**Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.**

Sunset Ranch (RM 199, east bank) 187 acres RX Ranch (RM 194, west bank) 243 acres Dead Man Reach (RM 186, east bank) 238 acres Capay (RM 194, west bank) 550 acres

**10. Location - Ecozone:**

3.2 Red Bluff Diversion Dam to Chico Landing, 3.3 Chico Landing to Colusa

**11. Location - County:**

Butte, Glenn

**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:**

2 & 3

**15. Location:**

**California State Senate District Number:** 1 & 4

**California Assembly District Number:** 2 & 3

**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: 22

Total Requested Funds: \$4,950,032

b) Do you have cost share partners already identified?

No

c) Do you have potential cost share partners?

No

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):

<b>97 NO-2</b>	<b>Ecosystem and natural process restoration on the Sacramento River: floodplain acquisition and management.</b>	<b>ERP</b>
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Have you previously received funding from CALFED for other projects not listed above?

Yes

If yes, identify project number(s), title(s) and CALFED program.

<b>97 NO-3</b>	<b>Ecosystem and natural process restoration on the Sacramento River: Active restoration of riparian forest.</b>	<b>ERP</b>
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<b>97 NO-4</b>	<b>Ecosystem and natural process restoration on the Sacramento River: A meander belt implementation project.</b>	<b>ERP</b>
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<b>98 F-18</b>	<b>Floodplain acquisition, management, and monitoring on the Sacramento River.</b>	<b>ERP</b>
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<b>2000 FO-3</b>	<b>Floodplain acquisition and sub-reach/site-specific management: Sacramento River (Red Bluff to Colusa).</b>	<b>ERP</b>
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# Environmental Compliance Checklist

## Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)

### 1. CEQA or NEPA Compliance

a) Will this project require compliance with CEQA?

Yes

b) Will this project require compliance with NEPA?

Yes

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

### 2. If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies). If not applicable, put "None".

CEQA Lead Agency: to be determined

NEPA Lead Agency (or co-lead:) to be determined

NEPA Co-Lead Agency (if applicable):

### 3. Please check which type of CEQA/NEPA documentation is anticipated.

#### **CEQA**

-Categorical Exemption

-Negative Declaration or Mitigated Negative Declaration

#### **XEIR**

-none

#### **NEPA**

-Categorical Exclusion

-Environmental Assessment/FONSI

#### **XEIS**

-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?

No

If the CEQA/NEPA process is not complete, please describe the dates for completing draft and/or final CEQA/NEPA documents.

This process will not be initiated until CALFED funding has been approved. TNC intends to finish documents by November 2002.

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

5. **Environmental Permitting and Approvals** (*If a permit is not required, leave both Required? and Obtained? check boxes blank.*)

**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

CESA Compliance: 2081

CESA Compliance: NCCP

1601/03

CWA 401 certification                      Required

Coastal Development Permit

Reclamation Board Approval              Required

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:

Permission to access federal land.

Agency Name: U.S. Fish and Wildlife Service

Required

Permission to access private land.

Landowner Name:

**6. Comments.**

# Land Use Checklist

## Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)

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

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?

Yes

3. Do the actions in the proposal involve physical changes in the land use?

Yes

If you answered yes to #3, please answer the following questions:

- a) How many acres of land will be subject to a land use change under the proposal?

1,218

- b) Describe what changes will occur on the land involved in the proposal.

Conversion of agricultural land to restored riparian communities.

- c) List current and proposed land use, zoning and general plan designations of the area subject to a land use change under the proposal.

<b>Category</b>	<b>Current</b>	<b>Proposed (if no change, specify "none")</b>
<b>Land Use</b>	<b>Sunset Ranch- Fallow Rx Ranch- Orchard Deadman Reach- Orchard Kaiser- Fallow</b>	<b>All will be converted to Riparian habitat.</b>
<b>Zoning</b>	<b>Sunset Ranch: A-160 Rx Ranch: AE-40 Deadman Reach: AP-80 Kaiser: A-40</b>	<b>No Changes in the Zoning.</b>
<b>General Plan Designation</b>	<b>Sunset Ranch-Orchard/Field Crop Rx Ranch- Intensive Agriculture Deadman Reach- Orchard/Field Crop Kaiser- Intensive Agriculture</b>	<b>No changes in the General Plan Designations.</b>

- d) Is the land currently under a Williamson Act contract?

Yes

- e) Is the land mapped as Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance under the California Department of Conservation's Farmland Mapping and Monitoring Program?



Yes

If yes, please list classification:

See comments below

- f) Describe what entity or organization will manage the property and provide operations and maintenance services.

**Sunset Ranch and RX Ranch: The Nature Conservancy Dead Man Reach and Capay:  
The Nature Conservancy and U.S. Fish and Wildlife Service**

**4. Comments.**

**Question 3d: 96-acre portion of Sunset Ranch is subject to the Williamson Act. None of the other parcels are subject to the Williamson Act. Question 3e: The parcels Sunset Ranch and Dead Man Reach are designated under the Butte County FMMP as Irrigated Farmland. The Properties in Glenn County (Rx Ranch and Capay) are mapped in the FMMP as the following: Rx Ranch- Prime Farmland and Farmland of Statewide Importance; Capay-Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance.**

# Conflict of Interest Checklist

## Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)

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):**

Ryan Luster, The Nature Conservancy  
Dawit Zeleke, The Nature Conservancy  
Greg Golet, The Nature Conservancy

**Subcontractor(s):**

**Are specific subcontractors identified in this proposal? Yes**

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

Germain Boivin Floral Native Nursery

Mark Leigh Chico State Farms

John Anderson Hedgerow Farms

Ron Unger EDAW, Inc.

None None

None None

None None

None None

**Helped with proposal development:**

**Are there persons who helped with proposal development?**

Yes

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

**Daryl Peterson    The Nature Conservancy**

**Greg Golet    The Nature Conservancy**

**Wendie Duron    The Nature Conservancy**

**Amy Hoss    The Nature Conservancy**

**Carol Wong    The Nature Conservancy**

**Sam Lawson    The Nature Conservancy**

**Comments:**

# Budget Summary

## Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)

Please provide a detailed budget for each year of requested funds, indicating on the form whether the indirect costs are based on the Federal overhead rate, State overhead rate, or are independent of fund source.

### Independent of Fund Source

Year 1												
Task No.	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	Sunset Ranch	186	3061	1133	0	25480	117887	0	0	147561.0	32463	180024.00
2	RX Ranch	218	3502	1296	0	36775	241695	0	0	283268.0	62315	345583.00
3	Kaiser	378	5710	2113	0	80440	377893	0	0	466156.0	102554	568710.00
4	Dead Man Reach	218	3502	1296	0	28860	129807	0	0	163465.0	35962	199427.00
		1000	15775.00	5838.00	0.00	171555.00	867282.00	0.00	0.00	1060450.00	233294.00	1293744.00

Year 2												
Task No.	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	Sunset Ranch	186	3204	1186	0	14260	278707	0	0	297357.0	65419	362776.00
2	RX Ranch	218	3664	1356	0	18530	362170	0	0	385720.0	84858	470578.00
3	Kasier	378	5964	2207	0	47440	630893	0	0	686504.0	151031	837535.00
4	Dead Man Reach	218	3664	1356	0	14580	239287	0	0	258887.0	56955	315842.00
		1000	16496.00	6105.00	0.00	94810.00	1511057.00	0.00	0.00	1628468.00	358263.00	1986731.00

Year 3												
Task No.	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	Sunset Ranch	186	3348	1239	0	8650	248217	0	0	261454.0	57520	318974.00
2	RX Ranch	218	3826	1416	0	11240	308560	0	0	325042.0	71509	396551.00
3	Kaiser	378	6218	2301	0	30940	486393	0	0	525852.0	115687	641539.00
4	Dead Man Reach	218	3826	1416	0	7440	187027	0	0	199709.0	43936	243645.00
		1000	17218.00	6372.00	0.00	58270.00	1230197.00	0.00	0.00	1312057.00	288652.00	1600709.00

**Grand Total=4881184.00**

Comments.

## **Budget Justification**

### **Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)**

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

**Position Hours** Land Steward III 963 Conservation Planner 962 Operations Manager 307  
Program Assistant II 307 Preserve Assistant I 962 Preserve Assistant I 962

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

**Position Hrly Rate** Land Steward III \$30 Conservation Planner \$22 Operations Manager \$27  
Program Assistant II \$17 Preserve Assistant I \$13

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

37% for all categories

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

n/a

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

Task 1: \$48,390 Task 2: \$66,525 Task 3: \$158,820 Task 4: \$50,880 TOTAL: 324,615

**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.

Task 1: \$644,811 Task 2: \$912,425 Task 3: \$1,495,179 Task 4: \$556,121 TOTAL: \$3,560,536

**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.

\$0

**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 presentatons, reponse to project specific questions and necessary costs directly associated with specific project oversight.

Project management activities will include contract management, report preparation, accounting, and inspection of work in progress. Direct labor hours have been budgeted for these activities by Land Steward III (962 hours), Operations Manager (308 hours) and Conservation Planner (192 hours). This equals \$68,846.

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

**\$0**

**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.**

**The Nature Conservancy (TNC) has a Negotiated Indirect Cost Rate (NICRA) of 22% which was negotiated and approved by TNCs cognizant agency, USAID, and calculated in compliance with the requirements of OMB Circular A-122, and bound into our annual OMB Circular A-133 audit reports. TNCs indirect cost per the NICRA includes salaries, fringe benefits, fees and charges, supplies and communication, travel, occupancy, and equipment for general and administrative regional and home office staff. These costs are reflected in the Indirect Costs category of this proposal and are not reflected anywhere else in the proposal budget. Direct staff costs are reflected in the salary and benefits categories of the proposal budget.**

# **Executive Summary**

## **Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)**

**The Nature Conservancy's (TNC) Sacramento River Project requests \$4,950,000 to restore native riparian communities within the Sacramento River's Chico Landing sub-reach (RM 178-206). The project goal is to improve ecological health and long-term viability of communities and at-risk species along the river by protecting and restoring riparian habitat, providing flood damage reduction, and increasing water quality through native horticultural restoration. Project objectives include: 1) develop site-specific restoration plans, 2) replace 1,218 acres of flood-prone agricultural land with native riparian communities to benefit important at-risk wildlife, 3) assess short-term planting success by monitoring plant survival and growth during the first three years of establishment, 4) relate monitoring data to physical and biological tract characteristics to enhance knowledge of the best available techniques for restoring high-quality riparian habitat. Hypotheses to be tested include: 1) soil texture, land-form, and hydrology affect planted species performance, 2) planting grass and forb species in a patchy, heterogeneous pattern will produce vegetation communities that resemble natural understory floristic patterns, 3) planting a native grass and forb layer in the riparian understory will help control the extent of non-native invasive species within the Sacramento River Conservation Area, 4) restoring areas adjacent to remnant natural habitats yields greater ecological benefits than restoring areas removed from these habitats, 5) restoring connectivity between the river and the floodplain will promote natural processes improving ecosystem health and water quality, and reduce flood damage. The expected outcome is to add 1,218 acres of self-sustaining riparian habitat to the Chico Landing sub-reach for approximately 4,863 acres of nearly contiguous protection in this area. This project addresses the following CALFED ERP goals: 1) at-risk species, 2) ecosystem processes and biotic communities, 4) habitats, 5) non-native invasive species, and 6) sediment and water quality. CVPIA goals addressed include: 1) protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley of California, 2) improve habitat for all life stages of anadromous fish, and 3) involve partners in the implementation and evaluation of restoration actions.**

