Cultivating Watershed Stewardship

Project Information

1. **Proposal Title:**

   Cultivating Watershed Stewardship

2. **Proposal applicants:**

   Craig McNamara, FARMS Leadership, Inc.
   Mary Kimball, FARMS Leadership, Inc.

3. **Corresponding Contact Person:**

   Mary Kimball
   FARMS Leadership, Inc.
   5265 Putah Creek Road Winters, CA 95694
   (530) 795-1520
   kimball@quiknet.com

4. **Project Keywords:**

   Environmental Education
   Habitat Restoration, Riparian
   Wildlife-friendly Agriculture

5. **Type of project:**

   Education

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

   No

7. **Topic Area**:

   Environmental Education

8. **Type of applicant:**

   Private non-profit

9. **Location - GIS coordinates:**

   Latitude:

   Longitude:

   Datum:

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

There are multiple educational field day locations in Yolo, Solano, Butte, Tehama, Glenn, Colusa, Sonoma, San Joaquin, and Fresno Counties. Restoration sites will be primarily riparian in nature; sloughs, creeks, rivers, wetlands, and agricultural tailwater ponds. These sites are identified through our partners (Audubon, The Nature Conservancy, San Joaquin County RCD, etc.), and are existing ecosystem restoration projects, many of which are funded by CALFED.

10. **Location - Ecozone:**

    Code 15: Landscape

11. **Location - County:**

    Butte, Colusa, Contra Costa, Fresno, Glenn, Marin, Sacramento, San Joaquin, Solano, Sonoma, Tehama, Yolo

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:**

    Multiple: Herger (2nd), Ose (3rd), Thompson (1st), Woolsey (6th), Pombo (11th), Radanovich (19th), Matsui (5th)

15. **Location:**

    California State Senate District Number: Multiple: 3,4,5,6,14,16

    California Assembly District Number: Multiple

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

    Three

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: 10%

Total Requested Funds: $136,137

b) Do you have cost share partners already identified?

Yes

If yes, list partners and amount contributed by each:

Audubon California $1,250,000

Yolo County Resource Conservation District $220,000

The Nature Conservancy - Sacramento River Project $235,000

San Joaquin County Resource Conservation District $300,000

National Fish and Wildlife Foundation $175,000

c) Do you have potential cost share partners?

Yes

If yes, list partners and amount contributed by each:

San Joaquin County Office of Education $30,000

Packard Foundation $60,000

Lower Putah Creek Coordinating Committee $100,000

Ulatis RCD/CAFF $75,000

Adopt-A-Watershed $115,000

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?**

    No

    Have you previously received funding from CALFED for other projects not listed above?

    No

19. **Is this proposal for next-phase funding of an ongoing project funded by CVPIA?**

    No

    Have you previously received funding from CVPIA for other projects not listed above?

    No

20. **Is this proposal for next-phase funding of an ongoing project funded by an entity other than CALFED or CVPIA?**

    No

    Please list suggested reviewers for your proposal. (optional)

Daniel Strait	**US Fish and Wildlife Service**	**(916) 414-6456**	**daniel_strait@mail.fws.gov**
Linden Brooks	**Natural Resources Conservation Service**	**(530) 527-2667**	**linden.brooks@ca.usda.gov**
Larry Lloyd	**Great Valley Center**	**(530) 621-4946**	**larry@greatvalley.org**
Stefan Lorenzato	**CA State Water Resources Control Board**	**(916) 341-5525**	**lores@dwq.swrcb.ca.gov**

21. **Comments:**

    This program is a multi-regional environmental education program, which will be implemented at multiple locations in four regions. Therefore, it is extremely difficult to pinpoint GPS coordinates of educational project locations, since there will most likely be over 30 separate locations.

Environmental Compliance Checklist

Cultivating Watershed Stewardship

1. **CEQA or NEPA Compliance**
   a) Will this project require compliance with CEQA?

      No
   b) Will this project require compliance with NEPA?

      No
   c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

      This is an Environmental Education Program

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

   CEQA Lead Agency:
   NEPA Lead Agency (or co-lead:)
   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
   -EIR
   Xnone

   NEPA
   -Categorical Exclusion
   -Environmental Assessment/FONSI
   -EIS
   Xnone

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

4. **CEQA/NEPA Process**
   a) Is the CEQA/NEPA process complete?

      Not Applicable

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

5. **Environmental Permitting and Approvals** (*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

Coastal Development Permit

Reclamation Board Approval

Notification of DPC or BCDC

Other

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation

ESA Compliance Section 10 Permit

Rivers and Harbors Act

CWA 404

Other

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land. Agency Name: Multiple	Required, Obtained
Permission to access state land. Agency Name: Multiple	Required, Obtained
Permission to access federal land. Agency Name: Multiple	Required, Obtained
Permission to access private land. Landowner Name: Multiple	Required, Obtained

6. **Comments.**

Please refer to Table 1 of the proposal, "Program Sites and Partners", for specific information on the existing CALFED projects that this education program is partnering with. For example, Audubon California has already obtained ALL permissions necessary (through their own CALFED grant)to access the private land that they are restoring and which will be the sites of numerous educational field days. This is the case as well with our other partners; The Nature Conservancy, San Joaquin County RCD, Ulatis RCD, Yolo RCD, and Southern Sonoma RCD. Most of the land that is being restored is private, but there are some lands that are federally owned (i.e. Department of Fish and Game), or owned by a private municipality (i.e. East Bay MUD). Once again, all permissions have already been obtained for this education program.

Land Use Checklist

Cultivating Watershed Stewardship

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?**

   No

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

   Educational programming, working with existing ecosystem restoration activities. Our partners (see proposal)have secured all necessary permits and permissions, since these restoration projects are already underway.

4. **Comments.**

   Please see Form III, Environmental Compliance Checklist. Once again, our program is environmental education, and we are working with EXISTING ecosystem restoration projects (most of which are funded by CALFED), already underway with all necessary permits and permissions required.

Conflict of Interest Checklist

Cultivating Watershed Stewardship

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):

Craig McNamara, FARMS Leadership, Inc.
Mary Kimball, FARMS Leadership, Inc.

Subcontractor(s):

Are specific subcontractors identified in this proposal? No

Helped with proposal development:

Are there persons who helped with proposal development?

Yes

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

Kim Stokely Adopt-A-Watershed

Judy Boshoven Audubon California

Dan Leroy FARMS Leadership, Inc.

Amy Hoss The Nature Conservancy - Sacramento River Project

Comments:

This proposal was PRIMARILY written by Mary Kimball, FARMS Leadership, Inc. This proposal identifies MANY organizational partners and their staff. Please see Table 5 in the proposal for all partner staff associated with this education program, if necessary.

Budget Summary

Cultivating Watershed Stewardship

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	Program Management and Evaluation	4992	115000	28750	2000	2000	5500	11700	0	164950.0	16495	181445.00
2.1	Implement FARMS and SLEWS in the Sacramento Valley Region	1740	35000	7450	5500	11300	11000	0	0	70250.0	7025	77275.00
2.2	Implement FARMS and SLEWS in the Delta Region	700	10000	1200	1500	3800	5500	0	0	22000.0	2200	24200.00
2.3	Implement FARMS and SLEWS in the San Joaquin Region	350	5000	600	1000	800	0	0	0	7400.0	740	8140.00
2.4	Implement FARMS and SLEWS in the Bay Region	700	10000	1200	1500	3800	5500	0	0	22000.0	2200	24200.00
3.1	Conduct a Center Feasibility Study	240	6720	1680	0	0	10000	0	0	18400.0	1840	20240.00
3.2	Ulilize current Farm Center as a regional education and restoration center	800	22400	5600	0	3500	0	7000	0	38500.0	3850	42350.00
		9522	204120.00	46480.00	11500.00	25200.00	37500.00	18700.00	0.00	343500.00	34350.00	377850.00

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	Program Management and Evaluation	4992	120,750	30,188	2,500	2500	6000	6900	0	168838.0	16884	185722.00
2.1	Implement program in Sacramento Valley Region	3640	70000	20500	17000	23,300	17,500	2500	0	150800.0	15080	165880.00
2.2	Implement Program in Delta Region	1560	30000	7500	6500	13800	8000	2500	0	68300.0	6830	75130.00
2.3	Implement Program in San Joaquin Region	700	10000	1200	1500	3500	5500	0	0	21700.0	2170	23870.00
2.4	Implement Program in Bay Region	700	10000	1200	1500	3800	5500	0	0	22000.0	2200	24200.00
3.1	Conduct Center feasibility study	240	7056	1764	0	0	15000	0	0	23820.0	2382	26202.00
3.2	Ulilize current Farm Center as a regional education and restoration center	800	23520	5880	0	4000	0	0	0	33400.0	3340	36740.00
		12632	271326.00	68232.00	29000.00	50900.00	57500.00	11900.00	0.00	488858.00	48886.00	537744.00

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	Program Management and Evaluation	4992	126,788	31,697	2,500	3000	6500	6900	0	177385.0	17739	195124.00
2.1	Implement Program in Sacramento Valley Region	4160	82000	20500	22000	28,300	22000	0	0	174800.0	17480	192280.00
2.2	Implement Program in Delta Region	2080	40000	10000	9500	16300	9500	0	0	85300.0	8530	93830.00
2.3	Implement Program in San Joaquin Region	700	10000	1200	1500	3500	5500	0	0	21700.0	2170	23870.00
2.4	Implement Program in Bay Region	1000	15000	1800	1500	3800	5500	0	0	27600.0	2760	30360.00
3.1	Conduct Center feasibility study	240	7056	1764	0	0	0	0	0	8820.0	882	9702.00
3.2	Ulilize current Farm Center as a regional education and restoration center	800	23520	5880	0	4000	0	0	0	33400.0	3340	36740.00
		13972	304364.00	72841.00	37000.00	58900.00	49000.00	6900.00	0.00	529005.00	52901.00	581906.00

Grand Total=<u>1497500.00</u>

Comments.

