Attachment H

Proposal # 2001- I201 (Office Use Only)

PSP Cover Sheet (Attach to the front of each proposal)

Proposal Title: Watershed Education, Headwaters to the Ocean

Applicant Name: Sacramento River Discovery Center

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Amount of funding requested: $ 192,864 (year 1); $105,600 (year 2); $81,000 (year 3) // 379,464

Some entities charge different costs dependent on the source of the funds. If it is different for state or federal funds list below.

State cost _____ Federal cost _____

Cost share partners? XX **Yes** ___ **No**

Identify partners and amount contributed by each Sacramento River Discovery Center, over $200,000 per year volunteer time; Red Bluff High School, $37,000 per year staffing and materials Bureau of Reclamation, $45,000 per year

Indicate the Topic for which you are applying (check only one box).

- ☐ Natural Flow Regimes
- ☐ Nonnative Invasive Species
- ☐ Channel Dynamics/Sediment Transport
- ☐ Flood Management
- ☐ Shallow Water Tidal/ Marsh Habitat
- ☐ Contaminants
- ☐ Beyond the Riparian Corridor
- ☐ Local Watershed Stewardship
- XX Environmental Education
- ☐ Special Status Species Surveys and Studies
- ☐ Fishery Monitoring, Assessment and Research
- ☐ Fish Screens

What county or counties is the project located in? Shasta, Tehama, Butte, Siskiyou, Trinity, throughout watershed

What CALFED ecozone is the project located in? See attached list and indicate number. Be as specific as possible Education covers all ecozones; 3,4,5,6,7,8,9, will be very directly impacted

Indicate the type of applicant (check only one box):

- ☐ State agency
- ☐ Public/Non-profit joint venture
- ☐ Local government/district
- ☐ University
- ☐ Other: _____
- ☐ Federal agency
- XX Non-profit
- ☐ Tribes
- ☐ Private party

Indicate the primary species which the proposal addresses (check all that apply):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- XX Winter-run chinook salmon
- XX Late-fall run chinook salmon
- ☐ Delta smelt
- ☐ Splittail
- XX Green sturgeon
- XX White Sturgeon
- XX Waterfowl and Shorebirds
- XX Migratory birds
- ☐ Other listed T/E species: _____
- XX Spring-run chinook salmon
- XX Fall-run chinook salmon
- ☐ Longfin smelt
- XX Steelhead trout
- ☐ Striped bass
- XX All chinook species
- XX All anadromous salmonids
- XX American shad

Indicate the type of project (check only one box):

- ☐ Research/Monitoring
- ☐ Pilot/Demo Project
- ☐ Full-scale Implementation
- ☐ Watershed Planning
- XX Education

Is this a next-phase of an ongoing project? Yes XX No____

Have you received funding from CALFED before? Yes XX No____

If yes, list project title and CALFED number: 99-B20, Expand Bird Monitoring, Develop A Native Grass Plot and enhance public involvement with access to native plant garde

Have you received funding from CVPIA before? Yes XX No____

If yes, list CVPIA program providing funding, project title and CVPIA number (if applicable):

It was in 1994-95 for the planning phase of the Center prior to the establishment of the non-profit Sac. River Discovery Center; the funding was channeled through Evergreen Schoo.

By signing below, the applicant declares the following:

- The truthfulness of all representations in their proposal;
- The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Cathy Klinesteker

Printed name of applicant

Cathy Klinesteker

Signature of applicant

EXECUTIVE SUMMARY

This proposal from the Sacramento River Discovery Center (SRDC) will continue to build an educational model that develops citizens that better understand, appreciate, and manage natural systems. This replicable model has been growing for five years. The support of funds from CALFED 2001 for this three-year proposal will assure long-term stability and a strong environmental education model available for replication and/or modification for other sites.

Five specific projects are covered in this proposal, with budgets for three years for each proposal. The first three provide support for expansion of previously funded projects. They are all components of the very successful high school/college intern program at SRDC. The fourth project is a new intern project and the fifth is a general educational project to impact all components of SRDC programming as well as programs at other sites.

The first is the study of birds as connectors to the watershed. This project, in partnership with Point Reyes Bird Observatory, is carried out on sites along the Sacramento River, which are part of the Sacramento River Refuge. Students and volunteers will expand bird projects including site surveys, nesting observations, and presenting programs to thousands of younger students.

The second project involves expansion of the native grass restoration project. Specialists from the Nature Conservancy, US Forest Service, California Native Grass Association, and Tehama County Resource Conservation Service will provide leadership for high school interns to work with elementary students to raise grass plugs and plant them in a nine acre plot. Star thistle will be removed and controlled with seasonal burning for the duration of the project.

The third project is expanded educational programs and improved access for the two-acre native/drought tolerant garden surrounding the Discovery Center. It includes expansion of teacher and public training programs and a community service project to improve the garden to provide more complete access for people with special needs.

The Fourth project is a new intern project involving several agency and private partners. It is a mapping and eradication plan project for giant bamboo, tree of heaven, and tamarisk along a 15 mile stretch of the Sacramento River where SRDC interns regularly provide interpretive raft trips for younger students.

The fifth project will touch millions of people per year through displays and materials developed and used at SRDC, California Academy of Sciences, UC Bodega Marine Laboratory, and two NOAA Marine Sanctuaries, Gulf of the Farallones, and the Cordell Bank. This project will address the issue of biodiversity and connections of the Sacramento River watershed from the mountains to the ocean.

This project provides a critical link for connecting people to the processes of and work in the Sacramento River watershed. It builds a foundation for implementation of educational programs that develop a populace with systems understanding.