# **Proposal**

**The Nature Conservancy**

**Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)**

**Ryan Luster, The Nature Conservancy**

**Dawit Zeleke, The Nature Conservancy**

**Greg Golet, The Nature Conservancy**



## **Sacramento River Restoration: Chico Landing Sub-Reach (RM 178-206)**

### **Section A: Project Description: Project Goals and Scope of Work**

#### **A.1. Problem**

Since settlement of the Central Valley began in the 1850's, the Sacramento River has been drastically altered. Originally there were approximately 800,000 acres of riparian forest along the main stem of the Sacramento River (Katibah 1984). The entire valley floor, including major tributaries to the Sacramento River, probably contained 900,000 to 1,600,000 acres of riparian habitat, with the width of the forest sometimes ten miles wide. Riparian forests and associated aquatic habitats were once common within the meander belt and on alluvial terraces of the Sacramento River; however, 95% has been destroyed by firewood collection, agriculture, flood control projects, urban development, and hydropower development. Cumulatively, these changes have drastically reduced high-quality habitat and placed a high level of stress on the Sacramento River and its associated species.

Draining 24,000 square miles of the northern Central Valley and typically supplying 80% of freshwater flowing into the Bay-Delta, the Sacramento River is a fundamental state water resource (California State Lands Commission 1993). The Sacramento River captures a rich mosaic of aquatic habitats, oxbow lakes, sloughs, seasonal wetlands, riparian forests, valley oak woodlands, and grasslands making it the most diverse and extensive river ecosystem in California. The Sacramento River's riparian communities are sustained by ecological processes (primarily flooding) that drive changes in geomorphology and vegetation succession (Gregory et al. 1991, Baker and Walford 1995). Riparian habitats contain a great diversity of flora and fauna due to the diversity in community types, their overall structural diversity, availability of water and soil moisture, and potential as corridors for migration (California State Lands Commission 1993, California Resources Agency 2000). Riparian corridors provide two primary functions essential to maintaining water quality: 1) moderate stream temperature and 2) reduce sediments and nutrients emanating from upland agriculture (Castelle et al. 1994, Altier et al. 2001). Riparian areas provide critical breeding, migratory, and/or permanent habitat for a host of important flora and fauna.

Restoring riparian communities is critical for improving the degraded quality of habitat for threatened, endangered, and common species (RJHV 2000) and creating new areas of native riparian habitat to connect remnant riparian patches and support endangered fish, wildlife, and invertebrate species. A suite of declining fish species depend upon the Sacramento River, including four races of Chinook salmon (*Oncorhynchus tshawytscha*) - fall, late fall, winter, and spring-run (Yoshiyama et al. 1998), Sacramento splittail (*Pogonichthys macrolepidotus*) (Moyle and Yoshiyama 1994), steelhead trout (*Oncorhynchus mykiss*), and green sturgeon (*Acipenser medirostris*) (Sacramento River Advisory Council 2000). Chinook salmon and steelhead trout depend on the river as a migration corridor, while the Sacramento splittail is a resident species endemic to the Central Valley. Historically, winter-run Chinook numbered 200,000 annually, spring-run about 600,000, and fall-run between 200,000 and 500,000 (Ward 1997). Winter-run Chinook are classified as a federally threatened species, while spring-run Chinook and Sacramento Splittail have declined dramatically (Yoshiyama et al. 1998). Additional special-status species associated with Sacramento River riparian communities include the bald eagle (*Haliaeetus leucocephalus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Swainson's hawk (*Buteo swainsoni*), bank swallow (*Riparia riparia*), giant garter snake

(*Thamnophis couchi gigas*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The proposed project will promote the recovery of these declining species by providing much-needed habitat.

Active horticultural restoration along the Sacramento River has demonstrated the feasibility to successfully establish a number of dominant plant species (e.g., *Rosa californica*, *Populus freemontii*, *Salix spp.*, *Quercus lobata*, *Fraxinus latifolia*) within one to four years of planting (Alpert et al. 1999) and that bird diversity and usage increase significantly within five years of planting (Small et al. 2000). The Nature Conservancy (TNC) believes that immediate, active restoration of the tracts proposed in this proposal is the most effective solution to the problem of insufficient high-quality habitat in this area.

Project Location: This project seeks funding for restoration implementation on four tracts within the Chico Landing Sub-reach (RM 178-206), a portion of the Sacramento River Conservation Area (SRCA) that has been the focus of several CALFED funded acquisitions and CALFED funded modeling and studies to specifically address restoration planning for this subreach. Two of the tracts, Capay (formerly known as Kaiser) and Dead Man Reach (formerly known as Koehnen), are part of the U.S. Fish and Wildlife Service (USFWS) Sacramento National Wildlife Refuge Complex. The two other tracts are private conservation lands, currently owned by TNC (RX Ranch and Sunset Ranch). Both RX Ranch and Sunset Ranch will eventually be transferred to public ownership. Three of the tracts were acquired with CALFED funding (Capay, Dead Man Reach, and RX Ranch).

All four tracts are located within the Inner River Zone of the Sacramento River Conservation Area (Sacramento River Advisory Council 2000). Dead Man Reach and Sunset Ranch are located in Butte County, Capay and RX Ranch are located in Glenn County. While the proposed project stands alone, it is one of several complementary proposals being submitted to CALFED for 2002 funding (see section B.5.).

Project Goal: The goal of this project is to improve the ecological health and long-term viability of at-risk species, ecological communities, and human uses along the Sacramento River by protecting and restoring riparian habitat, providing flood damage reduction, and improving water quality through horticultural restoration.

#### Project Objectives

1. Develop tract-specific restoration plans using information generated from CALFED 97 NO-2 funded sub-reach planning.
2. Replace 1,218 acres of flood-prone agricultural land with native riparian communities that will benefit important at-risk wildlife species.
3. Assess the short-term planting success by monitoring plant survival and growth during the first three years of establishment.
4. Relate monitoring data to physical and biological tract characteristics of the tracts to enhance our knowledge of the best available techniques for restoring high-quality riparian habitat.

#### Project Hypotheses

1. Edaphic factors, geology, and hydrology affect planted species performance.
2. Planting grass and forb species in a patchy, heterogeneous pattern will produce vegetation communities that resemble natural understory floristic patterns.

3. Planting a native grass and forb layer in the riparian understory will help control the extent of non-native invasive species (NIS) within the Sacramento River Conservation Area.
4. Restoring areas that are adjacent to remnant natural habitats yields greater ecological benefits than restoring areas that are removed from these habitats.
5. Restoring connectivity between the river and the floodplain will promote natural processes that improve ecosystem health and water quality, and reduce flood damage.

## **A.2. Justification**

Conceptual Models: TNC's Sacramento River Project continues to actively restore riparian communities along the Sacramento River between Red Bluff and Colusa where natural river processes have been severely altered and habitat has either disappeared or been degraded. Three conceptual models provide the foundation for TNC's work on the Sacramento River: project programmatic (Figure 1), ecological (Figure 2), and restoration programmatic (Figure 3). The conceptual models were developed through a framework called Conservation by Design (TNC 2001) that guides TNC to develop and implement conservation strategies at the tract level that meet regional ecological conservation goals. The programmatic conceptual model demonstrates how restoration activities are organized to accomplish the specified objectives. The ecological conceptual model shows the anticipated positive response that the proposed restoration actions will have on the ecosystem while the restoration conceptual model provides a framework for TNC's restoration activities.

Actively restoring 1,218 acres of floodplain habitat within the Chico Landing sub-reach will alleviate the stress that habitat loss has placed on wildlife and will improve water quality for both humans and wildlife (Clausen et al. 2000). Three of these restoration tracts were purchased under a CALFED 97 NO-2 grant adding to over 3,800 acres of land already in conservation ownership within this sub-reach. The Chico Landing sub-reach is an ideal portion of the SRCA to conduct landscape-scale conservation and restoration. Located at the top of the Butte Basin flow split and the top of the unlevied portion of the Sacramento River, the Chico Landing sub-reach encompasses a relatively unconfined section of the Sacramento River floodplain (Figure 4). The restoration tracts in the Chico Landing sub-reach experience regular flooding and have variable soils, two factors that create an adverse environment for farming but an ideal environment for habitat restoration.

Project Type: This is a full-implementation project proposal. Active horticultural restoration is often an important component of ecosystem restoration where natural regeneration is slow to occur or NIS vegetation dominates or threatens to dominate a site (Whisenant 1999). Active horticultural restoration can aid in the rehabilitation of restoring riparian communities where natural recruitment of riparian vegetation is currently impeded by diminished erosional and depositional processes (Friedman and Scott 1995) and other alterations to the natural hydrograph (Mahoney and Rood 1998, Andersson et al. 2000, Tu 2000). By restoring key areas along the Sacramento River and transferring these properties to appropriate land stewards, including the USFWS Sacramento National Wildlife Refuge Complex and the California Department of Fish and Game, we can provide important, high-quality habitat to flora and fauna dependent upon this vital system (Moyle and Yoshiyama 1994, Point Reyes Bird Observatory 2000). In addition to benefiting riparian-associated species, riparian corridors provide numerous benefits to the

growing human population of the Central Valley. These benefits include improved water quality (Osborne and Kovacic 1993), flood damage reduction, recreational opportunities and aesthetics.

Adaptive Management: The restoration designs that TNC's project develops are the products of an integrative process that draws from extensive past experiences in planning, implementing, and evaluating restoration on the Sacramento River. We are continually refining our restoration planning methodologies by incorporating information from past experiences into a multifaceted adaptive management process. Information that feeds into this process includes a variety of perspectives on restoration outcomes. These perspectives include tract response, species response, and social response.

Tract response data from adjacent revegetation tracts gives us information on how plants and communities interact with different edaphic factors, hydrology, and management techniques (Sacramento River Project 1999, 2000). TNC's short-term monitoring has shown that, in general, grassland and savanna communities do best on tracts with low water tables and larger particle size soils while forest communities do best on tracts with high water tables and more productive soils.