As discussed in the Workplan, Task 1, Program Management, is necessary (interdependent) for the implementation of Tasks 2 and 3. However, our priorities in terms of funding for Tasks 2 and 3 are as follows; 1) Subtask 2.1 (Sacramento Valley Region) 2) Subtask 3.2 (Farm Center) 3) Subtask 2.2 (Delta Region) 4) Subtask 3.1 (Center feasibility study) 5) Subtask 2.3 (San Joaquin Region) 6)

Subtask 2.4 (Bay Region) It is feasible to fund all or part of the Subtasks under Task 2. It is also feasible to fund all or part of the Subtasks under Task 3. However, this program is a multi-regional program, and the more regions are funded the stronger the program. Also, the more regions that are funded, the more on-the-ground restoration is attained.

Budget Justification

Cultivating Watershed Stewardship

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

Format: Title of Position: Total Hours (Year1/Year2/Year3) Executive Director (Craig McNamara): 2,498 (832/832/832) Programs Director (Mary Kimball): 6,240 (2080/2080/2080) SLEWS State Coordinator (Dan Leroy): 6,240 (2080/2080/2080) Sacramento Valley Coordinator: 5,200 (1040/2080/2080) North Valley Coordinator: 4,340(700/1560/2080) San Joaquin Delta Regional Coordinator: 4340 (700/1560/2080) Fresno Coordinator: 1,800 (400/700/700) Bay Regional Coordinator: 2,400 (700/700/1000) Farm Center Coordinator: 3,120 (1040/1040/1040)

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

Format: Title of Position: Year1salary/Year2salary/Year3salary Executive Director: (40% of $50,000)$20,000/21,000/22,050 Programs Director: $50,000/52,500/55,125 SLEWS State Coordinator: $45,000/47,250/49,613 Sacramento Valley Coordinator:$25,000/40,000/42,000 North Valley Coordinator: $10,000/30,000/40,000 San Joaquin Delta Regional Coordinator: $10,000/30,000/40,000 Fresno Coordinator: $5,000/10,000/10,000 Bay Regional Coordinator: $10,000/10,000/15,000 Farm Center Coordinator: $30,000/31,500/33,075 (All 50-100% time salaries include a 5% pay increase each year)

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

Less than 50% time (all hours less than 1040) - 12% 50%-100% time (1040-2080 hours) - 25%

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

Most travel included in this proposal is local. The majority of Subtask 2.1 and 2.2 travel budget is for buses, which transport classes of students to the restoration sites in the SLEWS program. Although this travel is local (less than 60 miles roundtrip in most cases), the cost to rent school district buses ranges from $150-$250, depending on the district. For the purposes of this proposal, we have estimated each bus trip at $200. Over the 3-year grant period, the number of bus trips is estimated as follows; Subtask 2.1 - 195 ($39,000) Subtask 2.2 - 65 ($13,000) Subtask 2.3 and 2.4 - 0 Other travel, besides buses, is for mileage for coordinators and some schools, if they use a school vehicle to transport students to FARMS field days. Mileage is based on a rate of $.345/mile, and total miles (for all 3 years) under each Task is as follows; Task 1 - for travel to all regions by state staff - 20,300 Task 2.1 - schools/coordinators/travel to retreat - 15,950 Task 2.2 - schools/coordinators/travel to retreat - 13,050 Task 2.3 - schools/coordinators/travel to retreat - 11,600 Task 2.4 - schools/coordinators/travel to retreat - 13,050

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

This program includes many different kinds of supplies; food (for field days), office, computing, postage, research projects, and agriculture supplies. Each type of supply is listed below, with amounts based on Task/Subtask Food: After 8 years of experience, we know that each field day costs on average $250/day for snacks and lunch for 40 people (approx. 30 students plus 10 teachers, mentors, and staff). Therefore, the total cost for each Subtask (for the 3 year period) is as follows; Subtask 2.1 - 168 field days($42,000) Subtask 2.2 - 72 field days($18,000) Subtask 2.3 - 16 field days ($4,000) Subtask 2.4 -

24 field days ($6,000) Other food costs budgeted are for meetings ($300/year per region), workshops at the Farm Center ($2,500 total), and the Leadership Team/Student Retreat ($7,500 total). Office: The office supplies that are included for each region include binders and inserts (each student recieves a binder), paper for copies, miscellaneous office supplies such as pens, paper clips, etc. The totals below are for all three years; Subtask 2.1 - $1,500 Subtask 2.2 - $2,500 Subtask 2.3 - 1,000 Subtask 2.4 - $1,500 Subtask 3.2 - $1,500 Computing/Postage The numbers below are the total for all three years; Subtask 2.1 - $1,500 Subtask 2.2 - $1,500 Subtask 2.3 - $1,500 Subtask 2.4 - $1,500 Research Projects Each school group in the FARMS program undertakes a research project, as do many students in the SLEWS program. These supplies are for such items as; film, photo developing, table-top display materials, small tools for monitoring projects, etc. The total cost, for all three years, are as follows; Subtask 2.1 - $3,000 Subtask 2.2 - $2,500 Subtask 2.3 - $1,000 Subtask 2.4 - $1,500 Agriculture Supplies Ag supplies are mainly used in the SLEWS program, such as wood for building bird boxes (approximately 5 boxes for each restoration site = 400 boxes), materials for building waterfowl nesting structures (approximately 20 nesting structures), some plant materials, materials for greenhouse/shadehouse, small tools for field projects (i.e shovels, hoes, loppers), nails, bolts, etc. Total cost for all 3 years is as follows; Subtask 2.1 - $14,000 Subtask 2.2 - $8,500 Subtask 2.3 - $0 Subtask 2.4 - $0 Subtask 3.1 - $7,500

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.

The majority of the budget for Services or Consultants under Task 2 is for substitute teachers and teachers stipends. Substitute teachers: Each time a teacher attends a FARMS or SLEWS field day with their students, a substitute teacher must be hired to cover their classes for that day. Without such funding, MOST schools will not allow teachers to leave campus. Therefore, it is critical that costs for substitute teachers be funded. After 8 years of experience, we know that it costs approximately $100/day per substitute teacher. Therefore, the total costs for all 3 years of the program are computed below: Subtask 2.1 - approximately 415 teacher visits - $41,500 Subtask 2.2 - approximately 185 teacher visits - $18,500 Subtask 2.3 - approximately 80 teacher visits - $8,000 Subtask 2.4 - approximately 120 teacher visits - $12,000 Stipends: The FARMS program provides stipends to its teacher ($300 per school) based on the extra work required above and beyond field day activities (especially, the group research project). Costs for all 3 years; Subtask 2.1 - $9,000 Subtask 2.2 - $4,500 Subtask 2.3 - $3,000 Subtask 2.4 - $4,500 Other Services or Consultants: Under Task 1, we have asked for funds to implement a yearly Leadership Team/Student Leadership Retreat. For this retreat, we have estimated a cost of $5,500-6,500 per year to rent a facility and host this activity (2-3 days, for approximately 50 people) Under Subtask 3.1, we are proposing to hire a contractor to conduct a Farm and Nature Center Feasibility Study. We plan to put this project out to bid, and have been told that an amount of $25,000 is feasible for the type of study we are proposing (we recieved information from Audubon California, the Sacramento River Discovery Center, and the Yolo Basin Foundation). This amount will cover travel, labor, supplies, etc. Because we have not yet put this project to bid, we don't have an exact breakdown of costs.

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.

There is very little equipment that we are proposing to purchase, over $5,000, for this program. The only items are as follows; Task 1: Lease of one (1) mid-size truck for travel and supply transport to field days. The estimate that we have received for this type of vehicle is $450/month, and $1,500/year for insurance and registration. Subtask 3.2: 30'X 48' Greenhouse for the Farm Center Nursery expansion, $7,000 (Ranger 2000 Professional Package, including all parts and materials)

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.

All Project Management is included in Task 1, and all costs associated with insuring accomplishment of specific projects will be undertaken by the Executive Director @ 40% time, $78,813 (salary + benefits), the Programs Director (full-time $197,031) and the State SLEWS Director (full-time $177,329). Costs are for all three years.

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

Not applicable.