"The philosophy in the schoolroom in one generation will be the philosophy of the government in the next." Abraham Lincoln

PROJECT DESCRIPTION

Statement of the Problem:

No matter how much land is acquired, how much work is completed, or how many specialists and scientists monitor and provide data, if the general public is not part of the process, they will not value the results. One day, the tough water choices for people living a water thirsty lifestyle and/or water for healthy systems will face towns, cities, counties, and the voting populace. These choices will involve money and lifestyle and difficult decisions. A citizenry who doesn't understand, and therefore appreciate, water systems will not choose to pay the price to maintain their diverse structure and complex health. Education alone will bring the people to this kind of understanding and appreciation. Students must be engaged in activities throughout the watershed. This proposal is a step in that direction.

Sacramento River Discovery Center

The Sacramento River Discovery Center (SRDC) is a private, non-profit dedicated to public information and education, started with funding from the Central Valley Project Improvement Act, incorporated in September, 1995, with 326 members. Over 48 public and private groups participated actively to plan the vision and implement first steps of the Discovery Center. Many more have become partners in the continuing growth of that vision. The Center is located in a 1400 square foot building surrounded by a two-acre native/drought tolerant plant garden within 488 acres of public land managed jointly by Mendocino National Forest, U.S. Fish and Wildlife Service, and the U.S. Bureau of Reclamation adjacent to the Red Bluff Diversion Dam. Its location places it at the nexus between urban and rural, the watershed and agriculture. Its history of bringing together diverse groups of people to provide a balanced view of the river has resulted in great strides toward development of the Center.

Educational programs of the Discovery Center have served 16,847 students. 167 students have participated in the high school/college Natural Resource Academy. 140 teachers have attended extensive teacher training programs. 61,280 volunteer hours have been logged since opening in June 1996 and over 20,000 visitors have come to the Discovery Center. Educational programs reach people from the bay area to Sacramento to the Oregon border to the Nevada border. Visitors to our Center come from all over the world. For this proposal we will focus on four distinct projects, listed below, within our high school/college Natural Resource Academy, and one project to expand services to all involved in our educational programs including students and the general public.

1. Previous funding has allowed the development of a partnership with Point Reyes Bird Observatory to promote the study of birds in the Sacramento Valley. That funding allowed the project to move from student programs with local adult volunteers working with high school/college interns to professional ornithologists providing guidance and oversight to the program. The 2001 project proposes the expansion of bird monitoring and volunteer training in cooperation with the Point Reyes Bird Observatory. We choose to focus on birds because of their enormous ecological, aesthetic, and economic value. Thirty-two riparian obligate bird species breed in California and many more use riparian areas as stopover sites on migration. Birds rely heavily on this diminishing habitat type, and its preservation relies upon educating and winning the support of local communities. Birds are the ideal mechanism for drawing

community interest -- they are observable, diverse in their habits, and their relatively high position on the food chain lends them to the teaching of bio-diversity concepts. Economically, birds are critical to agricultural and forest pest control. And bird watching as recreation has increased 155% nationwide over the past decade, according to the 1994-95 National Recreation Survey (U.S. Department of Interior). In fact, non-consumptive bird use contributes more than $622 million in retail sales annually to the California economy. Finally, birds are relatively cost-effective to monitor, and standardized methods of data collection can be taught to students and skilled volunteers. Many visitors come to the Discovery Center and PRBO study sites loaded with curiosity about birds they have observed. Their questions are the perfect entry point into broader discussions of habitat conservation.

Methods:
Training will take place at both SRDC and on established PRBO study sites on the Sacramento River. Documentation of bird communities and habitat analysis at SRDC will serve as a training experience for all sites. Through the SRDC Natural Resource Academy, which currently enrolls 35 junior and senior level high school students, adult volunteers and students will receive experience through the following:
•Classroom instruction/research skills
•Practice with curriculum specific to the site/tasks of the project
•Field experience
•Documentation/presentation of results
•Creation of teaching tools

2. Native grass restoration project involving the community in development of a site currently overgrown with yellow star thistle (about 9 acres) to a native grassland. This project will be conducted in partnership with Mendocino National Forest, managers of the target site, Tehama County Resource Conservation Service, providing seed and grass plugs, and the Nature Conservancy, providing oversight for the project based on their experience at nearby Dye Creek Preserve. In addition, hundreds of school children will participate in mini-lessons about the value of native grasses, will raise plugs in their classes, and will plant "their" native grass plugs in the nine-acre site. Previous funding supported the development of a native grass plot within and adjacent to the native/drought tolerant plant garden surrounding the Sacramento River Discovery Center. This has given interns, volunteers, and staff experience with and a connection to the grasses themselves and to grass specialists in the region. The next phase of this project is the expansion to a large section (9 acres) of the 488 site where the Discovery Center is located. This project will work on the problem of removal of yellow star thistle and the establishment of native grasses. The entire process will require a minimum of three years of controlled burns and other weed control and plug planting and nurturing.

3. For the Discovery Garden project, we propose to enhance public involvement with and access to the two-acre native/drought tolerant plant garden surrounding the Discovery Center. We will engage students and volunteers in plant identification workshops, improve and expand the plant identification signs throughout the garden, complete a garden map and develop a garden guide for use by students and the general public, develop a propagation program which will provide greenhouse space as needed for plants grown from seeds and cuttings, expand our partnership with the California Native Plant Society to enhance their programs of plant education and sales,

and upgrade the existing trail (with enormous community involvement already promised) to allow easier access for the many elderly and special needs persons who regularly visit the garden. Completion of the greenhouse, shade house, plant propagation program, teaching and cataloguing materials, and establishment of educational programs for teacher training, high school/college academy, and volunteers will require three years. Previous funding supported initiation of plant propagation in partnership with the California Native Plant Society, the first Discovery Garden plant sale, and initial work on educational materials.