To date, TNC has primarily focused on bird and fish response to evaluate restoration success. Point Reyes Bird Observatory (PRBO) has devised tract-specific restoration and adaptive management recommendations for TNC and the USFWS. These recommendations are based on TNC and USFWS monitoring results and the Riparian Bird Conservation Plan produced by PRBO's Riparian Habitat Joint Venture (PRBO 2000). PRBO has been annually monitoring riparian restoration tracts since 1993 in cooperation with TNC, USFWS, and California Partners in Flight (Small et al. 2000). In 1999, PRBO formalized a five-year monitoring plan to determine songbird response to TNC's riparian restoration efforts (Geupel et al. 1999). PRBO comments on restoration plans and works closely with TNC to implement positive management plans for the benefit of bird populations.

PRBO's recommendations have focused on improving nesting habitat for open-cup nesters, with an emphasis on increasing understory structural and compositional diversity. PRBO's baseline monitoring results show that bird species begin to colonize restoration tracts within the first several years of being planted (S. Small, PRBO, personal communication). After five years, numerous species including the California threatened yellow-billed cuckoo have colonized and begun breeding in the restoration tracts. Overall, research suggests that riparian bird diversity increases significantly as restoration tracts mature (Small et al. 2000).

In addition to PRBO, TNC also funds Dr. Michael Marchetti of California State University, Chico to study habitat utilization patterns of floodplain fish usage on the Sacramento River. The results from this research will feed into TNC's adaptive management program by providing important information on the role floodplains play in fish feeding strategies. Another TNC led CALFED 2002 proposal builds upon the experience gained from the short-term vegetation, songbird, and fish monitoring programs. "The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS," proposal seeks to determine whether current cultivated restoration strategies are maximizing ecosystem benefits and function for flora and fauna.

Social response to our restoration work comes from TNC's Sub-Reach Planning program which gathers stakeholder feedback and evaluates restoration management actions from the standpoint of their impacts on important human services (e.g., flood damage reduction, water quality) and infrastructure (e.g., bridges and water-conveyance facilities). Social response

includes working directly with landowners adjacent to the restoration tracts through public meetings and private consultation to ensure their considerations are incorporated into plant designs prior to developing final restoration plans. TNC has funded a study of anticipated habitat restoration impacts on the local economy, public access, cultural resources, and will evaluate what effects our restoration actions have on these elements (see Attachment 1, p.21). In addition, under guidelines of the USFWS, TNC does not plant elderberry (*Sambucus mexicana*) within 200 feet of private property to help prevent migration of the threatened valley elderberry longhorn beetle on to adjacent private property.

#### Hypothesis Testing:

Hypothesis 1: “Edaphic factors, geology, and hydrology affect planted species performance.” TNC will test hypothesis 1 by comparing species response at the proposed restoration tracts to species response data collected from older tracts with similar edaphic factors, hydrology, and within the Chico Landing sub-reach controlling for irrigation, weed control, and other such management practices. Species response will include tree height and survival (discussed in Section A.5.). Such comparisons will provide information correlating species response to tract characteristics such as edaphic factors, geology, hydrology, and will provide important information for restoration activities along the river where similar tract characteristics occur.

Hypothesis 2: “Planting grass and forb species in a patchy, heterogeneous pattern will produce vegetation communities that resemble natural understory floristic patterns.” Replicated experimental plots will be established at each tract to quantitatively compare species establishment as functions of different grassland restoration techniques. Techniques to be employed include altering tract preparation methods, seeding rates, plug densities, and species compositions. Information generated from these tests will be invaluable for guiding future riparian understory restoration techniques along the Sacramento River. To date, very little grassland restoration has occurred along the river and information is needed to determine the most efficient techniques for establishing a healthy and diverse riparian understory.

Hypothesis 3: “Planting a native grass and forb layer in the riparian understory will help control the extent of non-native invasive species (NIS) within the Sacramento River Conservation Area.” The same experimental plots used to test hypothesis 2 will be used to test hypothesis 3. Experimental plots will be evaluated to determine the effectiveness of tract preparation and planting techniques on controlling NIS density over the first three years of establishment. It is uncertain what native understory species and in what compositional patterns would effectively help to control NIS density.

Hypotheses 4 and 5: TNC is not seeking funding in this proposal to test these hypotheses; however, TNC has submitted a complimentary proposal entitled “The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS” in an effort to develop research and monitoring studies to address factors affecting ecosystem response. These responses are addressed in hypotheses 4 and 5.

### **A.3. Approach**

TNC will use horticultural restoration techniques to restore appropriate tract-specific vegetation communities as determined through the Chico Landing Sub-Reach planning process. Sub-reach planning can be summarized as a shift from small-scale, parcel size planning to large,

floodplain-scale planning to evaluate restoration actions in the context of other land uses and infrastructure along the river. TNC and the SRCA delineate Sacramento River sub-reaches based on geomorphology and sociopolitical conditions. Planning at a subreach scale allows for the consideration of human uses of the floodplain and physical and biological processes (Goodwin et al. 1997) in addition to habitat value.

Task 1-4: Restoration of Sunset Ranch (186 acres), RX Ranch (243 acres), Capay (550 acres) and Dead Man Reach (243 acres).

Sub-Task 1: Restoration planning.

Restoration plans will be based on the Chico Landing Long-term Management Plan being developed under CALFED 97 NO-2. The Chico Landing Sub-Reach Planning process is an integral part of the management planning discussed in Attachment 1: CALFED 97 NO-2 Status Report for Next-Phase Funding. The restoration planning process will compile information collected in the Sub-Reach Planning process; this information will then be used to write a tract-specific Restoration Plan for each proposed restoration tract. Information in the Restoration Plan will include location, background information, objectives including ecological and management goals, a three year detailed schedule of activities, planning (a summary of the baseline assessment activities and findings, the planting design, and nursery propagation activities), identifying compliance issues (permits, contracts, monitoring, and reporting), fieldwork to be accomplished (tract preparation, irrigation installation, planting), maintenance (weed control and irrigation), and figures (topographic, flood recurrence, and plant design maps, and aerial photographs). The USFWS Sacramento National Wildlife Refuge, prior to implementing restoration, will approve restoration plans for Capay and Dead Man Reach.

Sub-Task 2: Seed collection, plant propagation, tract preparation, planting, maintenance and monitoring.

The tracts currently have a weed dominated herbaceous cover that will require repeated tilling and herbicide (glyphosphate, “Round-Up”) applications prior to planting to decrease NIS density (Griggs and Peterson 1997). After planting, aisles will be mowed and herbicide sprayed around planted vegetation in the rows to deter NIS from setting seed. Irrigation systems are already in place at all four tracts, but will need repair and modifications to meet restoration goals. Tracts will be irrigated, generally, at low frequencies and for long-durations depending on tract conditions.

Planting and tract maintenance will be contracted out through a competitive bidding process to local farmers and overseen by TNC. Plant materials collection will be conducted by TNC staff while plant materials propagation will be contracted out to local nurseries: California State University Farms, Chico; Floral Native Nursery, Chico; Hedgerow Farms, Winters. Planting will occur in two phases: 1) potted stock, acorns, and drilled grass seeds will be planted beginning in fall 2002, and 2) willow and cottonwood cuttings will be planted in the Winter/Spring of 2003. The contracted farmers, using their own equipment, could begin preparations in summer 2002 and will accomplish tract preparation, planting, and maintenance.

Based on preliminary baseline assessment data collected to date and to be completed by Summer 2002, TNC will plant one of three general plant communities to revegetate a tract: forest, savanna, or grassland (Sawyer and Keeler-Wolf 1995). The four proposed restoration

tracts described below are illustrated in Figure 4. Table 1, below, identifies the mix of communities to be planted per tract.

Sub-Task 3: Well abandonment.

At the end of all restoration activities, TNC will contract out to a certified well abandonment company to properly fill and cap wells on the restoration tracts based on county requirements. This is an important component of the restoration process to ensure floodwaters do not contaminate groundwater supplies.

Table 1. Community composition per tract (in acres) to be restored.

Tract Name & Acres	Sunset Ranch (187 acres)	RX Ranch (246 acres)	Capay (661 acres)	Dead Man Reach (553 acres)	Total
Forest	20	10	155	55	240
Savannah	6	202	355	100	663
Grassland	161	31	40	83	315
Total acres	187	243	550	238	<b>1218</b>

Criteria for Hypothesis Testing

Criteria for successful restoration during this three year phase is 80% survival averaged across woody species (tree and shrub potted stock, acorns, and cuttings), 80% or more frequency for planted understory species (grasses and forbs), and 20% or less frequency for NIS understory vegetation. Monitoring methods are described in Section A.5.

Information Richness and Value for Decision Makers

Previous work has demonstrated that parameters such as edaphic factors, hydrology, and geology play an important role in affecting restoration success (Griggs and Peterson 1997, Alpert et al. 1999, Sacramento River Project 1999, 2000) though it is uncertain how these parameters specifically affect species success in this sub-reach. Consequently, the short-term monitoring program outlined in this proposal will provide information on species response to these parameters, thereby increasing knowledge of the relationship between species success and information gathered in baseline assessments. Furthermore, evaluating understory restoration techniques will provide invaluable information on how to best establish native understory vegetation in riparian restoration projects.

**A.4. Feasibility**

TNC has access rights and permission to carry out the activities of this proposal on all tracts included in this request for funding. Capay and Dead Man Reach are owned by USFWS, and managed by TNC under a Cooperative Land Management Agreement (CLMA) with the USFWS. As part of this Agreement, TNC is obligated to restore riparian habitat on Capay and Dead Man Reach. Although RX Ranch and Sunset Ranch are owned by TNC, TNC anticipates it will transfer Sunset Ranch to the USFWS by Fall 2002; a transfer date for RX Ranch to the Department of Fish and Game’s (DFG) Pine Creek Unit or other appropriate conservation agency or land trust has yet to be determined. The U.S. Fish and Wildlife Service (USFWS) is developing an Environmental Assessment (EA) for the restoration of several units of the Sacramento National Wildlife Refuge, including Capay, Dead Man Reach, in addition to the TNC owned Sunset Ranch (Jones and Stokes 2001). Environmental compliance actions for RX

Ranch are included within this proposal and will be conducted prior to restoration implementation. TNC will contract with EDAW, Inc., Sacramento, CA, to complete the environmental compliance. EDAW has over fifty-five years of experience in the environmental field and has more than twenty offices worldwide, including six offices in California. EDAW has prepared over 500 CEQA and NEPA documents for projects in northern California.

TNC has been restoring native riparian habitat on the Sacramento River since 1989 on properties owned by TNC, USFWS, and the Department of Fish and Game (Griggs and Peterson 1997). To date, TNC and its partners have secured over 15,000 acres for conservation within the 100-year floodplain between Red Bluff and Colusa. TNC staff and seven contracted local farmers have planted over 2,800 acres of riparian habitat on twelve different tracts. These planting methods have been continually refined since 1989 by TNC staff through adaptive management (Sheehan and Griggs 1994, Hujik and Griggs 1995a, Hujik and Griggs 1995b). TNC's experience demonstrates the feasibility of restoring self-sustaining riparian communities within 1 to 4 years after planting (Alpert et al. 1999).