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 overhead rate encompasses the following; Phones - $400/month Cell phones - $400/month Furniture/Farm Center office upkeep - $100/month Bookkeeper - $10,000/year Other general office staff - $20,000/year CPA/Tax preparation/Audit - $5,000/year TOTAL - $137,400, or approximately 10% of direct costs (which are $136,137)

Executive Summary

Cultivating Watershed Stewardship

Cultivating Watershed Stewardship is a multi-regional environmental education program targeted to high school students in four CALFED Bay-Delta Regions: Sacramento Valley, Delta, San Joaquin, and Bay. The program goal is to improve ecosystem health through student participation in real-world habitat restoration and wildlife-friendly agriculture projects, utilizing local organizational partnerships. The hypothesis being tested by this program is: Hands-on, place-based, community-oriented education based on ecosystem restoration and wildlife-friendly farming will cultivate stewardship, increase knowledge, awareness, and skills, provide connections to the local environment, including the agricultural landscape, and empower youth to work individually and collectively towards environmental solutions. The Cultivating Watershed Stewardship approach is built upon highly successful and innovative programming and partnerships developed by FARMS Leadership, Inc. over the last eight years. Two programs, the FARMS Leadership Program and the SLEWS Program, are experiential outdoor education programs that introduce students to the principles of ecosystem restoration and natural resource sustainability through field days located on working farms and ranches in their local community. This proposal will implement new FARMS and SLEWS programs and expand already existing programs in the four CALFED Bay-Delta Regions, thereby reaching thousands of students each year. This program also creates a Farm and Nature Center in Winters, CA to serve as a professional development hub for local and regional environmental education programs, and a regional connection site for high schools, teachers, and significant watershed project opportunities. The Cultivating Watershed Stewardship Program leverages already-administered CALFED Bay-Delta ERP and Watershed Program funds to develop an education program in four regions that meets all six ERP Strategic Goals as well as specific regional restoration priorities. Through partners such as Audubon California, The Nature Conservancy, and San Joaquin County RCD, this program is local, applicable, and implements ecosystem restoration projects on private land (agricultural property) in each community.

Proposal

FARMS Leadership, Inc.

Cultivating Watershed Stewardship

Craig McNamara, FARMS Leadership, Inc.
Mary Kimball, FARMS Leadership, Inc.

A. Project Description

a) Statement of the Problem

The CALFED Bay-Delta Region (excluding Southern California) provides the majority of California's drinking and agricultural irrigation water. This region also produces the majority of the nation's food supply – agriculture remains California's largest industry – and is the home to a rapidly expanding and increasingly diverse population (ERP, Draft Stage 1 Implementation Plan, p. 3). Not surprisingly, the competing demands of sensitive biological systems, large-scale agricultural production, and human development of the Bay-Delta Region has created levels of controversy never seen before in California. Unfortunately, few of the region's citizens understand these problems, nor have the skills, motivation, or leadership abilities to work toward solutions.

As California begins the 21st century, more and more young people are growing up in urban areas, and are therefore denied direct experiences in nature. In the years ahead, the new urban electorate, educated in urban areas, will be called upon to help make difficult decisions about clean air, clean water, wildlife and open space. In California, making these decisions requires an understanding of agriculture, which uses more water resources than any other industry in the Bay-Delta system. It is up to educators to provide this understanding. While elections will have an enormous impact on California's environmental future, educators must do more that just inform voters on the issues. Increasingly, California's diverse communities must work together to create solutions to real world environmental and agricultural problems, particularly those of the Bay-Delta, participating democratically to make decisions and take responsible action. The critical problem remains: it is difficult to learn about nature and agriculture in the urban environment, and therefore few citizens are motivated to take action on environmental issues.

In recent years, very dedicated environmental educators and organizations have been providing engaging, standards-based, multi-disciplinary curriculum to California's schools and teachers. From Adopt-A-Watershed to Project WET, teachers in both urban and rural schools now have excellent, age-appropriate resources with which to design environmental lessons. What these teachers lack, however, are the resources to educate students about their own watersheds in the real world, especially as they pertain to agriculture and ecosystem restoration. Most schoolyards and neighborhoods lack the outdoor space and natural elements that invite exploration and discovery, as well as the real world applicability in the community that leads to student motivation and action. To compound this problem, California schools are struggling with severely limited funds for the field trips necessary to transport students off of the school campus and to community projects such as citizen water quality monitoring programs, riparian habitat restoration, or wildlife-friendly agricultural research demonstrations.

Meanwhile, literally thousands of such community projects not only exist, but are rapidly expanding with the increase in funding for ecosystem restoration and watershed-based programs (e.g. CALFED, 319h, Proposition 13, NFWF, USDA-NRCS), research in wildlife-friendly and sustainable agriculture (e.g. CALFED, EPA, UC SAREP, DPR), and farmland preservation (e.g. Packard, CALFED, The Trust for Public Land). These projects, being implemented by community and regional groups such as Resource Conservation Districts, farmers and ranchers, environmental organizations, and Land Trusts, seek community involvement. In fact, many past CALFED ERP and Watershed Program proposals have specifically stated their desire for community and school

group participation in program implementation. Yet very few of these organizations are effective at connecting and coordinating with school groups.

FARMS Leadership Inc. has realized this tremendous gap between the organizations with resources, real-world projects, and community programs, and the urban and rural teachers and students lacking this critical real-world, hands-on experience. In the past eight years, the FARMS Leadership Program, an experiential outdoor education program that introduces students to the principles of wildlife-friendly agriculture and natural resource sustainability, has grown from one site in Yolo and Sacramento Counties to nine sites statewide (including four in Southern California). So intense is the demand for FARMS that the only barrier to further expansion is funding.

In 2000, FARMS Leadership Inc. joined forces with Audubon California to add a new program to our environmental education portfolio called SLEWS (Student and Landowner Education and Watershed Stewardship). SLEWS takes high school students out of the classroom, connects them with a specific restoration project on a farm or ranch in Yolo County, and provides them with year-round activities both at the restoration site and in the classroom. SLEWS too, although less than a year old, is a model already being demanded around the state. We are proposing to expand these two programs in tandem throughout all four CALFED Bay-Delta Regions, under the "Cultivating Watershed Stewardship Program."

2. Justification

a. Conceptual Model

The Conceptual Model for the Cultivating Watershed Stewardship Program is grounded in a widely shared understanding of effective environmental education. One of the founding documents in the field of environmental education, the Belgrade Charter (UNESCO-UNEP, 1976) was adopted at a United Nations Conference and provides a widely accepted goal statement for environmental education:

"The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones."

The following is an explanation of the key elements of the model, which are referenced by number in *Figure 1*.

Systems of Ecosystem Health (1): The overriding ecological goal of our program is to improve ecosystem health, which is achieved through the effective functioning of three distinct systems, **Ecosystem Restoration, Wildlife-Friendly Agriculture, and Environmental Education.** These three systems have also been identified by CALFED as critical to improving ecosystem health in the Bay Delta. FARMS Leadership Inc. has successfully integrated these three systems in programs at the local sub-watershed level.

We and the systems we create impact the ecological integrity of our watersheds. The three systems shown in the conceptual model are critical to ecological health; wildlife-friendly agriculture often impacts the success of ecosystem restoration, environmental education can affect the success of ecosystem restoration, etc. Students must be challenged to recognize the ramifications of our interdependence – how their actions (and the actions of others) affect environmental quality. By understanding the three systems, students are better able to make sense of the large and complex goal of improving Ecosystem Health.

Student Empowerment in Watershed Stewardship (6): This is the overall education goal of our program. Our program emphasizes critical and creative thinking, decision making, communication, and collaborative learning, all of which are essential skills for active and meaningful learning, empowerment, and action, both in school and over a lifetime. The use of hands-on, real-world student projects, place-based learning on farms and ranches, and multi-disciplinary curriculum (CM 2, 3, 4, and 5) all develop these skills. By educating students within local watersheds, the resulting student empowerment and leadership is also based on local watersheds.

Hands-on student projects guided by professional mentors (2): Our program depends on the assistance of professional mentors to guide students during field activities, research and monitoring projects, and to provide a window to careers and professional opportunities. These hands-on projects also reinforce and develop critical thinking and decision making skills, so necessary for student leadership and environmental problem solving.

Multi-disciplinary curriculum (3): Disciplines from the natural sciences to the social sciences and humanities are connected through the context of the environment and environmental issues. Environmental education offers many opportunities for integration and works best when infused across the curriculum. Thus, our program uses various already-created environmental education curricula as critical pieces to produce effective environmental education. A good example is **Adopt-A-Watershed's** integrated, K-12 curriculum comprised of 17 (with several more to come) grade-level interdisciplinary curriculum units which adhere to the California State Science Standards.

Roots in the real world through local partners (4): Learners develop knowledge and skills through direct experience with their environment, environmental issues, and society. Investigation, analysis, and problem solving are essential activities and are most effective when relevant to the real world. Our program successfully collaborates with local organizational partners who link students and schools with real world projects and activities in ecosystem restoration and wildlife-friendly agriculture.

Place-based learning on farms and ranches (5): Learners forge connections with, explore, and understand their immediate surroundings, develop a sense of place and use the local community as a focus of study. This forms a base for moving out into larger systems, broader issues, and an expanded understanding of their role as leaders in environmental problem solving. In our program, farms and ranches within the student's communities host the field days, creating a connection not only to local environments but also to agriculture.