4. This is a proposal to map and make an eradication plan for three pervasive non-natives in a 15 mile stretch of the Sacramento River that is a focus for educational programs for hundreds of students under the direction of the Sacramento River Discovery Center. It is a new proposal and has not received previous funding. Under this proposal, high school interns will work with agency specialists and private landowners to develop Global Positioning System data locating *Ailanthus* (tree of heaven), *Arundo donax* (giant bamboo), and tamarisk. This information will be incorporated into existing river Geographic Information System maps, providing information to the various public and private groups attempting to work on this problem. This proposal will be the first step toward developing a plan to control the spread of and/or eradicate these species. This project will provide a model for replication in which students work with agencies and private landowners to implement plans for improving the health of their watersheds. Completion will require three years.

The true power of this project is that the idea came from the students themselves. Part of the in-depth educational camping program supported by the Sacramento River Discovery Center and schools throughout the region includes a raft trip for students in grades 5-8 from Red Bluff to Mill Creek Park, 15 river miles with four interpretive stops. Discovery Center high school interns serve as interpreters and raft captains for younger students on this full day raft trip. In 1998-99, as they took hundreds of younger students on this trip, high school interns began to discuss what they could do about this problem of invasives. They suggested to the Discovery Center staff that we seek funding to support their work to map, develop an eradication plan, and, where possible, begin eradication and re-vegetation of native species.

5. In addition to the field and internship components, the Sacramento River Discovery Center proposes to develop multimedia materials focussed on a range of audiences representing different levels of participation in Central Valley restoration. This project will support development of a short video(7-15 minutes) teaching about bio-diversity.

Educational Objectives/how this project addresses ERP Strategic Goals:
The specific details of addressing these goals is included in the section titled Applicability to specific ERP Goals. This project will directly reach a minimum of 10,000 students per year through teacher training, high school/college natural resource academy, and student visitors to the Sacramento River Discovery Center. An additional 4,000 general public visitors per year are indirectly touched by the projects. These figures are conservative estimates based on current facilities. The Discovery Center Board is seeking additional funding to expand facilities within the next two years. If this work is successful, these numbers could easily be doubled. Task 5 of the proposal will reach over two million people annually.

The greatest potential for reaching large numbers lies in the inherent structure of Discovery Center programs to serve as models for replication. Currently three other National Forests in addition to our partner Mendocino National Forest, Shasta Trinity, Lassen, and Plumas, have sent personnel to learn about programs for possible replication. Lynn Sprague, retired regional Forest Supervisor, is working with SRDC, the U.S. Forest Service, and private industry to support this replication. Evaluation methods include teacher feedback forms for teacher training, student portfolios for high school/college interns, completed products, numbers of participants, and general public visitors. CALFED funding is critical to assure the continuing strength of this model, as it becomes more available for replication throughout the watershed.

Proposed Scope of Work

The high school/college natural resource academy is key to providing programs for younger students economically and maintaining a base of volunteers for projects and research on the watershed. The school year program has students working in the watershed for about 2 hours per day for the entire academic year. Students sign up for 2 class periods, provide their own transportation to and from the Discovery Center, and are trained in personal and interpersonal effectiveness and a general understanding of all the complex components of the watershed. They learn to facilitate all interpretive programs offered by the Center. Additionally, they choose a focus project on which to work for the entire year, such as bird or fisheries monitoring working with professionals in the field, learning, contributing, connecting to the facts and the heart of the watershed. The full time summer program places students with agency and industry partners for intense watershed experiences that benefit the host and improve the watershed in a tangible way.

The location of this project is at the Sacramento River Discovery Center adjacent to the Red Bluff Diversion Dam, on the 488 acres managed by Mendocino National Forest on which the Center resides. Additional work in the watershed is educational in nature, not effecting the river, its corridor, or tributaries in any physical way. The educational geographic boundaries, however, are much more expansive, reaching throughout the Sacramento River watershed and effecting change in populations throughout the watershed.

Task 1: Expansion of bird monitoring and volunteer recruitment and training in cooperation with the Point Reyes Bird Observatory.

SRDC will continue to expand its high school academy and adult volunteer training program focusing on documentation of bird communities and habitat analysis at SRDC and PRBO study sites along the Sacramento River corridor. This will include classroom and field work. Expanded training and recruitment of participants in the high school academy and adult training program will continue. In one year the number of people trained has almost tripled. This has greatly expanded interest in and support for bird studies and habitat work. Interns will also work with hundreds of younger students on bird studies and field experiences. With completion of the CALFED contract, work will begin. Point Reyes Bird Observatory (PRBO) staff will be scheduled to train interns and volunteers. Discovery Center staff will work with interns on an ongoing basis. Additional materials, field guides, binoculars, field journals, and other resource materials will be purchased. Students will keep field journals from which the SRDC bird list will be updated annually. They will lead bird walks for younger students and adult groups. They will place and monitor bird boxes for bluebirds, owls, and wood ducks. Instructional

videos will be produced as student final products. Bird displays for the new center will be planned and work initiated. Although not birds, bats will also be encouraged in adjacent agricultural land by providing and monitoring bat boxes.

Task 2: Native Grass Restoration Project: This project is an extension of the previous native grass plot work completed with CALFED support. This will build on the lessons learned with small experimental plots resulting in a large re-vegetation of 9 acres currently dominated by yellow star thistle. With completion of the CALFED contract, SRDC staff will oversee the training of high school/college interns in basic lessons pertaining to historic native grasslands in the Sacramento River Valley. These lessons will become part of the presentation to local partnering schools who will learn about the grasses, the planting site, and will plant native grass seed in plug containers. These plugs will be the responsibility of the participant classes, to be planted and cared for until planting at the native grass restoration site. SRDC staff and interns will also plant seed in plug containers and raise plugs in the greenhouse and/or as part of a display at the Center. Tehama County Resource Conservation District is also raising plugs for this project to help assure plenty of healthy starts for the re-vegetation project. After planting, the project will be monitored monthly with photo sites established and monthly pictures taken. This will provide visual data about the success of natives and any problem species that invade. Annual burning will be conducted by Mendocino National Forest to control star thistle.