Timing of the restoration activities is flexible; planting can begin as early as October and can be completed as late as June. This wide planting window accounts for weather and flooding events, the ability to irrigate affords a large degree of flexibility in timing planting schedules. This work will be completed within the three-year grant period.

#### **A.5. Performance Measures**

Tract-specific measurements of the establishment, survival, and growth of plantings provides a first and most basic measure of project success or failure. Measurements at restoration tracts determine if planting has met design specifications, indicate initial success, and encourage the development of better restoration techniques. Performance measures will consist of three monitoring phases for each of the four tracts during the three-year life of the project. These monitoring phases will include 1) a 30-day post-planting evaluation, 2) end of growing season monitoring, and 3) project completion monitoring.

The 30-day post-planting monitoring will be conducted one month after all riparian species have been planted in spring 2003. Based on previous monitoring results, a census conducted on 10% of each community type planted adequately captures survival per species per community (Sacramento River Project 1999, 2000). Results from the 30-day post-planting monitoring will provide baseline establishment and survival data against which end of growing season and project completion monitoring will be compared. End of growing season monitoring will be conducted in December for three years (2003, 2004, and 2005) while project completion data will be collected once in fall 2005. In addition, TNC will measure average height at each monitoring phase that allows comparisons of species growth across different restoration tracts.

TNC will require the contracted farmers to meet an 80% survival requirement averaged across all potted stock trees and shrubs, acorns, and cuttings as well as 80% frequency for understory forb and grass species. The 80% survival and frequency requirements must be met at the end of each growing season and project completion monitoring phases in order for contracted farmers to be paid for their restoration activities. TNC uses an 80% survival rate because, to date, this has been the minimum survival rate monitored at TNC restoration tracts and therefore this has been an easy goal for contracted farmers to meet. If a farmer does not meet the 80% requirement, TNC will conduct a more in-depth census to determine if factors outside the control of the farmer were responsible for poor species performance.



TNC is also engaged in longer-term studies of ecosystem response. Under Task 2 of TNC's CALFED 97 NO-3 agreement, a monitoring plan is being developed and implemented. Accordingly, TNC has been working with PRBO (see Section A.2. Justification, Adaptive Management) and California State University, Chico to monitor tract-based ecological function including monitoring groundwater quality, soil development, and nutrient cycling (C and N dynamics) as functions of restoration age (Brown and Wood 2000). In addition, through the 2002 CALFED Proposal Solicitation Package, TNC is proposing a monitoring project that will assess landscape-scale ecological function on previously restored tracts, as well as the four tracts included in this restoration proposal. The landscape-scale monitoring proposal ("The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS ") seeks to demonstrate that restoration success can be predicted via modeling tract-specific (e.g., edaphic factors, geology, hydrology) and landscape-scale parameters (e.g., proximity to remnant riparian vegetation, flooding frequency and intensity).

#### **A.6. Data Handling and Storage**

TNC's Sacramento River Project office in Chico, CA will produce and keep on file the 30-day post-planting, end of growing season, and project completion monitoring results up to three years following the completion of the project. Data are stored in Excel spreadsheets while annual and quarterly reports (see Table 2 below) are done in Microsoft Word. Data management and dissemination will be handled by the Information Center for the Environment (ICE) housed within the College of Agriculture and Environmental Sciences at the University of California, Davis. The ICE plays a key role in developing and applying natural resource science to environmental issues of local, regional, and national significance. As the central data repository and dissemination mechanism for this project, ICE will provide database development and support, and develop easy-to-use public access to a wide variety of environmental information through the ICE Web server (<http://ice.ucdavis.edu/>).

#### **A.7. Expected Products and Outcomes**

##### Task 1-4

Subtask 1 deliverable: All restoration plans will be provided to CALFED by November 30, 2002.

Subtask 2 deliverables: TNC will provide CALFED with quarterly programmatic and financial reports, and annual reports that will include progress to date and monitoring results. TNC will provide restoration activity updates to the Sacramento River Conservation Area Technical Advisory Committee and Board. In addition, TNC will complete all necessary environmental compliance requirements prior to restoration implementation.

Each tract is listed as a task to facilitate fiscal reporting. Within each task (tract) are two sub-tasks with their corresponding deliverables. Tasks, sub-tasks, deliverables, and deliverable dates are listed in Table 2 below.

Subtask 3 deliverable: TNC will contract out to a certified well abandonment company to permanently seal wells in accordance with county regulations at the end of the restoration process at each of the proposed restoration tracts.

Table 2: Tasks, sub-tasks, deliverables, and deliverable dates.

<b>Task</b>	<b>Sub-Task</b>	<b>Deliverable</b>	<b>Deliverable Date</b>
1. Sunset Ranch (187 acres)	1. Restoration planning.	Restoration plan	10/30/02
	2. Seed collection, propagation, tract preparation, planting, maintenance, and monitoring.	Quarterly report Annual report	1/10, 4/10, 7/10, and 10/10/03 - 05 1/30/03 - 05
	3. Well abandonment.	Certificates of well abandonment	12/31/05
2. RX Ranch (243 acres)	1. Restoration planning.	Restoration plan, Environmental documentation	10/30/02
	2. Seed collection, propagation, tract preparation, planting, maintenance, and monitoring.	Quarterly report Annual report	1/10, 4/10, 7/10, and 10/10/03 - 05 1/30/03 - 05
	3. Well abandonment.	Certificates of well abandonment	12/31/05
3. Capay (550 acres)	1. Restoration planning.	Restoration plan	10/30/02
	2. Seed collection, propagation, tract preparation, planting, maintenance, and monitoring.	Quarterly report Annual report	1/10, 4/10, 7/10, and 10/10/03 - 05 1/30/03 - 05
	3. Well abandonment.	Certificates of well abandonment	12/31/05
4. Dead Man Reach (238 acres)	1. Restoration planning.	Restoration plan	10/30/02
	2. Seed collection, propagation, tract preparation, planting, maintenance, and monitoring.	Quarterly report Annual report	1/10, 4/10, 7/10, and 10/10/03 - 05 1/30/03 - 05
	3. Well abandonment.	Certificates of well abandonment	12/31/05

Project Management

Project management will include contract management and writing quarterly and annual reports to CALFED. Project management has been allocated for and delineated in the Budget Summary form (web form VI) and Budget Justification form (web form VII).

**A.8. Work Schedule**

Please see attached Table 3 (p.24) for a detailed work schedule. Each of the tasks in Table 2 is individual tracts and is therefore separable funding items. Due to the nature of the restoration process, none of the sub-tasks listed for each task are separable for incremental funding.

## **Section B: Applicability to CALFED Ecosystem Restoration Program (ERP) and Science Program Goals and Implementation Plan and Central Valley Project Improvement Act (CVPIA) Priorities**

### **B.1. ERP, Science Program, and CVPIA Priorities**

The primary focus of TNC's Sacramento River Project is to restore and sustain the diversity of riparian, wetland, and aquatic species and habitats between Red Bluff and Colusa in collaboration with local, state, and federal agencies and local landowners. This is aligned with CALFED's Sacramento Region goal 1 (SR-1): "develop and implement management and restoration actions in collaboration with local groups such as the Sacramento River Conservation Area Non-Profit Organization." The five coordinated proposals submitted by TNC's Sacramento River Project in the 2002 Proposal Solicitation Package complement each other to protect and restore the Sacramento River meander corridor between Red Bluff and Colusa. These coordinated projects are each designed to stand-alone; however, they accomplish habitat protection, habitat restoration, ecosystem processes, coordinated floodplain management, and habitat restoration monitoring in order to address many of CALFED's Implementation Plan goals and CVPIA priorities (PSP Sacramento Region Priorities 1, 3, 4, 7, ERP Goals 1, 2, 4, 5, and 6, Key CALFED Science Program Goals and CVPIA Goals).

This restoration proposal specifically addresses many of the ERP Science Program goals, and CVPIA priorities. TNC has worked closely with the SRCA Non-Profit within the guidelines of the Sacramento River Conservation Area handbook (Sacramento River Advisory Council 2000) to develop the restoration activities outlined in this proposal. By increasing riparian habitat in the Sacramento River Conservation Area, this proposed project is designed to help protect and restore the stream meander corridor between Red Bluff and Colusa (PSP SR-1). The proposed project adds 1,218 acres of riparian habitat to the Chico Landing sub-reach for a total of approximately 4,863 acres of nearly contiguous protection (restored plus conservation lands) to ameliorate habitat loss and fragmentation. At-risk riparian species, as well as common riparian species, will benefit from protection and restoration of large expanses of habitat along the main stem of the Sacramento River. This project will help improve and connect important habitat for at-risk and declining riparian species (ERP Goals 1 and 4).

RX Ranch is an unproductive almond orchard with missing trees and damage from frequent flooding and deposition. Capay Ranch has been fallow and dominated by NIS vegetation for several years while NIS vegetation has been the primary component of the understory at Sunset Ranch. Successfully establishing native understory and overstory vegetation in the four parcels proposed for restoration will help control and reduce the number of weed-dominated acres along the Sacramento River thereby reducing their negative biological and economic impacts (MR-1, ERP Goal 5).

Restoration of the proposed tracts will allow natural processes such as erosion and deposition (channel meander) to occur in select areas along these tracts. This will help to increase spawning gravel to the channel in this area, an important factor in anadromous fish reproduction success. Additionally, a long-term benefit of restoring these tracts will be to help provide in-stream complexity in the form of large woody debris that falls into the river as the tracts erode (PSP SR-2 and SR-4, ERP Goal 2).

Restoration of flood-prone land along the Sacramento River will help improve water and sediment quality in the river. Replacing flood-prone agriculture with riparian habitat decreases pesticide and herbicide use on land adjacent to the river, thereby contributing to improved water

quality. Additionally, riparian forests act as a buffer and filter for toxic runoff of anthropogenic sources of organic matter that originate further away from the river, thereby helping to improve water and sediment quality (ERP Goal 6).

CALFED Science Program Goals: *Develop performance measures.* With ten-year old restoration tracts, TNC has the ability to look at the long-term and continued success of restoration work along the Sacramento River. A complementary CALFED 2002 proposal, “The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS,” will incorporate information from a number of TNC’s restoration tracts, including data collected in this proposed restoration project to adaptively manage and improve riparian protection and restoration along the Sacramento River.

CVPIA Priorities: The proposed project addresses the following CVPIA goals and Anadromous Fish Restoration Program (AFRP) objectives:

1. Protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins of California;
2. Improve habitat for all life stages of anadromous fish by providing flows of suitable quality, quantity, and timing, and improved physical habitat; and
3. Involve partners in the implementation and evaluation of restoration actions.