Hypotheses being tested

Figure 2, our adaptive management process, presents the hypothesis that is derived from our Conceptual Model (presented in *Figure 1*), goals and objectives, and the program activity (Task) with which they are associated. The hypothesis is as follows:

Hands-on, place-based, community-oriented education based on ecosystem restoration and wildlife-friendly farming will cultivate stewardship, increase knowledge, awareness, and skills, provide connections to the local environment, including the agricultural landscape, and empower youth to work individually and collectively towards environmental solutions

b) Adaptive Management

Figure 2 illustrates the adaptive management process that has been adopted for this program. It builds on work that began many years ago through the initial development of the FARMS Leadership Program in 1993, and through the more recent expansion of the program in other areas of the state. Defining the problem was the first critical step in our adaptive management process, and stems from our experience over the last eight years of environmental education programming. The decline in ecological health of watersheds throughout California clearly shows the general population's lack of understanding about these issues and, more importantly, the lack of experience in how to develop local solutions.

Through the implementation of the FARMS Leadership Program and the SLEWS Program, which were developed to help overcome these problems, our objectives have been defined, evaluated, assessed, and adapted. Existing literature (especially, "Closing the Achievement Gap") establishes that these types of programs undertaken elsewhere increased student awareness and action when the educational experiences were diverse, offering a mix of hands-on projects, cooperative learning, and experiences outside the classroom (Lieberman and Hoody, 1998). Indeed, we believe that enough evidence exists to implement these types of programs on a larger scale. This proposal will employ an adaptive management process by initiating systematic assessment and evaluation efforts with every education program site.

3. Approach

a. Location and/or Geographic Boundaries of the Project

Based on the importance of CALFED Bay-Delta Program's regional perspective, the Cultivating Watershed Stewardship Program will operate in four regions; Sacramento Valley, Delta, San Joaquin, and Bay. *Table 1* defines the location of the five specific sites within these regions, 1) Yolo/Solano/Sacramento, 2) Butte/Tehama/Glenn, 3) Stockton/Lodi, 4) Fresno, and 5) Sonoma, and shows the various partners that are involved at each site. The sites are all within one or more of the 14 CALFED ERP Ecological Management Zones ("Ecozones") and are within the CALFED ERP geographic scope outlined on the maps in Attachment B of the 2002 PSP. At each site, students will be involved in numerous field days and educational activities within specific ecozones (see *Table 1*), in particular, at each partner's CALFED Ecosystem Restoration Program or Watershed Program project location. CALFED grant numbers and program titles of partnership sites are also listed in *Table 1*.

b. Study Design

There are three tasks to be implemented in the study design. These tasks are based on the educational objectives, listed below. The tasks are as follows:

Task 1. Perform program management and evaluation,
Task 2. Implement FARMS and SLEWS Programs in CALFED Bay-Delta Regions (Sacramento Valley, Delta, San Joaquin, and Bay), and,
Task 3: Create a Farm and Nature Center.

Please see *Table 4* (Work Schedule) for more information on how each of these tasks will be carried out over the three-year grant duration. *Tables 1 and 2* show the partners that are collaborating to expand the FARMS and SLEWS Programs in each region.

Cultivating Watershed Stewardship Program Educational Objectives:

- To increase the number of students participating in "significant," real-world, hands-on field activities located on farms and ranches and focused on wildlife-friendly agriculture practices and ecosystem restoration;
- To enlist the assistance of professional mentors to provide leadership with hands-on student workshops and research projects;
- To provide opportunities for on-the-ground student research and monitoring projects, utilizing existing ecosystem restoration and wildlife-friendly farming projects within the community;
- To provide students with opportunities for career exploration in the agricultural and environmental sciences;
- To document the number of participating students, on a regional basis, who demonstrate the understanding of and need for ecosystem health, as a result of the program's educational methodology and use of standards-based curriculum; and,
- To create a Bay-Delta regional educational and training center for all participating teachers, students, and landowners, and other regional environmental education and restoration programs.

In order to accomplish these educational objectives, we propose an expanded environmental education program that builds on existing programming and partnerships developed by FARMS Leadership, Inc. over the last eight years. FARMS Leadership Inc. has two environmental education programs currently being implemented, the FARMS Leadership Program and the SLEWS Program. As previously discussed, this proposal is to package these two highly successful and innovative programs as the "Cultivating Watershed Stewardship Program" and implement them in tandem throughout the CALFED Bay Delta Program area. In regions where FARMS and SLEWS already exist (*see Table 2*), this proposal will expand existing programs, add additional partners, and therefore increase our ability to reach more schools and students. In CALFED Bay-Delta Program Regions where these programs do not exist, this proposal will implement new programs in collaboration with the partners already identified. **FARMS Leadership, Inc. will leverage funds already administered to CALFED Bay-Delta restoration and education projects in order to expand this education program throughout the four regions.**

It is necessary to provide a brief description of the FARMS and SLEWS programs; their missions and history, methodology and activities, and subjects covered.

The FARMS Leadership Program
Mission: To empower a diverse group of participants to make informed choices about their futures through experiential learning, exposure to educational and career choices and development of leadership and life skills – all centered on sustainable agriculture and the environment.

History: The FARMS Leadership Program "pilot program" began in 1993 in the Sacramento area (Winters). In 1997, FARMS was awarded initial "expansion funding" by the National Fish and Wildlife Foundation, and "satellites" of this first program were initiated. Since that time, eight additional FARMS sites have implemented their own programs: Orange, Ventura, Riverside, Sonoma, North Valley (Butte, Tehama, and Glenn), San Luis Obispo, Contra Costa, and San Diego. The addition of these sites has increased the breadth and scope of the FARMS program to a new level statewide.

Methodology and Activities: Each FARMS Leadership Program site is made up of 30 high school students (primarily sophomores and juniors) from five different high schools in each area. Also participating are at least two teachers from each school and which attend the field days and take back what they learn into their classrooms. Students and teachers meet approximately once per month as a group for field days. Field days are hands-on in nature and are taught by university professors and industry specialists so that each student learns through personal experience, becomes involved and has a connection to their community. On-farm field day workshop topics are centered on wildlife-friendly agricultural practices and natural resource conservation. Depending on the local area and community issues, field day topics are varied in order to expose and teach students about the following;

- The benefits of using cover crops to **reduce inputs of chemical fertilizers**, improve soil quality and water infiltration, and as habitat for wildlife and beneficial insects.
- Improving soils and **reducing soil erosion** from farming operations, and why erosion is detrimental to the environment (i.e. salmon fisheries, water quality, etc.).
- **Improvement of water quality** (i.e. proper waste management on dairies, proper use of riparian areas on ranches and dairies, reduction of chemical fertilizers and pesticides using Integrated Pest Management techniques, soil erosion reduction using vegetated filter strips, etc.)
- **The use of composting** to recycle waste, reduce use of chemical fertilizers, and increase the organic matter in soils.
- **Restoration of riparian areas** such as creeks, rivers, and sloughs; planting native vegetation in denuded areas, monitoring water quality, wildlife use, erosion, and vegetation.
- **Pest management practices** that are safer on the environment and reduce chemical inputs, i.e. biological control and cultural practices.
- Wildlife habitat improvements, such as **building and installing barn owl, wood duck, and bat boxes**, and nesting structures on ponds and rivers.
- **Invasion of exotic weed species and their negative impact on the environment**, removal methods of weed species, and replacement with native vegetation to improve wildlife habitat and restore genetic biodiversity.
- **Tours and activities at a post-secondary institution**; FARMS participants are exposed to a college or university (including community or junior colleges) so that they are able to see the variety of academic programs and majors in the agricultural and environmental sciences. It is also important that they are exposed to careers and mentors that will help them make decisions about their futures.

- **A research station or program, specifically linked to local agricultural crops or environmental issues**; students often don't understand the amount of research and scientific inquiry that agriculture and the environmental sciences is based on, and field trips to these kind of locations prepare students for their research projects (see below).
- **Tour of a "high-tech" agricultural or environmental business**, in order to expose students to the wide variety of careers that are available, and to teach students that agriculture is one of the most technologically advanced industries in the world.

Ropes Course: FARMS is based on an experiential approach to learning. The Ropes Course also utilizes experiential learning to allow the participants to explore team building and leadership concepts. The participants engage in physical exercises or games which model real-life circumstances, such as planning their FARMS research project, a job situation, or family.

Farm-Family Overnight Stay: This activity helps to meet the objective of creating an understanding of the farm-family way of life. After a group dinner, students (in groups of 2-3) are matched with a local farm family and go home with them to learn more about their way of life. The next day, students stay with their families until midday, touring the farm, perhaps doing some farm work, visiting markets, or any other activity that the farmer is doing that morning.

Research Project: Students will be introduced to a variety of research areas throughout the course of the first two-three field days, and then work with a topic-specialized mentor from the partner post-secondary institution, UC Cooperative Extension, or other local organization to learn about research procedures and conduct a project of their choice. Students will meet with the mentor several times over the course of the FARMS program year, and will present their research finding on the final day of the program. Research project subjects include water quality, waste management, recycling, cover crops, and petrochemicals.

The SLEWS Program: Student and Landowner Education and Watershed Stewardship
Mission: To provide students with hands-on, place-based, integrated learning opportunities in order to cultivate stewardship, a sense of community and connections to their watershed. By adopting sites as long-term class projects, students carry out ecosystem restoration activities on privately owned farms and ranches in their local watershed.