Task 3: Native/Drought Tolerant Garden: First phase of this task funded by CALFED built a large population of people interested in landscaping with native/drought tolerant plants. Nearly 1000 plants from Discovery Garden stock were propagated and sold. This barely scratched the surface of the requests we've had for plants and training to replicate this type of garden, both for private landscaping and as learning labs on school grounds. With completion of the CALFED contract, SRDC staff will begin student and volunteer training about the plants in Discovery Garden to include identification, propagation, annual care and garden maintenance. Plants will be planted, organized, and maintained throughout the year. Once a year a plant sale will help promote native/drought tolerant landscaping. An additional component has been requested and is being provided in partnership with the California Native Plant Society, teacher trainings to prepare teachers to establish native plant gardens on their school sites.

Task 4: Mapping and eradication plan for non-native invasive plants: Mapping and development of an eradication plan for three pervasive non-natives in a 15 mile stretch of the Sacramento River is the goal of this project. High school interns will work with agency specialists and partner private landowners to develop Global Positioning System (GPS) data locating *Ailanthus* (tree of heaven), *Arundo donax* (giant bamboo), and tamarisk. Hewlett Packard and the California Department of Water Resources are providing hardware, software, GIS data, and expertise to support a GIS station at the Discovery Center. U.S Fish & Wildlife Service and California Department of Water Resources have agreed to partner on this project providing boat time on the river. A private supporter has donated a 10-person raft for use on the project. The current proposal is critical at this time to develop a foundation of good working relationships and on the ground practices to build a long-term plan under the next phase of this project. It's also imperative to begin immediate work on noxious weeds just moving into this stretch of the river to contain and eradicate them as soon as possible. From a public relations/education perspective, it's also important to respond to and model for young people

learning about and working on the river that their ideas matter and that good ideas deserve prompt attention and action. This project will coordinate with team Arundo del Norte. This group has been working for several years on techniques for monitoring *Arundo*.

The plan: SRDC staff and contracted specialists will facilitate work with a core team of high school juniors and seniors (SRDC interns). These students will learn about the problem of invasives, participate in facilitated development of river corridor maps and an eradication plan for these invasives on this 15-mile stretch of the river, and, where possible, begin eradication. They will be trained by a trained instructor in the use of GIS and GPS as tools for mapping invasive plants in a watershed. They will present regular updates to all SRDC interns who, in turn, will share the problem and the project with the hundreds of elementary and middle school students who participate in Discovery Center programs. Year one students will leave a written and computer record of their findings for use by later students who pick up the mapping and eradication process where they end after one year.

Aerial photos will be taken of a 15-mile stretch of the Sacramento River and bordering riparian habitat when these specific invasives are apparent. Students, SRDC personnel, and agency partners will do ground confirmation of the invasives from the river for the entire stretch and on four specified sites which are used as educational focus areas for Sacramento River Discovery Center raft trips. These sites are Lindauer River Ranch (private), Sacramento River Refuge (U.S. Fish and Wildlife Service), Shasta View Farms (private), and the 488 acres of riparian land on which the Discovery Center is located and which is managed by Mendocino National Forest. On these four sites, GPS locations will be taken, converted to GIS data, and added to the data base of GIS information gathered by the Department of Water Resources and displayed and used at the Sacramento River Discovery Center. While these field observations are in progress, staff and/or contract specialists will be organizing existing materials into a format to provide a base of GIS material to which the new information from this proposal will be added.

Using the information from these field observations, an eradication plan will be written by the student team facilitated by staff and specialists with support from agency personnel and private partners. If possible, at least one eradication with re-vegetation of native species will be included as the final product of the project each year to leave students with a sense of accomplishing something on the ground. This problem, invasive plant species replacing natives, is a serious concern for the entire watershed. Mapping and an eradication plan are the first steps in reversing this problem. Benefits include: training in the use of technology, use of technology to teach others about the problem of invasives, connection to the wider world through the SRDC web page and posting results of this project on the web page, development of a model to be used throughout this watershed and in watersheds everywhere for students to work on solutions to the problem of invasive species, and strengthening of the public/private partnership of landowners and managers along this watershed as a precursor to a watershed-wide plan for managing invasive species. The Discovery Center has received a grant of extensive GIS hardware, software, and training through a program supported by Hewlett Packard. This proposed project will build on that program and apply on the groundwork to expand the data of the GIS system.

The progress of this project will be measured by successful completion of the project products, GIS mapping of target invasive plants, eradication plan, eradication project (if possible), results

posted on SRDC web page, and final report. Additional indicators of success will be the number of students who participate in SRDC programs which include lessons about invasives, development of solid partnerships with agencies and private landowners, and development of educational materials (specifically GPS/GIS lessons for use with high school students). The project will be assessed on an ongoing basis through regular SRDC staff meetings with modifications incorporated as needed to assure quality products and processes.

Task 5: Development of Bio-diversity materials. This component is planned in conjunction with staff at Bodega Marine Lab who have developed similar materials on other topics. The work will be contracted and completed in conjunction with SRDC staff and advisors.

Two videos will cover critical issues in the field of restoration ecology, conservation biology and bio-diversity. Each video will be geared to two audiences but exploring the same themes. One target audience is grades 5-6 through adults. This will be produced as through CALFED support for this project.. The other is aimed at interested high school, university and decision-makers. This will be produced by Bodega Marine Lab. These videos will be shared by both organizations and distributed to other partners throughout the watershed.