Restoring complex riparian habitat along the Sacramento River will improve habitat for fish and wildlife. Fish benefit from complex riparian areas that become flooded at high flows, slow floodwaters down, and provide refugia for young and juvenile fish (Sommer et al. 2001).

## **B.2. Relationship to Other Ecosystem Restoration Projects**

TNC’s Sacramento River project is part of a collaboration of public and private partners whose goal is to establish a riparian corridor within approximately 30,000 acres of the Sacramento River Conservation Area (SRCA). Over the last decade, TNC has worked with local governments and organizations to protect and restore habitat and establish a limited meander along the Sacramento River between Red Bluff and Colusa. This partnership is formalized under a Memorandum of Agreement with local, state, and federal agencies and coordinated through the SRCA Non-Profit. Projects and organizations working in partnership toward this goal include the USFWS’ Sacramento National Wildlife Refuge Complex, California Department of Fish and Game, Department of Parks and Recreation, Department of Water Resources, Army Corps of Engineer’s Comprehensive Study, Riparian Habitat Joint Venture, Sacramento River Preservation Trust, and Sacramento River Partners. Numerous programs, including CALFED, CVPIA, and state and federal agencies such as California Wildlife Conservation Board, U.S. Environmental Protection Agency, and many private foundations and individuals have supported these efforts.

This proposal builds on 2,800 acres of habitat restoration that has occurred along the Sacramento River between Red Bluff and Colusa. The Chico Landing sub-reach is the site of recent acquisitions and subsequent management planning to address ecosystem restoration funded by CALFED (CALFED 97 NO-2). Hydraulic and geomorphic modeling, Hamilton City hydraulic modeling and foundation investigation, baseline assessments, and restoration plant designs have been funded through TNC’s 97 NO-2 CALFED agreement. These projects have been conducted to identify and address potential third party impacts that may result from

ecosystem restoration efforts. Capay and RX Ranch are also within the subject area of the potential J Levee relocation - an ecosystem/flood damage reduction project that includes collaboration between Hamilton City Community Services District, Army Corps of Engineers Comprehensive Study, SRCA, local landowners, Ayers Associates, and the Hamilton City Working Group (including CALTRANS, state legislative representatives, Glenn County supervisors, and the Family Water Alliance).

By implementing this project and addressing the hypotheses put forward in Section A.2., TNC seeks to enhance the body of scientific knowledge regarding the best available ecosystem restoration science. This proposal builds on experience gained from horticultural restoration efforts to revegetate the Sacramento River floodplain conducted since the late 1980s. Horticultural restoration significantly increases habitat value on the floodplain as evidenced by listed species now inhabiting restoration tracts (Small et al. 2000). However, it is unknown whether current cultivated restoration strategies are maximizing ecosystem benefit and function. This will be addressed through a CALFED 2002 proposal led by TNC titled “The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS.” An overview of how science is currently being used to evaluate restoration efforts and ecosystem health on the Sacramento River Project is provided in Golet et al. (*in review*).

It is unknown how alterations in flow regimes would affect actively restored tracts and/or create new habitat through process restoration. Therefore, it is necessary to evaluate how alterations to the flow regime would both create new natural habitat, and subject restoration tracts to river processes that may enhance their ecological function. This is being addressed through a CALFED 2002 proposal led by TNC titled “Implementing a Collaborative Approach to Quantifying Ecosystem Flow Regime Needs for the Sacramento River.”

Lastly, TNC is spearheading a CALFED 2002 proposal to address sub-reach planning in the Colusa sub-reach titled “Sub-Reach Planning for the Sacramento River: River Miles 144-164.” Information gathered through this sub-reach planning process will provide the basis for which restoration activities will be implemented and further refined.

### **B.3. Request for Next-Phase Funding**

This proposal is a request for next-phase funding to implement the restoration of properties acquired in the Chico Landing sub-reach under a previously awarded CALFED agreement (CALFED 97-NO2). Under the CALFED 97-NO2 agreement, acquisition of Capay, RX Ranch and Dead Man Reach is complete, and start-up stewardship activities are being conducted and a Long-term Management and Monitoring Plan developed. Attachment 1 (p.21), “CALFED 97 NO-2 Status Report for Next-Phase Funding,” describes the accomplishments to date and status of this ongoing project.

### **B.4. Previous Recipients of CALFED Program or CVPIA Funding**

To date, TNC’s Sacramento River Project has been awarded five CALFED and three CVPIA grants to further the goals of protection and restoration within the Sacramento River Conservation Area. Two grants focused on restoration planning, and the remaining 6 grants have been used to plan and implement protection and restoration actions on approximately 2985 acres. Project titles and numbers, specific accomplishments, and progress to date are summarized in attached Table 4 (p.25).

## **B.5. System-Wide Ecosystem Benefits**

TNC's Sacramento River Project works with public agencies and private organizations to restore a riparian corridor and limited river meander within the Sacramento River Conservation Area. Four programmatic phases comprise TNC's Sacramento River Project synergistic approach to ecosystem restoration in an adaptive management framework (Figure 1):

1. cooperative integrative floodplain management planning;
2. habitat acquisition and baseline assessment;
3. horticultural and process restoration; and
4. ecosystem response monitoring and research.

This framework furthers the goals of the following programs: SRCA Non-Profit, Central Valley Project Improvement Act, Central Valley Habitat Joint Venture, Sacramento River National Wildlife Refuge, Department of Fish and Game's Sacramento River Wildlife Area, California Riparian Habitat Conservation Program, Riparian Habitat Joint Venture (Partners in Flight), and the Army Corps of Engineers Comprehensive Study.

Through our work with partners and stakeholders, this approach offers substantial system-wide ecosystem benefits. By using both horticultural and natural-process restoration in an adaptive management framework, these collective efforts are successfully restoring the viability of native species and reducing the proliferation and adverse impacts of non-native invasive species. Specifically, the effort to establish a continuous riparian corridor along the Sacramento River is already improving the health of local wildlife populations by promoting the recolonization of areas where local extirpations have taken place. Several taxa, including the state threatened yellow-billed cuckoo and the federally threatened Valley elderberry longhorn beetle, have colonized and successfully bred on restoration tracts.

The ecological benefits of our restoration activities extend far beyond the reaches of the project area. For many species the main stem of the Sacramento River is a migratory pathway. By making the habitat in this region more supportive of migratory species this project will bolster breeding and wintering populations in areas physically removed, but ecologically linked to the Sacramento River. Examples include the habitat benefits to neotropical migratory birds and anadromous fish. Additionally, improvements in water quality as a result of restoration efforts have positive impacts all the way down the Sacramento River into the Bay-Delta.

**B.6. n/a**

## **Section C: Qualifications**

The project will be conducted under the guidance and management of TNC's Sacramento River Project.

The Nature Conservancy (TNC) is an international non-profit organization; our mission is to preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Founded in 1951, TNC and its one million members have safeguarded more than 11.6 million acres in the United States. TNC of California, headquartered in San Francisco, has 110,000 members and has protected nearly one million acres in the state.

TNC employs an integrated conservation framework called "Conservation By Design" to fulfill its long-term vision and achieve its goals (Conservation by Design 2001). Conservation by

Design directs the organization to systematically identify the array of places around the globe that embrace the full spectrum of the Earth's natural diversity; to develop the most effective strategies to achieve tangible, lasting results; and to work collaboratively to catalyze action at a scale great enough to ensure the survival of entire ecosystems.

TNC's strength and reputation are built on the policy and practice of applying the best conservation science available and of building partnerships to achieve mutual conservation goals. We respect the needs of local communities by pursuing strategies that conserve biological diversity while at the same time enabling humans to live productively and sustainably on the landscape. We know that lasting conservation success requires the active involvement of individuals from diverse backgrounds and beliefs, and we value the participation of individuals in the conservation of their communities and environments.

The Nature Conservancy's Sacramento River Project is headquartered in Chico, CA. For more than ten years The Sacramento River Project has a proven track record, having helped protect more than 18,000 acres of riparian land within the Sacramento River Conservation Area, and having restored more than 2,800 of marginal agricultural land along the Sacramento River to riparian habitats. An active participant in the SB 1086 process and now the Sacramento River Conservation Area non-profit, The Nature Conservancy is collaborating with federal and state agencies, local government, landowners, and other stakeholders and non profit organizations to achieve the SRCA goal of restoring a continuous riparian corridor with limited river meander between Red Bluff and Colusa.

The Sacramento River Project is organized into teams focused on planning, science, restoration, acquisition, government relations and outreach, and administration. Legal, finance, and government contracting are overseen by TNC's regional office in San Francisco.

Overall project management is the responsibility of TNC's Sacramento River Project Director, Sam Lawson, with more than thirty years experience in community and economic development, transactional real estate, enterprise development, and organizational management. Dr. Greg Golet, Project Ecologist; manages the planning, science, and restoration teams. The project lead for this proposal is Ryan Luster, Restoration Coordinator.

Gregory H. Golet has degrees from Bates College (B.S. Biology 1987), and the University of California, Santa Cruz (M.S. Marine Sciences 1994, Ph.D. Biology 1999). His doctoral research focused on the behavioral and physiological adjustments that long-lived birds make during their breeding seasons, and the effects that these adjustments have on subsequent survival and future fecundity. Dr. Golet was a wildlife biologist for the U.S. Fish and Wildlife Service before joining TNC's Sacramento River Project as senior ecologist. He provides scientific input for the design of conservation strategies and studies ecosystem responses to management actions. He has 11 refereed publications, and has extensive experience coordinating and conducting research in California and Alaska.

Ryan Luster has degrees from Beloit College (B.A. Environmental Biology 1994) and Utah State University (M.S. Rangeland Resources 2001). Ryan has worked on native ecosystem restoration projects since 1994. Ryan first joined TNC as a Restoration Specialist in 1997 at Dye Creek Preserve, CA, where he supervised riparian restoration projects. Ryan oversees all phases of riparian restoration activities for TNC's Sacramento River Project.

Dawit Zeleke has worked for TNC since 1992. Dawit has managed the implementation of over 1,500 acres of native ecosystem restoration along the Cosumnes and Sacramento Rivers. Dawit, Land Steward III, presently manages 4,000 acres of agricultural leases and the transition of those acres to riparian communities along the Sacramento River.

Potential Conflicts of Interest or Problems with Availability. The Sacramento River Project does not have any conflicts of interest or any potential problems with availability to do the proposed work within the proposed timeline.

## **Section D: Cost**

### **D.1. Budget**

See web forms VI (Budget Summary) and VII (Budget Justification).