History: In 2000, with the support of the National Fish and Wildlife Foundation, Audubon California's Agricultural Restoration Program and the FARMS Leadership Inc. partnered to create the SLEWS Program. The SLEWS Program builds on previously forged relationships between local landowners (farmers and ranchers), environmental organizations, resource agencies, and educators, to create an innovative approach to both natural resource conservation and environmental education. The program uniquely combines community-based stewardship with private lands, blending economically viable agriculture with ecosystem restoration, benefiting landowners, students, teachers, and wildlife in the watershed.

Methodology and Activities: Site adoption is the cornerstone of the SLEWS approach to restoration and education. Classes from participating high schools in the area (usually 5-10) will adopt new and existing landowner sites in the local watershed, thereby committing themselves to performing the management duties at that site throughout the year. The SLEWS Project Manager will visit each of

the participating schools at the beginning of the school year to orient students and teachers to the goals of the project. The classes (a maximum of 30 students from each class) will then take multiple field trips to the site to perform the following tasks:

- **Seed Collection, September-October** - SLEWS students will visit a variety of local reference sites in order to collect seed and learn about the ecology of the systems they are working to restore. The resulting plants propagated will be used to supply future SLEWS project sites;
- **Upland planting and Bird Box Installation, November-February** - SLEWS students will plant native trees, shrubs and grasses, and install bird boxes, brush piles, and other wildlife habitat enhancement structures;
- **Irrigation and Weed Control, March-April** - SLEWS students will install and maintain drip-irrigation systems, and manage weeds;
- **Wetland Planting and Weed Control, April-May** - SLEWS students will plant native rushes and sedges in ponds, sloughs and wetlands, and continue to manage weeds;
- **Site Monitoring, May-June** - SLEWS students will conduct vegetation, wildlife and photo monitoring at their sites to measure the ecological effects of their efforts. This will include monitoring installed wildlife enhancement structures.
- **Community Celebration, May-June –** All schools in the program will come together for a final celebration to recognize their accomplishments, display any research or monitoring project information, display artwork, writing, or poetry that was created during the program year, and say "thanks" to their farmer or rancher host.

Watershed-scale monitoring of water quality and plant and animal community response to restoration activities: It is of critical importance that all restoration and conservation activities are carefully monitored, and that sufficient data is collected to evaluate their effectiveness. Small groups of students will work closely with local experts who will serve as mentors for the student research projects. These projects will investigate some of the following topics:

- wildlife use of restored riparian areas;
- water quality data: turbidity, pH, and nutrients;
- water quality data: toxicology;
- bio-assessment; and
- erosion inventory in rangelands.

The SLEWS program has developed a learning laboratory/classroom, equipped with a computer and data management and presentation software, to support student research projects.

Construction of wildlife enhancement structures for project sites: With the widespread decline of many avian species resulting from habitat degradation, conservation biologists are becoming increasingly aware to the potential for habitat restoration as a viable conservation strategy. The SLEWS Program will go a long way in helping to restore critical avian habitat, but in the meantime, we can hasten the process of conservation by providing nesting structures for such species as the common barn owl, the American Kestrel, and many species of migratory waterfowl, including the wood duck. The SLEWS Program will help meet the need for nesting structures throughout the watershed, as Agriculture Mechanics classes from at least two high schools involved in the program from each area will build the boxes throughout the year as school projects. SLEWS students will then install the structures at each project site.

Native Plant Propagation:
As more local private landowners and public land managers take up habitat restoration projects, there is an increasing demand for native plants collected from local sources. Currently, managers of restoration projects are forced to look *outside* their watershed for the majority of their native plant materials. Meanwhile, local students are missing out on a valuable opportunity to learn about, and participate in native plant propagation. Nurseries are living classrooms, ideal for teaching students about biology, botany and plant biology. They are also fertile ground for integrating subjects as diverse as art, math and ethnobotany, and appeal to students of all ages.

The SLEWS program will help support the establishment of a native plant nursery, or, in some cases, utilization of local nurseries. SLEWS students will take at least one fieldtrip to the nursery during the school year. In an effort to include even more students from *outside* the program, the SLEWS project manager will invite schools unable to adopt their own site to help with nursery activities.

Summer Internships: Although most of the restoration tasks will take place during the school year (September-June), some work will be required to maintain SLEWS project sites during the summer months. In order to meet this need, the SLEWS Program will develop a high school internship program consisting of three to five high school students who will work part time from July 1 until August 30. Students who have participated in the SLEWS program throughout the year will be given priority in hiring. The SLEWS summer internship program will have the additional benefit of providing valuable work experience and job training to young adults, teaching students that a career in the environmental area can be exciting *and* economically viable.

Outline of Program Tasks
See *Figure 3* for the illustration of staff organizational structure for Tasks 1-3.
See *Table 4* for the Work Schedule, which is outlined by Task.

Task 1 Program Management and Evaluation
Program Management and Evaluation includes all aspects of program oversight, such as coordination and management of regional education programs, inspection of work progress, overall evaluation of program success, fulfillment of contract reporting requirements, and invoicing associated with each task. Program Management and Evaluation includes general program expenditures associated with the program (excluding any service contracts), such as state staff salaries, general program equipment, and mileage associated with state staff travel to regional program sites.

Task 2 Implement FARMS and SLEWS Programs in CALFED Bay-Delta Regions

Subtask 2.1 Implement the programs in the Sacramento Valley Region
This includes continuing Sacramento and North FARMS Programs, expanding the Sacramento Valley SLEWS program, and implementing a new North Valley SLEWS Program.

Subtask 2.2 Implement the programs in the Delta Region
This includes implementing new FARMS and SLEWS Programs in the Stockon/Lodi area.

Subtask 2.3 Implement the programs in the San Joaquin Region
This includes implementing a new FARMS Program in Fresno, and investigating possible partnerships to implement a SLEWS Program in the Fresno area.

Subtask 2.4 Implement the FARMS and SLEWS Programs in the Bay Region
This includes continuing the Sonoma FARMS Program and investigating possible partnerships to implement a SLEWS Program in Southern Sonoma County.

The implementation of Task 2 will necessitate the hiring of regional coordinators to administer the programs (FARMS and SLEWS) in each region. They will work with partner organizations and community groups to create leadership teams. These leadership teams will provide assistance with program direction, such as assessment of local problems and needs and revisions of goals and objectives as necessary. These leadership teams will also provide assistance with program activities, communication, and coordination.

The regional coordinators will also be responsible for implementing all field days, including recruiting schools and teachers to participate, coordinating field days sites, subjects, and mentors, and collaborating with all program partners to put together field day activities. The coordinators will also be responsible for all program evaluation, implementing various evaluation methods, and presenting final evaluation results to each leadership team and the state management staff.

Task 3 Create a Farm and Nature Center

The Vision: Solano County landowner and founder of the FARMS Leadership Program, Craig McNamara, along with the Board of Directors for FARMS Leadership Inc., are working to develop a state-of-the-art Farm and Nature Center in the heart of one of California's richest and most diverse agricultural regions. The Farm and Nature Center would provide educational programs for children and adults, based on wildlife-friendly agriculture, and training programs for teachers, agricultural landowners, and land managers. Education and training programs would encompass a range of complimentary issues, including: wildlife and habitat in the agricultural landscape, habitat restoration on farms and ranches, sustainable agriculture, environmental education curriculum, California's agricultural heritage and multi-ethnic cultures, and participatory "land-to-the-table" programs that reinforce the reliance of all Californians on the farming and ranching industries. The site could offer field trips, hands-on restoration, gardening and farming projects, outdoor and indoor classrooms, training workshops, speaker series, residential programs, and outdoor festivals.

A Prime Location: The Bay-Delta Farm and Nature Center would be located in Solano County, on a 325-acre working farm owned by Craig and Julie McNamara, with 90 acres being designated to the Center itself. The property is located 3 miles east of the town of Winters, just off of Interstate I-505. The site is within a 15 minute drive from Davis and Vacaville, a 35 minute drive from Sacramento, and less than an hour's drive from the San Francisco Bay Area. The farm currently supports thriving English walnut orchards and highly productive row crops. The property is bordered on the north by a one-mile stretch of valley oak riparian forest along Putah Creek, a major stream that flows from Lake Beryessa to the Yolo Bypass.

Partnerships: The Bay-Delta Farm and Nature Center will be based on the principle of partnership. It is not meant to replace, but rather to bring together existing local, state, and national groups and resources. We envision a state-of-the-art facility with cutting edge programs kept vibrant and relevant by the contributions of our partners. Possible partners in this effort include: local and state environmental and conservation organizations and agencies, local school districts, Resource Conservation Districts, farming organizations such as Farm Bureaus and growers' trade groups, youth organizations including 4-H and FFA, job training programs, local Chambers of Commerce, and others.