These multimedia materials have the advantage of traveling readily to other venues. They will be installed at SRDC, California Academy of Sciences, UC Bodega Marine Laboratory and the two NOAA Marine Sanctuaries- the Gulf of the Farallones, located in San Francisco, and the Cordell Bank Sanctuary located at Pt.Reyes National Seashore. These five sites represent different audiences each reflecting different points of view in California's water, agriculture and salmon tensions. The videos will have wide application throughout the state. We estimate that these materials will reach over two million people annually. Additionally there is another audience including educating legislative and agency staff and decision makers in the complex issues of bio-diversity and the molecular biology that is necessary for assessing biological organization at the population level which is the legal level of ESA interpretation for protected species.

By drawing in the coast to Valley transect in themes, the topic of inter annual variation in ocean and inland productivity is addressed. We will describe different time scales and environmental conditions that drive variation in salmon abundance and how *both* the Central Valley and ocean habitat experiencing different types of physical and biological forces-each playing a role in the annual number of return for each stock. These media will support and enhance the development phase of the SRDC and complement the capital plan for the building and the vision plan for incrementally creating educational success one step at a time. Additionally, the wall graphics and interactive modules will amplify the learning process of the SRDC field experience including how a living stream works and the value of controlling invasive plants

Work Schedule

Work to be performed for the period of October 1 through September 30 for three years beginning in 2000. Each of the five tasks could stand alone.

Task 1: Expansion of bird program

Cost year 1: $34,200
Cost year 2: $25,200
Cost year 3: $19,200

October through February: Recruit, train interns and volunteers; provide school programs.

March through May: Bird studies with PRBO staff. Interpretive programs.
June through August: Interpretive programs with school and community groups.
September: Begin training new interns; new school year interpretive programs begin.
Report: Report due in December of each year.

Task 2: Expansion of Native Grass project

Cost year 1: $19,800
Cost year 2: $14,400
Cost year 3: $10,200

October through December: Clear out non-native plants. Propagate grasses. Plant grasses.
January through September: Study grasses and develop educational materials. Maintain plots. Initiate monitoring program. Interpretive programs for school groups and the general public.
Report: Report documenting the grass plot and interpretive programs due December.

Task 3: Native/Drought Tolerant Plant Garden project

Cost year 1: $19,800
Cost year 2: $14,400
Cost year 3: $10,200

October through December: Train new interns on plant identification, propagation, and interpretive programs. Propagate plants. Begin interpretive programs.
January through September: Complete garden mapping. Propagate and maintain plants. Continue garden labeling project. Maintain and improve trail. Develop interpretive and promotional materials. Spring Watershed Celebration plant sale. Provide interpretive programs.
Report: Report on success of program including interpretive programs and materials, propagation program, and garden greenhouse and shade house.

Task 4: Invasives, mapping and eradication plan

Cost year 1: $61,416
Cost year 2: $51,600
Cost year 3: $41,400

October through December: Purchase equipment (year 1 only) Train new interns on GIS and GPS. Do fly-over aerial photos. Begin ground verification using GPS.
January through March: Incorporate GPS into GIS. Post on Web page.
April through June: Continue ground verification and GPS work. If possible, initiate an eradication of an invasive.
July through September: Complete written documentation of year's work for next class. Complete eradication plan (final year).

Task 5: Interpretive videos and activities on biodiversity

Cost year 1: $57,648

Year 1, this task will be completed in one year.

Applicability to specific ERP goals:
Goal 1: At Risk Species
At risk species require healthy habitat. Through the study of birds, native plants, and invasives, students and volunteers learn about the need for complex systems to support the greatest diversity of species. Bird habitat includes grasslands, oak woodland, chaparral, riparian forests, mountain forests, ponds, and rivers. The incredible interdependence of the components of the habitats of the Sacramento River watershed becomes apparent in the study of birds. Systems

understanding is the outcome of students studying any piece of the ecosystem puzzle. Eventually they find it connected to all the other pieces. Likewise, grassland studies show the incredible, and largely overlooked, importance of grasslands to the health of the larger system. Our students begin with the grasslands to reach an understanding of connectedness. The native plant garden gives students a community connection as they learn about, raise plants, and, through the programs they lead, encourage landscaping with native and drought tolerant plants.

Goal 2: Ecosystem processes and biotic communities.
By studying birds, learning about limiting factors, and placing nesting boxes for species of concern, students learn about and then pass on lessons of biodiversity and connections within healthy ecosystems. Plant studies both in grasslands and other native plant communities result in the same lessons. Specific lessons using original materials such as the Sacramento River Handbook, the rich document produced by the SB 1086 committee, or articles in bird, plant, forestry, or agricultural publications teach students about the complex interactions between all species and their environment, and the role of humans in the whole system.

Goal 3: Harvestable species.
Particularly when we study game birds and the role of hunters in establishing habitat in the Sacramento Valley for the long-term survival of many species, the concept of harvestability becomes part of our student's ecosystems understanding. In the same way, when we talk about healthy grasslands, we talk about how they are balanced with the grazers with whom they evolved. In the absence of such natural management of grasslands, human management can improve the health of the system. This leads to an understanding of sustainability and the need to balance harvest with production.

Goal 4: Habitats: Bird and native plant studies teach about the complexities of habitats. Native grass restoration connects students to the development of an important habitat. Knowledge about and work with exotics also teaches about habitats, and changes in relationship to civilization. This combination of learning through resources and direct experience builds the best sort of citizens, those with a commitment to good stewardship.

Goal 5: Non-native invasive species: The invasives that we study most carefully through our programs are *Ailanthus* (tree of heaven), *Arundo* (giant bamboo), and yellow star thistle. With all three, we consider aggressiveness, effects on water availability for other plants, loss of diversity in habitats, and spread of the invasives. In the case of star thistle, we will work with Mendocino National Forest to attempt burn control of the invasive and establishment of native grasses through plug planting. Starlings are the invader we most study in our bird project, a healthy population currently displacing other cavity nesters on site. With the mapping of *Arundo* and *Ailanthus* on a stretch of the river with which our interns are intimately familiar, the hope is that we can begin to engage students throughout the watershed with this important work. Our project will create a model for replication. With the pervasiveness of these non-natives, perhaps the only real hope of halting their spread is through the use of large numbers of volunteers throughout the watershed. Students could provide that volunteer base.