### **D. 2. Cost-Sharing**

TNC is contributing funds to conduct an Environmental Assessment (EA) on Sunset Ranch, Dead Man Reach, and Capay using private funds. Funding to complete environmental compliance for RX Ranch is included in the budget request for this proposal. Restoration work cannot proceed without the completion of environmental compliance measures for this property.

## **Section E: Local Involvement**

TNC has introduced this proposal to interested parties and will continue to do so after proposal submission. TNC will work with local landowners and stakeholders to address their concerns over restoration activities.

SRCA: The proposal was presented at the August 23, 2001 SRCA Board of Directors meeting and at the SRCA's Technical Advisory Committee meeting on August 16, 2001. In addition, TNC provided an update in the "SRCA Notes," which is distributed to 650 SRCA stakeholders regarding the preparation of this proposal. TNC regularly attends SRCA Board and sub-committee meetings and will continue to give regular updates to the SRCA at meetings and through the "SRCA Notes."

Glenn County: TNC has coordinated its past activities in Glenn County with local government and will continue to keep the County informed and updated regarding restoration activities. Glenn County Supervisor and SRCA Board member, Denny Bungarz, was contacted and updated regarding this proposed restoration, as was Glenn County Supervisor Keith Hansen. Project staff plan to invite both supervisors and interested county staff to the tracts to discuss restoration plans.

A meeting was conducted on August 13, 2001 in Hamilton City with the Hamilton City Community Service District (HCCSD) working group. Glenn County staff, landowners, and the HCCSD members attended this meeting. Activities on two of the four proposed tracts (Capay and RX Ranch) have been coordinated through and compliment the work of the HCCSD working group in their efforts to realign the J Levee for ecosystem and flood damage reduction benefit.



Butte County: TNC works to coordinate their activities in Butte County with local government and will continue to keep the county informed and updated concerning this proposal. County Supervisor and SRCA Board member, Jane Dolan, has been notified regarding this proposal. TNC will notify other Butte County officials and staff when the proposal is submitted and set-up meetings to discuss the restoration plans.

Two meetings have been held to discuss TNC's proposed restoration activities. On August 10, 2001, the Sacramento River Reclamation District Board of Directors met, in attendance were local landowners and Michael Madden, Butte County Emergency Services Officer. In addition, a meeting was held on August 24, 2001 with the Sacramento River Reclamation Board in Chico and was attended by Butte county landowners.

Restoration Tract Neighbors: TNC places a high priority on establishing good working relationships with all neighboring landowners. TNC has initiated efforts to contact landowners directly adjacent to the restoration tracts and will continue these efforts to discuss restoration planning with them. A landowner adjacent to Dead Man Reach has voiced interest in providing input into the final restoration plan; TNC will continue this coordination with landowners as restoration plans are further developed. RX Ranch is surrounded by conservation lands while Capay has one neighbor. TNC is currently working on setting up meetings with this neighbor to inform him of our planned activities.

TNC is aware of potential third party impacts resulting from the conversion of agricultural lands to riparian habitat and is addressing these issues through several studies. TNC is currently engaged in a socioeconomic assessment to examine the potential costs and benefits associated with the acquisition and restoration of land along the Sacramento River between Red Bluff and Colusa. In addition, start-up stewardship activities conducted for these properties under the CALFED 97-NO2 grant were designed to specifically address potential third party impacts (e.g., potential flooding). Hydraulic modeling of the area has been conducted and final restoration designs will incorporate this information to avoid any potential flood damage to neighboring properties.

TNC will hold two additional on-site public meetings during the summer of 2002 prior to implementing restoration activities in order to discuss the tract-specific restoration plans. To date, there has not been direct opposition to the restoration activities; however, TNC will work with landowners to address concerns that are raised through the outreach process.

#### **Section F: Compliance with Standard Terms and Conditions**

Regarding Attachment D, Section 4, Expenditure of Funds, TNC requests the following language currently being negotiated for the CALFED 2001 agreements with TNC: "Contractor shall expend funds in the manner described in the approved Budget. As long as the total contract amount does not increase, the Contractor may adjust (1) the Budget between individual tasks by no more than 10% and (2) the Budget between individual line items within a task by no more than 10%. Any other variance in the budgeted amount among tasks, or between line items within a task, requires approval in writing by CALFED or NFWF. The total amount to be funded to Contractor under this Agreement may not be increased except by amendment of this Agreement. Any increase in the funding for any particular Budget item shall mean a decrease in the funding for one or more other Budget items unless there is a written amendment to this Agreement."

For Section 5, Subcontracts, TNC requests the following language currently being negotiated for the CALFED 2001 agreements with TNC: "Contractor is responsible for all

subcontracted work. Subcontracts must include all applicable terms and conditions as presented herein. An approved sample subcontract is attached as [an exhibit]. Contractor must obtain NFWF's approval prior to entering into any subcontract that will be funded under this Agreement, which approval shall not be unreasonably withheld if (1) contracted work is consistent with the Scope of Services and the Budget; and (2) the subcontract is in writing and in the form attached to this Agreement as [an exhibit]. Contractor must subsequently provide NFWF with a copy of the signed subcontract. Contractor must (a) obtain at least 3 competitive bids for all subcontracted work, or (b) provide a written justification explaining how the services are being obtained at a competitive price and submit such justification to NFWF with copy of the signed subcontract.

Notwithstanding the foregoing, the CALFED Program has acknowledged that the Contractor generally does not use a subcontract for routine land appraisals, surveys, and hazardous materials reports. For these one-time services, Contractor uses a group of vendors on a regular basis and pays no more than fair market value for such services by one-time invoice rather than written contract. Contractor will not be required to obtain competitive bidding for such services or to provide any further justification to NFWF.”

For Section 9, Rights in Data, TNC requests the following language currently being negotiated for the CALFED 2001 agreements with TNC: “All data and information obtained and/or received under this Agreement shall be publicly disclosed only in accordance with California law. All appraisals, purchase and sale agreements and other information regarding pending transactions shall be treated as confidential and proprietary until the transaction is closed. Contractor shall not sell or grant rights to a third party who intends to sell such data or information as a profit-making venture.

Contractor shall have the right to disclose, disseminate and use, in whole or in part, any final form of data and information received, collected, and/or developed under this Agreement, subject to inclusion of appropriate acknowledgment of credit to the State, NFWF, to the CALFED Program, and to all cost-sharing partners for their financial support. Contractor must obtain prior approval from CALFED to use draft data. Permission to use draft data will not be unreasonably withheld. CALFED will not disseminate draft data, but may make draft data available to the public upon request with an explanation that the data has not been finalized.” For Section 13, Termination Clause, TNC requests the following language currently being negotiated for the CALFED 2001 agreements with TNC: “Default and Remedies,

1. In the event of Contractor's breach of any of Contractor's obligations under this Agreement, NFWF shall deliver to Contractor written notice that shall describe the nature of such breach (the “Default Notice”). If Contractor has not cured the breach described in a Default Notice prior to the expiration of the twenty (20) day period immediately following Contractor's receipt of such Default Notice, or, in the event the breach is not curable within such twenty (20) day period, Contractor fails to commence and diligently proceed with such cure within such twenty (20) day period, then Contractor shall be deemed to be in default under this Agreement, and NFWF shall have the right, after receiving approval from CALFED, to terminate this Agreement by delivering to Contractor a written notice of termination, which shall be effective immediately upon receipt by Contractor (the “Termination Date”). Upon and following the Termination Date, NFWF shall be relieved of the obligation under this Agreement to make any payments to Contractor for any work that has been performed prior to the Termination Date; however, NFWF shall continue to be obligated to make any payments to Contractor for work properly performed and invoiced in accordance with the terms and conditions of this Agreement

prior to the Termination Date. In no event shall Contractor be required to refund to NFWF, CALFED, the Agency or DWR any of the funds that have been forwarded to Contractor under this Agreement, except as provided in Section 10.I.2 below.

2. In the event of any termination of this Agreement by NFWF pursuant to Section 10.I.1 above prior to close of escrow of Contractor's acquisition of any real property interest funded by this Agreement, NFWF's sole remedy shall be to obtain the return of those funds that have been forwarded to Contractor under this Agreement to fund Contractor's acquisition of the Property."

### **Section G: Literature Cited**

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**Attachment 1: CALFED 97 NO-2 Status Report for Next-Phase Funding**  
Ecosystem and Natural Process Restoration on the Sacramento River: Floodplain Acquisition and Management. CALFED Grant 97-NO2, ERP Program (Term: 1/1/98-12/31/01).

**Project Description**

In 1997, TNC, the California Wildlife Conservation Board (California Department of Fish and Game), and the USFWS requested funds for the acquisition of fee title on 1,500 acres within the Sacramento River Conservation Area of the Sacramento River between Keswick and Verona. Funds were also requested for start-up stewardship and development of short and long-term management and monitoring plans for these lands. These acquisitions were a means to facilitate the recovery of ecological processes within the floodplain, including the revegetation of native riparian habitat. The primary ecological objectives of the project were:

1. Protect and increase quality and quantity of an essential spawning, rearing, and migratory pathway for a host of aquatic and terrestrial species.
2. Protect large continuous blocks of existing and restorable aquatic riparian habitat for the benefit of these species.
3. Protect and allow for the restoration of ecological processes in the 150-year meander belt.

Under this block grant, four properties totaling approximately 1,628 acres have been purchased along the Sacramento River (Capay, Dead Man Reach, Gunnhill, RX Ranch) within the Chico Landing sub-reach. The restoration of three of these properties - Capay, RX Ranch, and Dead Man Reach (Figure 4) is the subject of this 2002 CALFED proposal (in addition to Sunset Ranch which was purchased with private funds):

Property	Location	Appx. Acres	Acquisition Date
Capay (Kaiser)	Glenn County, RM 194	661	2/26/99
RX Ranch	Glenn County, RM 194	246	2/29/00
Dead Man Reach (Koehnen)	Butte County, RM 186	503	8/12/99

TNC is not seeking funds to restore the Gunnhill property at this time.

**Scientific Merit of the Project**

Hypotheses, conceptual models, and an adaptive management framework were not developed for the 97 NO-2 proposal because they were not required by the 1997 PSP; however, in September 1999 TNC developed and CALFED approved “A monitoring framework for riparian habitat restoration on the Sacramento River and Lassen Foothill tributaries.” This document includes TNC’s approach to monitoring and the conceptual models that have guided TNC’s work to date. The 97 NO-2 funded project has been invaluable for allowing TNC to determine appropriate actions for sub-reach management. The experience and knowledge gained from this project will guide TNC’s future sub-reach management actions, including habitat restoration.

**Current Status of the Project**

Progress and Accomplishments: Four properties, listed above, have been purchased. Task orders are in progress to fund acquisition of two additional properties: the 238-acre Ward property (purchased April 2001), and the 77-acre Clendenning property under option and anticipated to close in September 2001. This will complete the acquisition terms of this grant (Tasks 1 & 2). Start-up stewardship activities to assess restoration potential are underway,

including preliminary hydrologic and geomorphic modeling, a riparian vegetation recruitment study, a geotechnical investigation, development of additional GIS information layers, orthorectification of aerial photography, and assess potential third party impacts associated with restoration actions (Task 3).