Subtask 3.1 Conduct a Center feasibility study. FARMS Leadership, Inc. and Audubon California's staff are currently working from the Farm Center office, developing a native plant nursery, an indoor classroom, and beginning to use the 90-acre farm as an outdoor classroom, bringing students from over 10 schools to the Center for educational field days. We are already using the office and conference room for teacher trainings as well. However, our vision for the Farm and Nature Center is much bigger. A feasibility study needs to be conducted in the following areas to answer questions regarding the need and usefulness of such a center as described in the above vision:

- **Market Analysis** – The feasibility study should evaluate and describe our potential audience and describe the potential/current competition for such audiences.
- **Governance and Management Structure** - The feasibility study outline the possibilities for governance and management structure, given the market analysis and the potential community partners and organizational partnerships (local, regional, state, and national).
- **Programs, Services and Products** – The feasibility study should determine the Center's priorities for programming development, and for what interests, such as education, outreach, public service, leadership development, stewardship, and advocacy.
- **Facility Development and Operations –** The Center should be an active, recognizable resource in the community. The feasibility study should determine the necessary infrastructure to create the Center's vision (new facilities, staffing needs, etc.)
- **Business Plan and Schedule –** A three-five year business plan and schedule for the development of the center needs to be outlined, showing current and potential expenditures and revenue sources. This plan should describe strategies for generating revenue: e.g. special events, program fees, retail sales, annual giving campaigns. It should describe the capital campaign needs for facility development, and will present a timeline for program and facility development.

Subtask 3.2 Utilize current Center as a professional development hub for local and regional environmental education and restoration. As the base of operations for the Cultivating Watershed Stewardship Program, the Center will act as a clearinghouse of information and linkages for schools, teachers, community organizations, and ecosystem restoration projects, from Red Bluff to Fresno, Berkeley to Sacramento. This center will be a central hub for the four CALFED Bay-Delta Regions, where we are able to host teacher trainings, curriculum development activities, partner collaboration, and student and landowner field days. This is especially the case with one of our main partners, Adopt-A-Watershed. AAW has expressed their desire for this location to become a Regional Center for AAW leadership trainings, educational bus tours, networking, and information sharing sessions.

The Center will serve as a demonstration site for hands-on activities in ecosystem restoration, and we are working with the Lower Putah Creek Coordinating Committee to bring in funds to implement many conservation and restoration projects on the 90-acre farm. The implementation of these projects will serve as field day activities for FARMS and SLEWS students, and the actual projects will provide demonstration sites for farmers and ranchers, other landowners, and agency staff to learn how to implement wildlife-friendly restoration practices.

4. Feasibility

Based on our experience with the FARMS Leadership Program for the last eight years and our recent experience with implementing SLEWS in 2000-2001, we are confident that the proposed projects are feasible. Because of the strong relationships that we have built with our partner organizations (and their program landowners), and their resulting interest in participating in this program expansion, we are confident they will bring the promised resources, partners, and creativity to this education program. Due to our experience in expanding the FARMS Leadership Program throughout the state, we know the level of interest from schools, teachers, and administrators in every CALFED Bay-Delta Region. Our FARMS expansion has given us credibility and a high level of visibility not only with schools, but with agricultural, environmental, and natural resource organizations. This visibility has led the numerous organizations in *Table 1* to contact FARMS Leadership, Inc. regarding expansion and collaboration with their existing ecosystem restoration and education programs.

5. Performance Measures

See *Table 3* for a description of all performance measures used in this program. The table is broken down into objectives, outcomes, and measurement, and presents the entire evaluation plan for the Cultivating Watershed Stewardship Program. Based on Attachment G of the ERP 2002 PSP (p.87), education projects should be evaluated in terms of products, written evaluations before, during and after the project. All of these evaluation measures are included in *Table 3*.

6. Data Handling and Storage

Each site (including the Farm and Nature Center) will have its own coordinator, and the coordinator will act as the collector and the clearinghouse for all program data. Any monitoring or research data that is collected by the students will be shared with the respective partner organizations at each site, as well as additional community partners, schools, and interested local groups. Because we encourage students to share their experiences and knowledge gained with the community, we fully expect the students to give presentations, write reports and research summaries, and present their information in many community mediums – from school board meetings to landowner field days. The coordinator will house all student-collected data from year to year. Any program evaluation data will also be collected by the site coordinator, and used as necessary to write CALFED quarterly and final reports as required.

7. Expected Products/Outcomes

See *Table 3* for expected outcomes of the Cultivating Watershed Stewardship Program. The table also describes in more detail the types of methods used to determine these outcomes. Specific products/outcomes of this program can be broken down into five main areas;

1) Increased number of students and teachers directly served by FARMS and SLEWS programs, **per year**:
   - Sacramento Valley – approximately 1,000 students and 50 teachers
   - Delta – approximately 350 students and 20 teachers
   - San Joaquin – approximately 100 students and 10 teachers
   - Delta – approximately 150 students and 15 teachers
   - **TOTAL – 1,600 students (5,450 student visits) and 95 teachers (500 teacher visits)**

2) Increased number of field days implemented, per year:
   - Sacramento Valley – 120 field days
   - Delta – 45 field days
   - San Joaquin – 15 field days
   - Delta – 20 field days
   - **TOTAL – 200 field days**

3) Increased number of mentors assisting with regional education programs, and resulting research projects, per year:
   - Sacramento Valley – 250 mentor visits, and 30 resulting research projects
   - Delta – 100 mentor visits, and 15 resulting research projects
   - San Joaquin – 25 mentor visits, and 5 resulting research projects
   - Delta – 50 mentor visits, and 10 resulting research projects
   - **TOTAL – 425 mentor visits and 60 resulting student research projects**

4) Increased utilization of Bay-Delta Farm and Nature Center, field days/meetings/trainings per year:
   - Field days (Students) – 50
   - Teacher Training Days – 5
   - Bus Tours (teachers, landowners, other interested parties) - 2
   - Landowner/Agency workshops – 3
   - **TOTAL – 60**

5) Final Evaluation, compiled using the following types of evaluation methods in all four regions, and presented in report form each year;
   - Field day evaluations
   - Pre-and-post program surveys
   - Final program survey
   - Leadership Team meetings
   - Focus groups
   - Final totals of students, teachers, mentors, research projects, and farmers and ranchers participating
   - Changes in standardized test scores and achievement in high school science courses
   - Community education projects
   - Final field day research project presentations
   - In-class assessment of improved skills and behaviors
   - Post high school career tracking

6) Multi-Region Leadership Team Retreat – see *Table 3* for more details

7) Multi-Region Student Leadership Conference – see *Table 3* for more details

8. Work Schedule
See *Table 4* for the Annual Work Schedule.

There are three major tasks identified in the Work Schedule. Task 1, Program Management and Evaluation, is inseparable to the other two tasks. Task 2, Implementing the FARMS and SLEWS Program in CALFED Bay-Delta Regions, is broken down into four Subtasks. Each of these Subtasks could be funded separately (e.g. Subtask 2.1, Sacramento Valley Region), if necessary. Our most critical piece is Subtask 2.1, as it encompasses the most partners, sites, and programs. However, our proposal is for a Multi-Region Education Program, and funding only one or two regions would not have the same impact. Task 3, Creating a Farm and Nature Center, is also broken down into two Subtasks. Each of these could be funded separately as well. We see Task 3 as being very critical to Task 2, as the expansion of the FARMS and SLEWS Programs will necessitate a "regional center" to be the clearinghouse for programs, professional development workshops, teachers, curriculum, and partner networking. Therefore, although Task 3 is not "inseparable" to Task 2, the strength of the overall program relies on both Tasks being funded.

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

1. ERP, Science Program and CVPIA Priorities

The Cultivating Watershed Stewardship Program is applicable to the CALFED ERP Priorities (Draft Stage 1 Implementation Plan) in three main ways. First, this program meets Restoration Priority three (3) for Multi-Regional Bay-Delta Areas (ERP 2002 PSP, p. 18), which is to "implement environmental education actions throughout the geographic scope." Due to the program reach across the Sacramento Valley, San Joaquin, Bay, and Delta Regions, it certainly qualifies under this regional priority. MR-3 (PSP, p.21) specifically requests that programs "be developed affiliated with conservation, restoration, and monitoring efforts including curriculum development and hands-on educational activities for adults and K-12." MR-3 also states that education programs should emphasize community projects that actually perform research and restoration. The Cultivating Watershed Stewardship Program meets ALL of these criteria; it is hands-on, partner-driven, community-oriented, uses existing environmental educational curriculum, is based on the principles of wildlife-friendly agriculture, ecosystem restoration, and conservation, and finally – involves students and teachers with real-world restoration projects, many of which are currently funded by CALFED (see *Table 1*).

Secondly, while environmental education in and of itself is not a CALFED ERP Strategic Goal, it is listed as a priority on page 38 of the 2002 PSP. As stated, "increased public understanding of the resource issues that led to the development of the ecosystem restoration program and CALFED Bay-Delta Program will increase awareness and facilitate creative solutions to environmental problems. It also states that education programs should focus on activities that foster the goals of the ERP. The Cultivating Watershed Stewardship Program accomplishes this focus on **all six** ERP Strategic Goals by collaborating with partners at each educational site that are implementing their

own ERP and WP projects. In *Table 1*, we show the Strategic Goals that each of our partners is working to accomplish. As requested by the 2002 PSP, our education program works with existing educational resources and is coordinated with watershed stewardship groups and other local efforts.