Goal 6: Sediment and water quality: As part of the native plant study on site, students identify potential erosion sites and work to re-vegetate with natives. This process will continue. The

main work has been with sandbar willow cuttings, deer grass, and plugs of *Carex*. This has been and will continue to be one of the most effective ways our high school interns mentor younger students to promote stewardship activities throughout the watershed.

This proposal is the expansion of a previously funded project and will establish this highly successful intern project as a model for replication at other sites. The project number is 99-B20. The current status of that project is that it's in progress, although the final contract has not been received, as of April 24, 2000 so funds cannot be obligated.

5. Qualifications:

Project Director, CATHY KLINESTEKER, Professional Vita

EDUCATION

California State University, Sacramento, MA. Curriculum Development, 1991; Educational Administration Credential, 1989
Biology and General Science Single Subject Credential, 1986
University of California, Davis; Multiple Subject Credential, 1977; B.S., Environmental Communication, 1976.

CURRENT PROFESSIONAL COMMITMENTS

Executive Director, Sacramento River Discovery Center
Franklin/Covey 7 Habits facilitator
Project WET facilitator
Project Learning Tree facilitator
Educational Consultant

PREVIOUS PROFESSIONAL COMMITMENTS

Consultant, National Parks as Classrooms
Regional Staff Development in Science, Math, Interdisciplinary Curricula, Cognitive Coaching, Grant Writing, and Site Level Planning in K-12 Schools in the nine counties of Northeastern California.
Special Projects Director, Red Bluff Union High School.
Principle Investigator, Science In Rural California, regional National Science Foundation staff development project for teachers including training in effective teaching strategies and management and implementation of hands-on science.
Project Director, Science In Rural California, 10 years working with this National Science Foundation project; responsible for all aspects of administration.
Adopt A Stream Project Director. Included grant writing, project planning and implementation, and establishing partnerships with local government agencies and citizen's groups to introduce the study of watersheds into the curricula of local schools.
California Science Teacher's Association, regional conference steering committee.
Teacher, Evergreen and Los Molinos Elem. and Red Bluff High School.

AWARDS AND CREATIVE ACTIVITIES

Founder's Award, Sacramento River Preservation Trust, for extraordinary efforts in helping to preserve the natural values of the Sacramento River

Project Wild & Project Wild Aquatic training
California Department of Education State Finalist for Outstanding Leadership in Science Supervision
Outdoor Biology Instructional Strategies staff developer
Salmon, From Eggs to Ocean. Salmon Stamp grant supported purchase of a refrigerated aquarium to study, raise salmon, release them into the local watershed, and then set up a tide pool environment in the aquarium the last half of the year while students studied the local watershed/ocean connection. This study culminated with a four day trip to Monterey.
Adopt A Stream project with 12 schools. Salmon Stamp funding supported the dissemination of the Salmon rearing project into 12 additional schools in the region.
Teacher Training Conference, Monterey Field Trip. Field training for teachers to duplicate the Monterey Field Trip with their students. Materials developed for this training have been incorporated into the Monterey Bay Aquarium Educational Packet for teachers, the Asilomar State Beach tide pool activities packet, and the Point Lobos State Reserve teacher's preparation guide.
Christa McAuliffe Fellowship for working with students to restore a native wetland/pond adjacent to Evergreen School.
National Science Foundation grant to support the SIRC project for 3 years in Northeastern California.
Consultant, California Department of Education, California Learning Assessment System writing open-ended science assessment items and development of embedded assessment model activities.

Compliance with standard terms and conditions:
This project will comply with all state and federal standard terms.

Sacramento River Discovery Center CALFED 2001 Budget

Task Year 1	Mileage	Direct Salary and Benefits	Service Contracts	Material and Acquisition Costs	Miscellaneous and other Direct Costs	Overhead and Indirect Costs	**Total Cost**
Task 1 Birds	3000	14,000	7000	3000	1500	5,700	**34200**
Task 2 Grasses	0	12,000	0	3000	1,500	3,300	**19800**
Task 3 Garden	0	12,000	0	3,000	1500	3,300	**19800**
Task 4 Invasives	3000	23,000	10,000	13,680	1500	10236	**61416**
Task 5 Video	6340	0	31,830	7,470	2400	9608	**57,648**
Total	**12340**	**61,000**	**48830**	**30150**	**8400**	**32,144**	**192864**
Year 1 Cost Share							
Task 1 Birds	2,000	15,000	5000	3,000	5000	6,000	**36,000**
Task 2 Grasses	1,000	40,000	5,000	10,000	1,000	0	**57000**
Task 3 Garden	0	15,000	3000	10,000	5000	0	**33000**
Task 4 Invasives	3000	20,000	3,000	5000	5,000	0	**36000**
Task 5 Video	500	20,000	2,000	20000	10,000	0	**52,500**
Total	**6,500**	**110,000**	**18,000**	**48,000**	**26,000**	**6,000**	**214,500**

Task Year 2	Mileage	Direct Salary and Benefits	Service Contracts	Material and Acquisition Costs	Miscellaneous and other Direct Costs	Overhead and Indirect Costs	**Total Cost**
Task 1 Birds	2000	11,000	5000	2000	1000	4,200	**25200**
Task 2 Grasses	0	9,000	0	2000	1,000	2,400	**14400**
Task 3 Garden	0	9,000	0	2,000	1000	2,400	**14400**
Task 4 Invasives	2000	23,000	10,000	7,000	1000	8600	**51600**
Total	**4000**	**52000**	**15000**	**13000**	**4000**	**17600**	**105600**
Year 2 Cost Share							
Task 1 Birds	1,000	17,000	5000	2,000	1000	0	**26000**
Task 2 Grasses	1,000	10,000	5,000	5,000	1,000	0	**22000**
Task 3 Garden	0	15,000	3000	10,000	5000	0	**33000**
Task 4 Invasives	3000	20,000	3,000	5000	10,000	0	**41000**
Total	**5,000**	**62,000**	**16,000**	**22,000**	**17,000**	**0**	**122000**