Status: Task 1: Acquisition Administrative Costs and Task 2: Acquisition Capital Costs will be completed with the purchase of the Clendenning and Ward properties.

Task 3: Start-up Stewardship Activities are in progress and approximately 30% complete. The 97 NO-2 grant funded start-up stewardship activities, which TNC has termed the “Chico Landing Sub-Reach Planning” process. The goal of this process was to identify the necessary components needed to conduct landscape-scale riparian conservation and restoration within the Chico Landing sub-reach. This task includes activities such as initial clean-up, fencing, preparation for restoration, and preparation of short and long-term management and monitoring plans for the acquired properties. To date, tasks in support of management and monitoring plans include:

Geo-technical investigation: A draft geo-technical investigation report is complete for the J levee area near Hamilton City. The report was distributed to the ACOE for incorporation into their Comprehensive Study “initial projects” data collection efforts and to Hamilton City stakeholders.

Large-scale planting design model: TNC initiated the development of a model which uses tract characteristics (soils and elevation) to develop large-scale plant designs and serve as input to large-scale hydraulic models. This allows TNC to evaluate interactions of conservation strategies and infrastructure such as bridges and levees.

Hydraulic modeling: Ayres Associates is constructing the topographic information necessary for a 2-dimensional model within the Hamilton City area (RM 194-202). The model will evaluate ecosystem restoration and flood damage reduction benefits of a hypothetical setback levee, revegetation, and potential removal of small private levees which are located within conservation ownership parcels.

Channel meander modeling: TNC is finalizing a scope of work and contract with Eric Larsen (UC Davis) to build a meander model for sections within this sub-reach. The modeling will allow TNC to evaluate general river behavior as a result of placing and or removing bank protection. This model should inform management issues such as protecting infrastructure.

Cottonwood regeneration pilot study: TNC conducted an initial investigation into regeneration of the riparian forest at river mile 192.5. River regulation effects on the riparian forest are not fully quantified. However, we sought to calibrate an ecological model which other river managers have used to re-generate riparian forest, meeting both resource and human water needs. A draft report is near completion and this information will be evaluated for the long-term management plan.

Management and monitoring data collection and development: TNC conducted a large-scale analysis of conservation parcel physical characteristics with respect to flooding, soil types, erosion predictions, and surficial geology. TNC has initiated collection of GPS data on parcels in conservation ownership within the sub-reach; data collection includes crop type and variety, infrastructure, land use, and occurrence of young stands of riparian recruitment. All information will be referred to for development of the management and monitoring plan. A draft report is complete which summarizes findings of a geotechnical report investigation surficial geology appropriate for a setback levee in the Hamilton City area.

Information from all of the above tasks will be incorporated into short- and long-term management and monitoring plans by September 2002, the completion date of the contract.

Table 3: Restoration Proposal Schedule of Activities

Activities & Tasks	Responsible Party	2001				2002				2003				2004				2005				
		W	SP	SU	F	W	SP	SU	F *	W	SP	SU	F	W	SP	SU	F	W	SP	SU	F**	
<b>PLANNING</b>																						
Subreach planning	TNC																					
Baseline assessments	TNC																					
RX Ranch EA	EDAW, Inc.																					
Restoration plan	TNC																					
<b>PROPOGATION</b>																						
Seed Collection	TNC																					
Nursery propagation	contractor																					
Cutting Collection	TNC																					
<b>FIELDWORK</b>																						
Field Preparation	Contractor																					
Layout	Contractor																					
Irrigation system	Contractor																					
Planting	Contractor																					
Replant (if necessary)	Contractor																					
<b>MAINTENANCE</b>																						
Weed Control	Contractor																					
Irrigation	Contractor																					
<b>MONITORING</b>																						
30 day post-planting	TNC																					
End of growing season	TNC																					
Project completion	TNC																					
Regular check-in	TNC																					
<b>PROJECT MNGMT.</b>																						
Annual reports	TNC																					
Quarterly reports	TNC																					
Contract management	TNC																					

\* project implementation, \*\* project completion



Table 4: B.4. Previous Recipients of CALFED Program or CVPIA funding.

<b>Project Title</b>	<b>CALFED Program/ CVPIA Project</b>	<b>Term</b>	<b>Progress and Accomplishments</b>	<b>Status</b>
Ecosystem and Natural Process Restoration on the Sacramento River: Floodplain Acquisition and Management	CALFED 97-NO2 ERP	1/1/98-12/31/01	Four properties along the Sacramento River totaling approximately 1,628 acres have been purchased (Kaiser, Dead Man's Reach, Gunnhill, RX Ranch). Task orders are in progress to fund portions of the purchase of two additional properties: 238-acre Ward property purchased in April 2001, and 77-acre Clendenning property under option and anticipated to close in September. Start up stewardship activities are underway, including preliminary hydrologic and geomorphic modeling that will help identify short and long-term conservation and management actions for these properties.	The Clendenning property will complete the acquisition terms of this grant. Restoration of 3 of the purchased properties is the subject of a 2002 CALFED proposal. A request was recently approved by CALFED for an extension of the term date and the shifting of funds under the agreement from Task 1 (direct acquisition costs) to Task 3 (Startup Stewardship) in order to complete the management and monitoring plans called for under Task 3.
Ecosystem and Natural Process Restoration on the Sacramento River: Active Restoration of Riparian Forest	CALFED 97-NO3 ERP	12/1/98-6/30/02	Tract preparation and planting of two tracts (River Vista and Flynn) to riparian habitat totaling 264 acres is complete.	Restoration terms of this grant are completed; monitoring is currently in progress. Maintenance will be complete fall of 2001.
Ecosystem and Natural Process Restoration on the Sacramento River: A Meander Belt Implementation Project	CALFED 97-NO4 ERP	2/25/98-12/1/01	The 94+ acre Flynn property and adjacent levee were purchased in December 1998. The levee was subsequently removed; as a result this tract now supports one of the largest bank swallow colonies recorded on the Sacramento River. Restoration was implemented under CALFED 97-NO3 and 97-NO4.	Acquisition and restoration terms of this grant are complete; monitoring is currently in progress. Maintenance will be complete in the fall of 2001.
Floodplain Acquisition, Management and Monitoring on the Sacramento River	CALFED 98-F18, FWS Agreement #11420-9-J074 ERP	7/20/99-6/30/02	Funding was awarded for the acquisition portion of this grant. The 104+ acre Jensen property located in Colusa County was purchased in July 2000. This property is located within the setback levees of the Sacramento River Flood Control Project. Two additional properties, totaling 183+ acres will be wholly or partially funded under this agreement upon official approval of the agency, including: the 129 acre Boeger property scheduled to close by December, and 54 acre Hays property purchased in 5/01.	The Boeger and Hays properties will complete this acquisition grant. Additional CVPIA funding has been obligated to complete the purchase of the Boeger property.

Table 4: B.4. Previous Recipients of CALFED Program or CVPIA funding, continued

Project Title	CALFED Program/ CVPIA Project	Term	Progress and Accomplishments	Status
Floodplain Acquisition and Sub-Reach/Tract Specific Management Planning: Sacramento River (Red Bluff to Colusa)	CALFED 2000-F03, FWS Agreement #11420-1-J001 ERP	6/1/01-5/31/03	Funding was awarded to implement the Sub-reach/Tract Specific Planning portion of this proposal. Four tasks are currently in progress to develop comprehensive conservation and management strategies for multiple benefits and uses of the river floodplain. Under Task 1 data collection is in progress, and the Beehive Bend Hydraulic analysis has been completed for RM 167-172. Under Task 2, a Socioeconomic Assessment for the riparian corridor of the SRCA between Red Bluff and Colusa is in progress with involvement from SRCA, stakeholders and local governments. Under Task 3 a newsletter went out to all stakeholders; stakeholder meetings have been conducted; updates are regularly provided to the SRCA.	During the first year of this 3-year grant, all tasks were initiated and are making good progress. A report to be developed under Task 4 will outline future conservation and management actions for the Beehive Bend sub-reach based on information developed within Tasks 1 - 3.
Acquisition of Southam Orchard Properties for Preservation of Riparian Habitat	CVPIA grant, BuRec Agreement #00FG200173 b(1)"other"	9/12/00-9/30/02	A portion of the grant was applied to the purchase of the 76+-acre Southam property, purchased in July 2000. The remainder of the funding was applied to the purchase of the 238-acre Ward property purchased in April 2001.	The grant is complete. Additional funding was used to purchase each of these properties. CVPIA (AFRP) and private funding was used to complete the purchase of the Southam property. CALFED 97-NO2 and private funding was used to complete the Ward purchase.
Hartley Island Acquisition	CVPIA grant, FWS Agreement #1448-11332-7-G017 AFRP	8/14/97-9/30/01	Funding was used toward the purchase of two parcels on Hartley Island, including the 321-acre Sandgren parcel. The remaining funds available were applied to the purchase of the 76+-acre Southam parcel.	The grant is complete.
Singh Walnut Orchard	CVPIA grant, FWS Agreement #11332-0-G014 AFRP	9/18/00-12/31/01	Completed tasks for this pre-acquisition and planning grant includes: pre-acquisition due diligence and signed option for Singh property, baseline assessment, and local stakeholder meeting conducted to discuss restoration plans.	A report will be submitted fall 2001 that outlines baseline and ecological considerations with restoration alternatives. This will complete the terms of this grant. Acquisition and restoration of this property is the subject of a 2002 CALFED proposal.

Figure 1. Conceptual model of The Nature Conservancy's Sacramento River Project's programmatic structure.