Thirdly, each partner that is providing restoration and research projects and activity sites for FARMS and SLEWS field days (e.g. Audubon California, The Nature Conservancy, San Joaquin RCD, etc.) is also meeting regional restoration priorities, specific to their particular CALFED project. In this way, each education program site not only has applicability to the overall ERP Strategic Goals, but to specific regional restoration priorities that make the education local, applicable, and focused on real issues in the community.

2. Relationship to Other Ecosystem Restoration Projects

The Cultivating Watershed Stewardship Program is a highly collaborative program, and requires partnerships in order to succeed. *Table 1* shows, in detail, the locations, partners, and links to existing CALFED Ecosystem Restoration Programs (and Watershed Programs) already in existence. It is our primary goal to link current CALFED projects with schools and students who need experience in wildlife-friendly agriculture and ecosystem restoration projects.

3. Requests for Next-Phase Funding; and

4. Previous Recipients of CALFED Program or CVPIA funding

The Cultivating Watershed Stewardship Program has not been a recipient of any previous CALFED or CVPIA funding.

5. System-Wide Ecosystem Benefits

There are three distinct system-wide ecosystem benefits that are produced by the Cultivating Watershed Stewardship Program.

Regional Network of Environmental Education Partners and Projects

This program creates a network of partners in the field of environmental education, providing educational resources to schools that go above and beyond curriculum. There are numerous existing regional groups that provide a network of curriculum and other educational materials (such as CREEC), but there are no such networks that provide connections between schools and significant hands-on, place-based activities in local watersheds. This program, through the development of five distinct educational sites within the four Bay-Delta regions, and with the assistance of Regional Educational Coordinators, will create such a network to be utilized by current and future participants (fulfilled by Task 2).

Farm and Nature Center and Demonstration Site

The Cultivating Watershed Stewardship Program, through it's central Farm and Nature Center location in Winters, CA, will be a clearinghouse of information and linkages for schools, teachers, community organizations, and ecosystem restoration projects, from Red Bluff to Fresno, Berkeley to Sacramento. This center will be a central hub for the four CALFED Bay-Delta Regions, with offices, a conference room, field classrooms, and a native plant nursery. We will host teacher trainings, curriculum development activities, partner collaboration, student field days, and will utilize demonstration sites for hands-on activities in ecosystem restoration (fulfilled by Task 3).

Adopt-A-Watershed Regional Center
FARMS Leadership, Inc. maintains a strong partnership with Adopt-A-Watershed. All of FARMS Leadership, Inc.'s staff and many of our partners in Yolo County attended their Summer Leadership Institute in Bend, Oregon in July 2001. As a result of this partnership, we are working closely with their educational staff to provide AAW curriculum and professional development to all current SLEWS and FARMS teachers. It is our intent, that if this program is funded, that the Farm and Nature Center in Winters also becomes a Regional Center for AAW. They are based out of Hayfork, CA, which is very rural and not easily accessible for the majority of the CALFED Bay-Delta Regions. On the contrary, our Winters location is, while still rural, very easily accessible. It is infinitely more centralized, and AAW has expressed their desire for this location to become a Regional Center for AAW leadership trainings and professional development, educational bus tours, networking, and information sharing sessions (also fulfilled by Task 3).

6. Additional Information for Proposals Containing Land Acquisition
The proposed Cultivating Watershed Stewardship Program does not have a land acquisition component.

C. Qualifications
FARMS Leadership, Inc. staff will be responsible for program oversight, and carrying out most of the work under Tasks 1-3 of the annual work schedule. Their qualifications are described below. *Table 5* shows the participating staff from partner organizations that will be assisting with this education program.

Craig McNamara, FARMS Leadership, Inc. Mr. McNamara is President of FARMS Leadership, Inc. and will provide program oversight. He is also the owner of Sierra Orchards, a diversified farming operation that includes field, processing, and marketing operations, producing primarily walnuts and grape rootstock. Mr. McNamara received his Bachelor of Science degree from the University of California, Davis, in plant and soil science. He is also a graduate of the California Agricultural Leadership Program and a fellow of the American Leadership Forum. His professional activities include Chairman of the Agricultural Network, commissioner and past chair of the California Walnut Commission, advisor to The Trust for Public Land and Project Food, Land and People, and board member of the California Foundation for Agriculture in the Classroom from 1995-1998. In addition, he serves on the Diversity and Inclusion committees of both the Agricultural Education Foundation and the California Walnut Commission and Marketing Board.

Mary Kimball, FARMS Leadership, Inc. Ms. Kimball is the Executive Director of FARMS Leadership, Inc., serves as program manager for the Statewide FARMS Leadership Program and provides program oversight to SLEWS. She earned a BS degree in Agricultural Science and Management, with an emphasis in Plant Science, from the University of California at Davis, and a master's degree in Human and Community Resource Development from The Ohio State University. She has seven years of experience in project management, ranging from agricultural and environmental education to habitat restoration. She has been the State Coordinator for FARMS for three and a half years, and has implemented nine new sites in California. Ms. Kimball also created the SLEWS Program in partnership with Audubon, California.

Dan Leroy, FARMS Leadership, Inc. Mr. Leroy serves as Project Manager for the Yolo County SLEWS Program, and will serve as the SLEWS Manager for the expanded regional program. Mr. Leroy graduated from the University of Michigan with undergraduate degrees in both Ecology and English Literature. He received his MS in Ecology from the University of California, Davis, and has four years of experience working on community-based ecological restoration and education projects. As the SLEWS Project Manager, Mr. Leroy is responsible for project management and administration, including coordinating over 60 field days per year, working with more than 20 teachers and over 400 students. Prior to working for FARMS Leadership, Inc., Mr. Leroy spent one year coordinating the National Parks Service's high school stewardship program at the Presidio of San Francisco

Regional Educational Coordinators (4), FARMS Leadership, Inc. Four qualified educational coordinators will be hired prior to project initiation to perform the project management role for the Sacramento Valley, North Valley, Bay and Delta/San Joaquin program sites.

Farm Center Coordinator, FARMS Leadership, Inc. A qualified coordinator will be hired prior to project initiation to perform the Farm Center management role, with primary responsibilities to coordinate restoration projects, education and outreach for the Center.

D. Cost

1. Budget

The detailed budget and justification for each year of the Cultivating Watershed Stewardship Program is included in the proposal web forms.

2. Cost-Sharing

See *Table 6* for cost-sharing commitments that have already been made and which we expect to receive over the program's three-year duration.

E. Local Involvement

Tables 1, 2, 5, and 6 all detail the intensive local involvement in our multi-region environmental Education program. We have already taken significant actions towards securing commitments from many community groups and individuals, as well as regional and statewide groups, in order to create the program. This program is based on local involvement, and would not exist without such collaboration. We have on file at FARMS Leadership, Inc., letters of support from the following;

- Dawit Zeleke, Agricultural and Restoration Programs Manager, The Nature Conservancy, Sacramento River Project
- Dan Taylor, Executive Director, Audubon-California
- Judy Boshoven, Watershed Coordinator and Program Director, Willow Slough Rangeland Stewardship Program
- Paul Robins, Executive Director, Yolo County Resource Conservation District
- Cheryl Chipman, Program Coordinator, Yolo Basin Foundation
- Rich Marovich, Putah Creek Streamkeeper, Lower Putah Creek Coordinating Committee
- Lisa Huyck, Research Manager, IACT Program (Irrigated Agriculture Conservation Tillage)
- Marcia Gibbs, Executive Director, Ulatis Resource Conservation District

- Julie Schardt, Delta Curriculum Program Coordinator, San Joaquin County Office of Education
- Amy Augustine, Watershed Coordinator, San Joaquin County Resource Conservation District
- Kim Stokely, President and Education Director, Adopt-A-Watershed

F. Compliance with Standard Terms and Conditions

FARMS Leadership, Inc. will comply with the state and federal standard terms contained in Attachments D and E of the Proposal Solicitation Package.

G. Literature Cited

"Excellence in Environmental Education –Guidelines for Learning (K-12)," North American Association for Environmental Education, http://www.naaeee.org/npeee/learnerguidelines/intro.html (viewed September 2001).

Fullan, Michael. *Change Forces*. Probing the Depths of Educational Reform. The Falmer Press (London. 1993).

Lieberman, G.A., and Hoody, L.L. *Closing the Achievement Gap*. Using the Environment as an Integrating Context for Learning. Executive Summary, State Education and Environment Roundtable. 1998, pp. 1-10.

Lieberman, G.A., and Hoody, L.L. *Closing the Achievement Gap*. Using the Environment as an Integrating Context for Learning. Results of a Nationwide Study, State Education and Environment Roundtable. 1998, pp.45-52.

"National Project for Excellence in Environmental Education," North American Association for Environmental Education, http://www.naaee.org/npeee/ (viewed September 2001).

"Roots of Change," Agriculture, Ecology and Health in California. Funders Agriculture Work Group (FAWG), San Francisco, March 2001.