Task Year 3	Mileage	Direct Salary and Benefits	Service Contracts	Material and Acquisition Costs	Miscellaneous and other Direct Costs	Overhead and Indirect Costs	**Total Cost**
Task 1 Birds	1000	9,000	4000	1000	1000	3,200	**19200**
Task 2 Grasses	0	7,000	0	1000	500	1,700	**10200**
Task 3 Garden	0	7,000	0	1,000	500	1,700	**10200**
Task 4 Invasives	1000	23,000	5,000	5,000	500	6900	**41400**
Total	**2000**	**46000**	**9000**	**8000**	**2500**	**13500**	**81000**
Year 3 Cost Share							
Task 1 Birds	1,000	17,000	5000	2,000	1000	0	**26000**
Task 2 Grasses	1,000	10,000	5,000	5,000	1,000	0	**22000**
Task 3 Garden	0	15,000	3000	10,000	5000	0	**33000**
Task 4 Invasives	3000	25,000	3,000	5000	10,000	0	**46000**
Total	**5,000**	**67,000**	**16,000**	**22,000**	**17,000**	**0**	**127000**

SUMMARY	Mileage	Direct Salary and Benefits	Service Contracts	Material and Acquisition Costs	Miscellaneous and other Direct Costs	Overhead and Indirect Costs	**Total Cost**
Task 1 Birds	5,000	34,000	16000	6000	3500	12,900	**77400**
Task 2 Grasses	0	28,000	0	6000	3,000	7,400	**44400**
Task 3 Garden	0	28,000	0	6,000	3000	7,400	**44400**
Task 4 Invasives	6000	69,000	25,000	25,680	3000	25736	**154416**
Task 5 Video	6340	0	31,830	7,470	2400	9608	**57,648**
Total	**17,340**	**159,000**	**72830**	**51150**	**14900**	**63,044**	**378264**
Summary Cost Share							
Task 1 Birds	4,000	49,000	15000	7,000	7000	0	**82000**
Task 2 Grasses	3,000	60,000	15,000	20,000	3,000	0	**101000**
Task 3 Garden	0	45,000	9000	30,000	15000	0	**99000**
Task 4 Invasives	9000	65,000	9,000	15000	25,000	0	**123000**
Task 5 Video	500	20,000	2,000	20000	10,000	0	**52,500**
Total	**16,500**	**239,000**	**50,000**	**92,000**	**60,000**	**0**	**457500**

STATE OF CALIFORNIA

NONDISCRIMINATION COMPLIANCE STATEMENT

STD. 19 (REV. 3-95) FMC

COMPANY NAME

SACRAMENTO RIVER DISCOVERY CENTER

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

Cathy Klinesteker

DATE EXECUTED

May 9, 2000

EXECUTED IN THE COUNTY OF

Tehama

PROSPECTIVE CONTRACTOR'S SIGNATURE

Cathy Klinesteker

PROSPECTIVE CONTRACTOR'S TITLE

Executive Director

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

Sacramento River Discovery Center

Environmental Compliance Checklist

All applicants must fill out this Environmental Compliance Checklist. Applications must contain answers to the following questions to be responsive and to be considered for funding. *Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.*

1. Do any of the actions included in the proposal require compliance with either the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), or both?

   _____ YES XX NO

2. If you answered yes to # 1, identify the lead governmental agency for CEQA/NEPA compliance.

   _____
   Lead Agency

3. If you answered no to # 1, explain why CEQA/NEPA compliance is not required for the actions in the proposal.

4. If CEQA/NEPA compliance is required, describe how the project will comply with either or both of these laws. Describe where the project is in the compliance process and the expected date of completion.

5. Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?

   _____ YES XX NO

   If yes, the applicant must attach written permission for access from the relevant property owner(s). Failure to include written permission for access may result in disqualification of the proposal during the review process. Research and monitoring field projects for which specific field locations have not been identified will be required to provide access needs and permission for access with 30 days of notification of approval.

6. Please indicate what permits or other approvals may be required for the activities contained in your proposal. Check all boxes that apply.

LOCAL

Conditional use permit	___	
Variance	___	
Subdivision Map Act approval	___	
Grading permit	___	
General plan amendment	___	
Specific plan approval	___	
Rezone	___	
Williamson Act Contract cancellation	___	
Other _____ (please specify)	___	
None required	___	

STATE

CESA Compliance	___	(CDFG)
Streambed alteration permit	___	(CDFG)
CWA § 401 certification	___	(RWQCB)
Coastal development permit	___	(Coastal Commission/BCDC)
Reclamation Board approval	___	
Notification	___	(DPC, BCDC)
Other _____ (please specify)		
None required	___	

FEDERAL

ESA Consultation	___	(USFWS)
Rivers & Harbors Act permit	___	(ACOE)
CWA § 404 permit	___	(ACOE)
Other _____ (please specify)		
None required	___	

DPC = Delta Protection Commission
CWA = Clean Water Act
CESA = California Endangered Species Act
USFWS = U.S. Fish and Wildlife Service
ACOE = U.S. Army Corps of Engineers

ESA = Endangered Species Act
CDFG = California Department of Fish and Game
RWQCB = Regional Water Quality Control Board
BCDC= Bay Conservation and Development Comm.