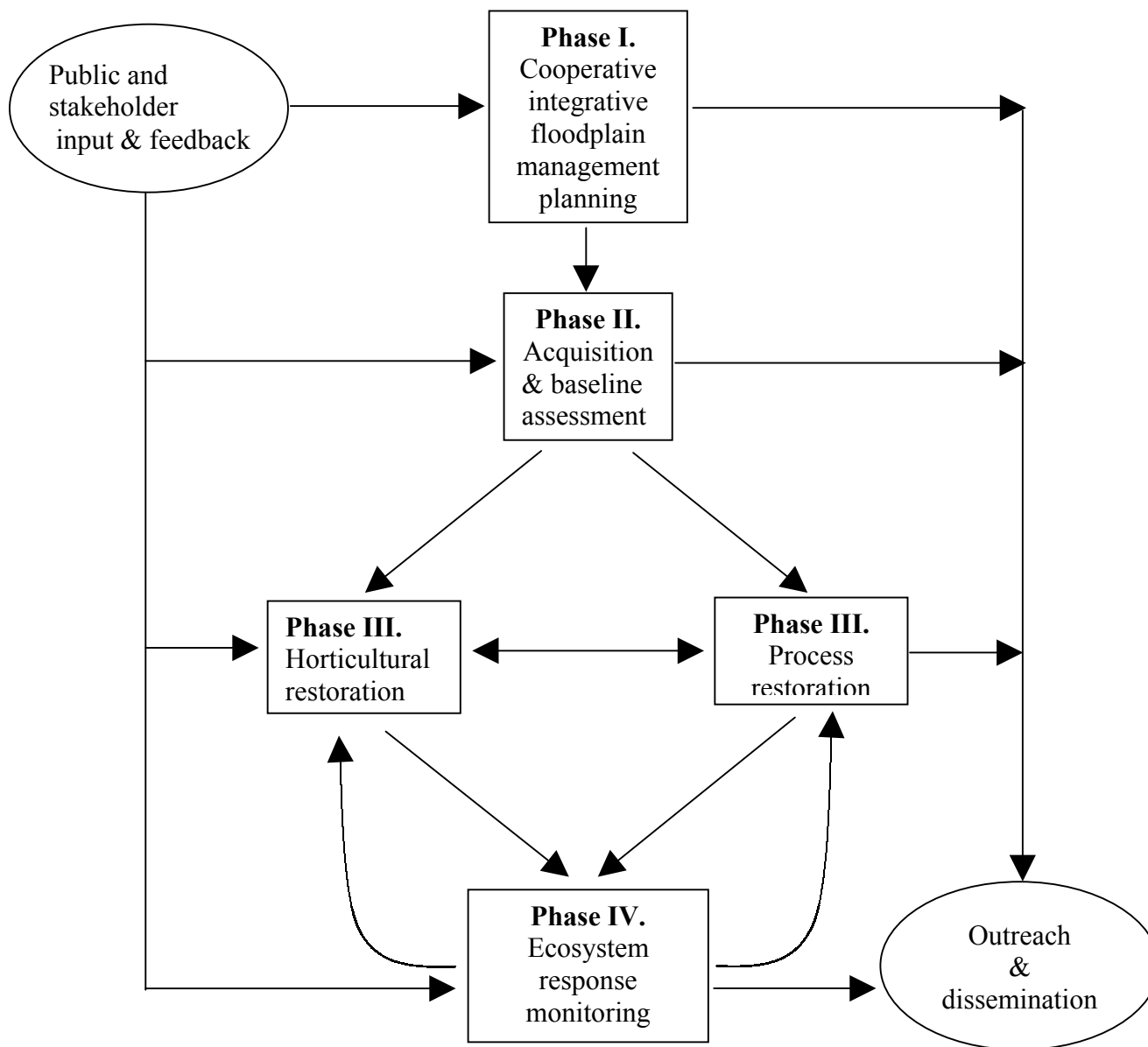


Figure 2: Restoration ecological conceptual model for The Nature Conservancy’s Sacramento River Project.

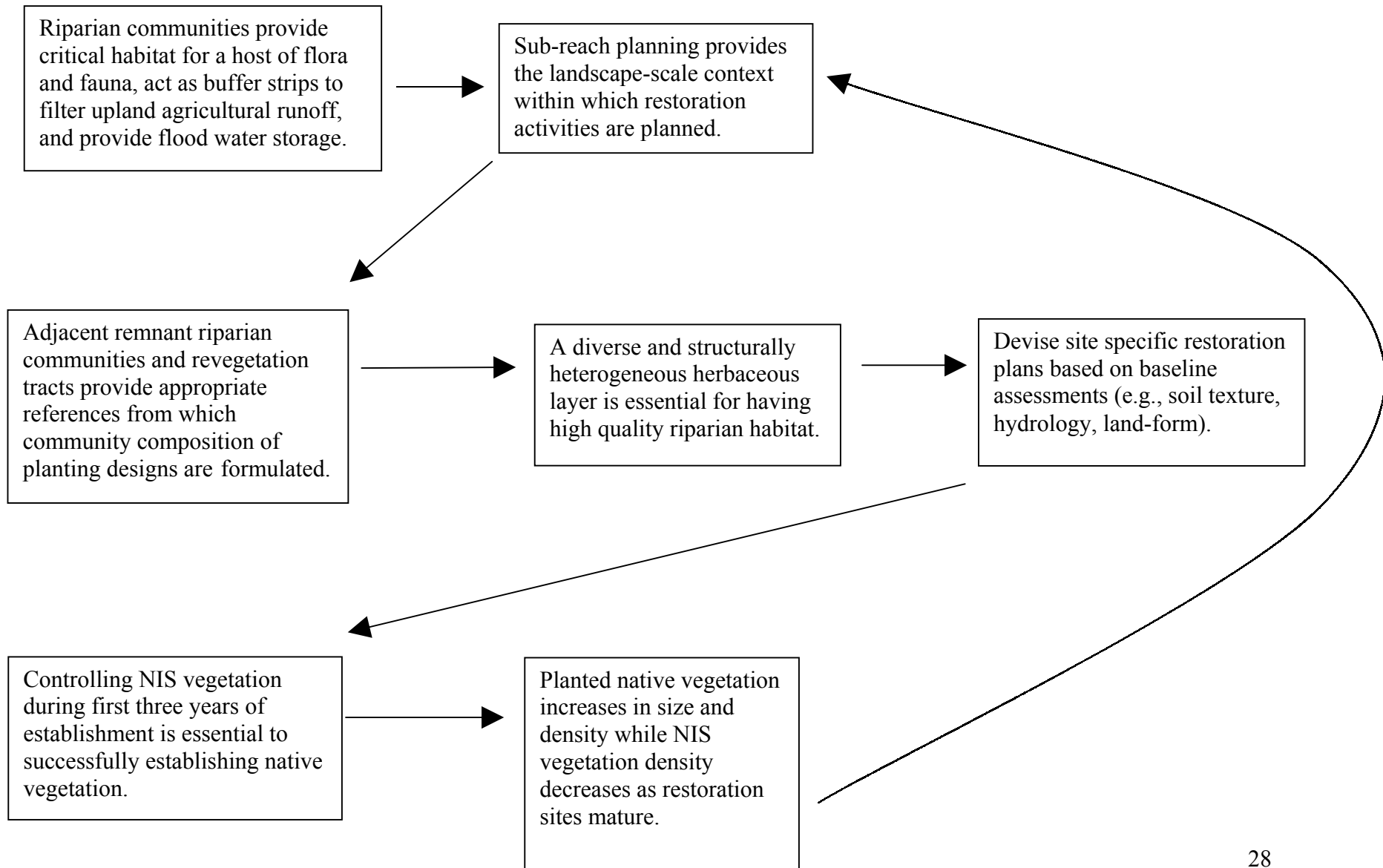


Figure 3: Restoration programmatic conceptual model for The Nature Conservancy's Sacramento River Project.

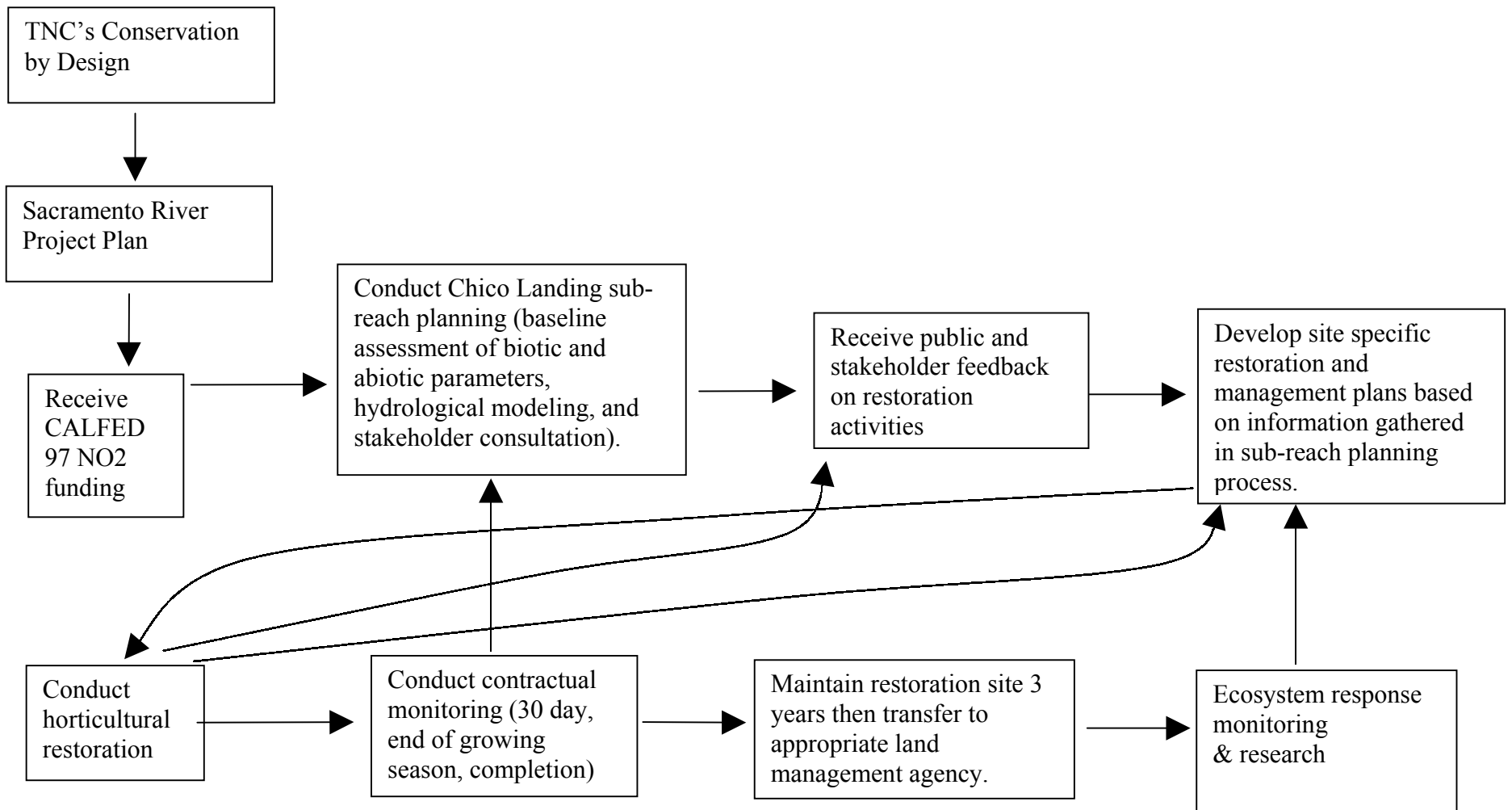


Figure 4. Chico Landing Sub-Reach (RM 178-206)