OMB Approval No. 0348-0043

APPLICATION FOR FEDERAL ASSISTANCE

2. DATE SUBMITTED 5-26-00	Applicant Identifier
3. DATE RECEIVED BY STATE	State Application Identifier
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

1. TYPE OF SUBMISSION:

Application: ☐ Construction ☒ Non-Construction

Preapplication: ☐ Construction ☐ Non-Construction

5. APPLICANT INFORMATION

Legal Name: Sacramento River Discovery Center

Organizational Unit:

Address *(give city, county, State, and zip code)*: P.O. Box 1298, 1000 Sale Lane, Red Bluff, CA 96080 Tehama Co.

Name and telephone number of person to be contacted on matters involving this application *(give area code)*: Cathy Klinesteker 530-527-1196

6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 68 - 0374064

7. TYPE OF APPLICANT: *(enter appropriate letter in box)* ☐

A. State
B. County
C. Municipal
D. Township
E. Interstate
F. Intermunicipal
G. Special District
H. Independent School Dist.
I. State Controlled Institution of Higher Learning
J. Private University
K. Indian Tribe
L. Individual
M. Profit Organization
N. Other (Specify) Private non profit

8. TYPE OF APPLICATION:

☐ New ☒ Continuation ☐ Revision

If Revision, enter appropriate letter(s) in box(es) ☐ ☐

A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other*(specify)*:

9. NAME OF FEDERAL AGENCY: U.S. FISH & WILDLIFE SERVICE

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: XX - XXX

TITLE:

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Watershed Education; Projects touching Millions

12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*: Sacramento River Watershed, Northern California

13. PROPOSED PROJECT

Start Date: Jan, 2001 Ending Date: Sept, 2003

14. CONGRESSIONAL DISTRICTS OF: Doug Ose

a. Applicant: Sac River Disc Center

b. Project: Watershed Education

15. ESTIMATED FUNDING:

a. Federal	$ 379,464 .00
b. Applicant	$ 457,500 .00
c. State	$ .00
d. Local	$ .00
e. Other	$ .00
f. Program Income	$ .00
g. TOTAL	$ 836,964 .00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:

DATE _____

b. No. ☒ PROGRAM IS NOT COVERED BY E. O. 12372
☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

☐ Yes If "Yes," attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Type Name of Authorized Representative: Cathy Klinesteker	b. Title: Executive Director	c. Telephone Number: 530-527-1196
d. Signature of Authorized Representative: Cathy Klinesteker		e. Date Signed: 5-26-00

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Standard Form 424 (Rev. 7-97)
Prescribed by OMB Circular A-102

Land Use Checklist

All applicants must fill out this Land Use Checklist for their proposal. Applications must contain answers to the following questions to be responsive and to be considered for funding. *Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.*

1. Do the actions in the proposal involve physical changes to the land(i.e. grading, planting vegetation, or breeching levees) or restrictions in land use (i.e. conservation easement or placement of land in a wildlife refuge)?

   _____ YES XX NO

2. If NO to # 1, explain what type of actions are involved in the proposal (i.e., research only, planning only).

3. If YES to # 1, what is the proposed land use change or restriction under the proposal?

4. If YES to # 1, is the land currently under a Williamson Act contract?

   _____ YES _____ NO

5. If YES to # 1, answer the following:

   Current land use _____
   Current zoning _____
   Current general plan designation _____

6. If YES to #1, is the land classified as Prime Farmland, Farmland of Statewide Importance or Unique Farmland on the Department of Conservation Important Farmland Maps?

   _____ YES _____ NO _____ DON'T KNOW

7. If YES to # 1, how many acres of land will be subject to physical change or land use restrictions under the proposal?
   _____

8. If YES to # 1, is the property currently being commercially farmed or grazed?

   _____ YES _____ NO

9. If YES to #8, what are the number of employees/acre_____
   the total number of employees _____

10. Will the applicant acquire any interest in land under the proposal (fee title or a conservation easement)?

_____ YES

XX NO

11. What entity/organization will hold the interest?_____

12. If YES to # 10, answer the following:

Total number of acres to be acquired under proposal _____
Number of acres to be acquired in fee _____
Number of acres to be subject to conservation easement _____

13. For all proposals involving physical changes to the land or restriction in land use, describe what entity or organization will:

manage the property _____

provide operations and maintenance services _____

conduct monitoring _____

14. For land acquisitions (fee title or easements), will existing water rights also be acquired?

_____ YES

_____ NO

15. Does the applicant propose any modifications to the water right or change in the delivery of the water?

_____ YES

XX NO

16. If YES to # 15, describe_____

Sacramento River Discovery Center

Cathy Klinesteker
Executive Director

P.O. Box 1298
Red Bluff, CA 96080

Phone: (530) 527-1196
Fax: (530) 527-1312
E-Mail: cklinest@tehama.k12.ca.us
Web Page: http:/www.srdc.tehama.k12.ca.us

May 7, 2000

Tehama County Board of Supervisors
332 Pine
Red Bluff, CA 96080

Dear Board of Supervisors:

Although our proposal does not include work on the ground under your jurisdiction and we are not bound by the requirement to notify local entities, in accordance with our history of trying to communicate what's going on at the Sacramento River Discovery Center, I'm enclosing a copy of the Executive Summary of our current proposal for CALFED funding, for your information.

This proposal requests support for expansion of our intern program with five specific tasks: bird studies, native grass studies and planting on U.S. Forest Service property at Red Bluff Recreation Area, Discovery Garden program and access improvements, mapping invasive non-native plants from Red Bluff to Tehama, and working with staff from Bodega Marine Lab to develop professional videos on biodiversity to use with displays.

Thank you for your continued support of our work. In a small town in a small county sometimes it seems like important work is overwhelming. I'm truly thankful that in our small county, we work together to build the best world possible for future generations. Your role in that work is greatly appreciated.

Sincerely,

Cathy Klinesteker

Cathy Klinesteker