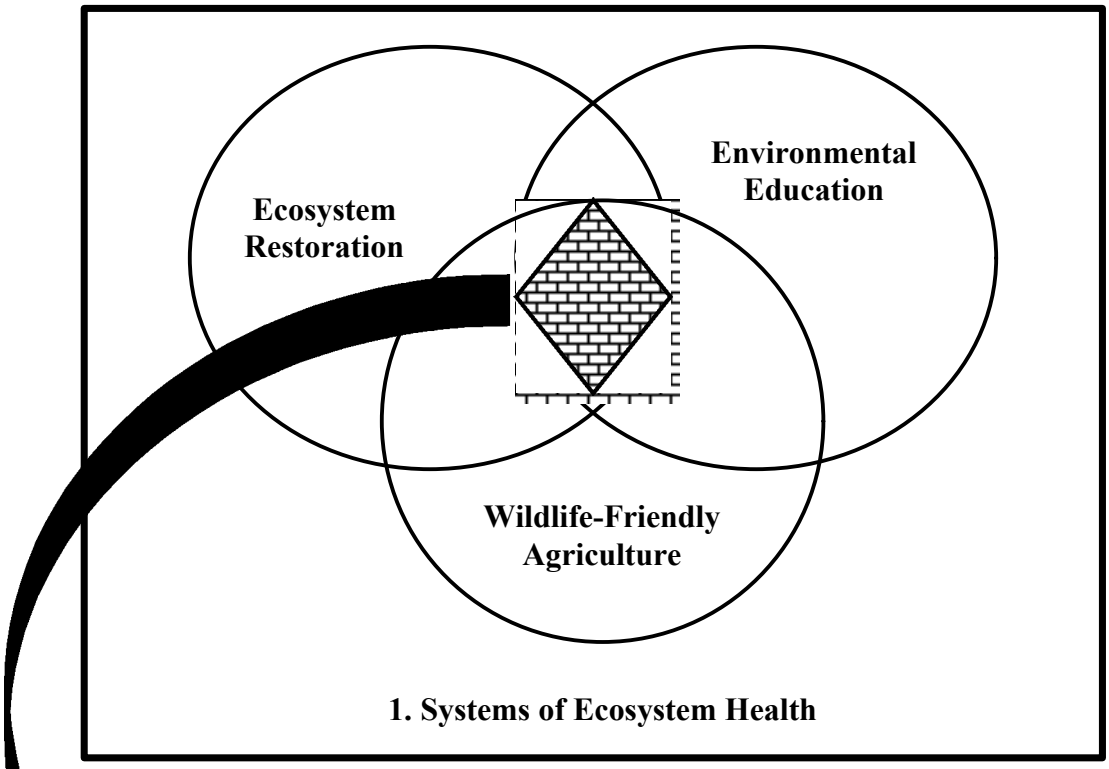
Appendix 1

Cultivating Watershed Stewardship Program
Figures and Tables

Figures:

Tables:

Figure 1. Cultivating Watershed Stewardship Program Conceptual Model



1. Systems of Ecosystem Health

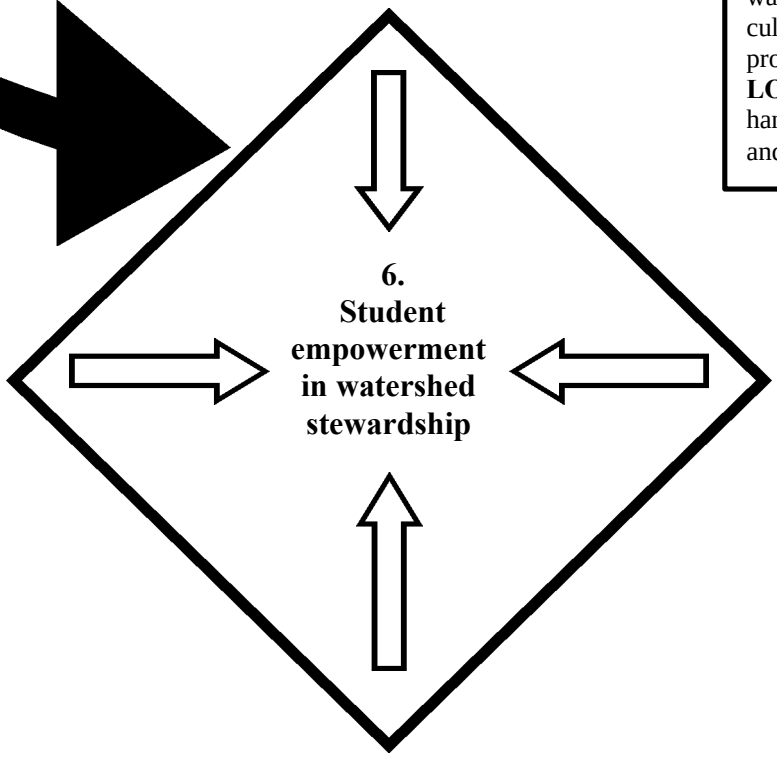
These three systems have been identified by CALFED as critical to improving ecosystem health in the Bay-Delta.

An effective education program exists at the **interface, or nexus,** of these three systems.

The Cultivating Watershed Stewardship Program is built around this nexus, and emphasizes the interdependence of these systems

2. Hands-on student projects guided by professional mentors

Student empowerment in watershed stewardship is cultivated when the education program is located **IN THE LOCAL ENVIRONMENT**, hands-on, multi-disciplinary, and has roots in the real world.



5. Place-based learning on farms & ranches

3. Multi-disciplinary curriculum (e.g. Adopt-A-Watershed)

4. Roots in the real world through local partners

Figure 2. Cultivating Watershed Stewardship Program Organization and Adaptive Management Process

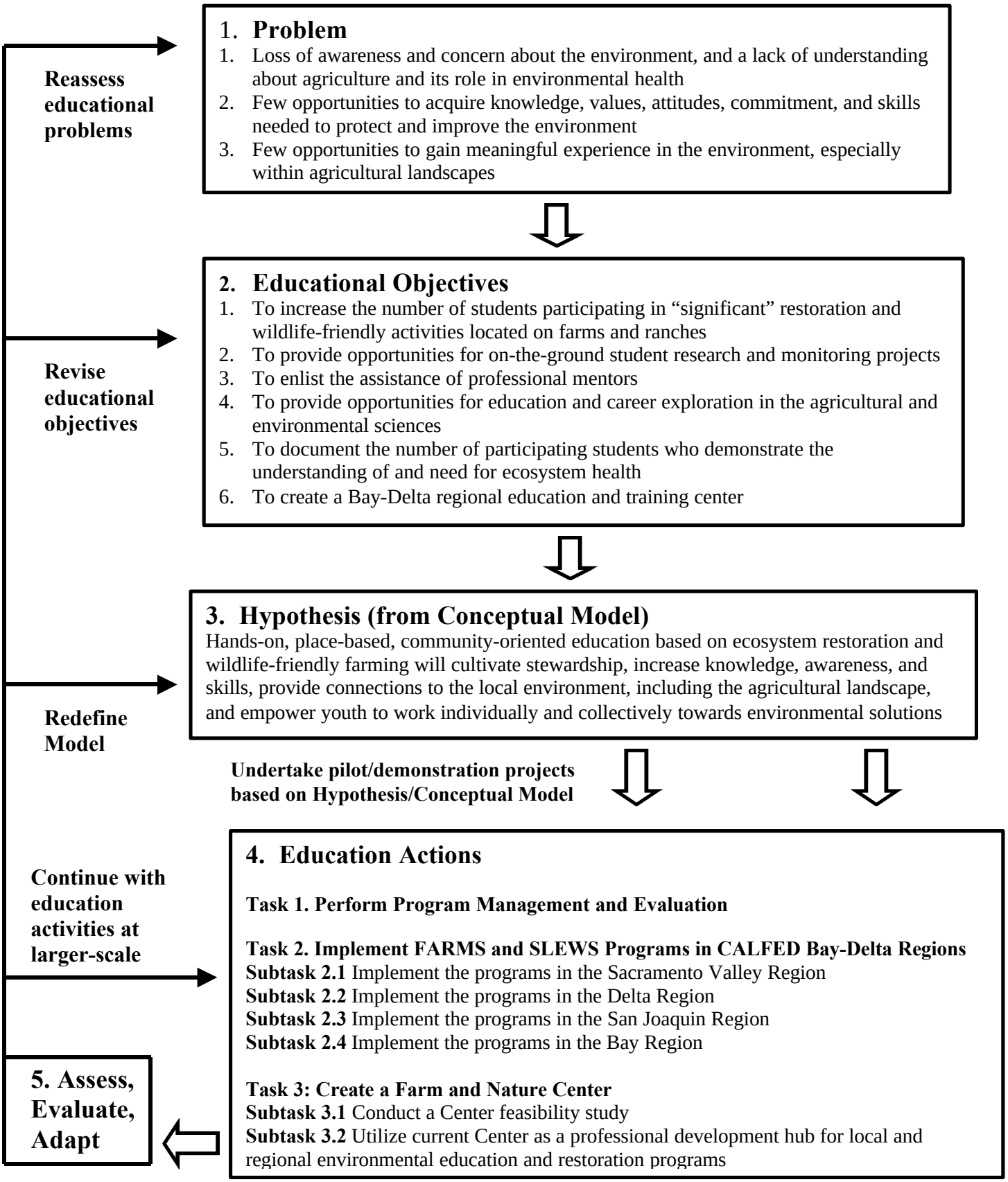


Figure 3. Cultivating Watershed Stewardship Staff Organizational Chart

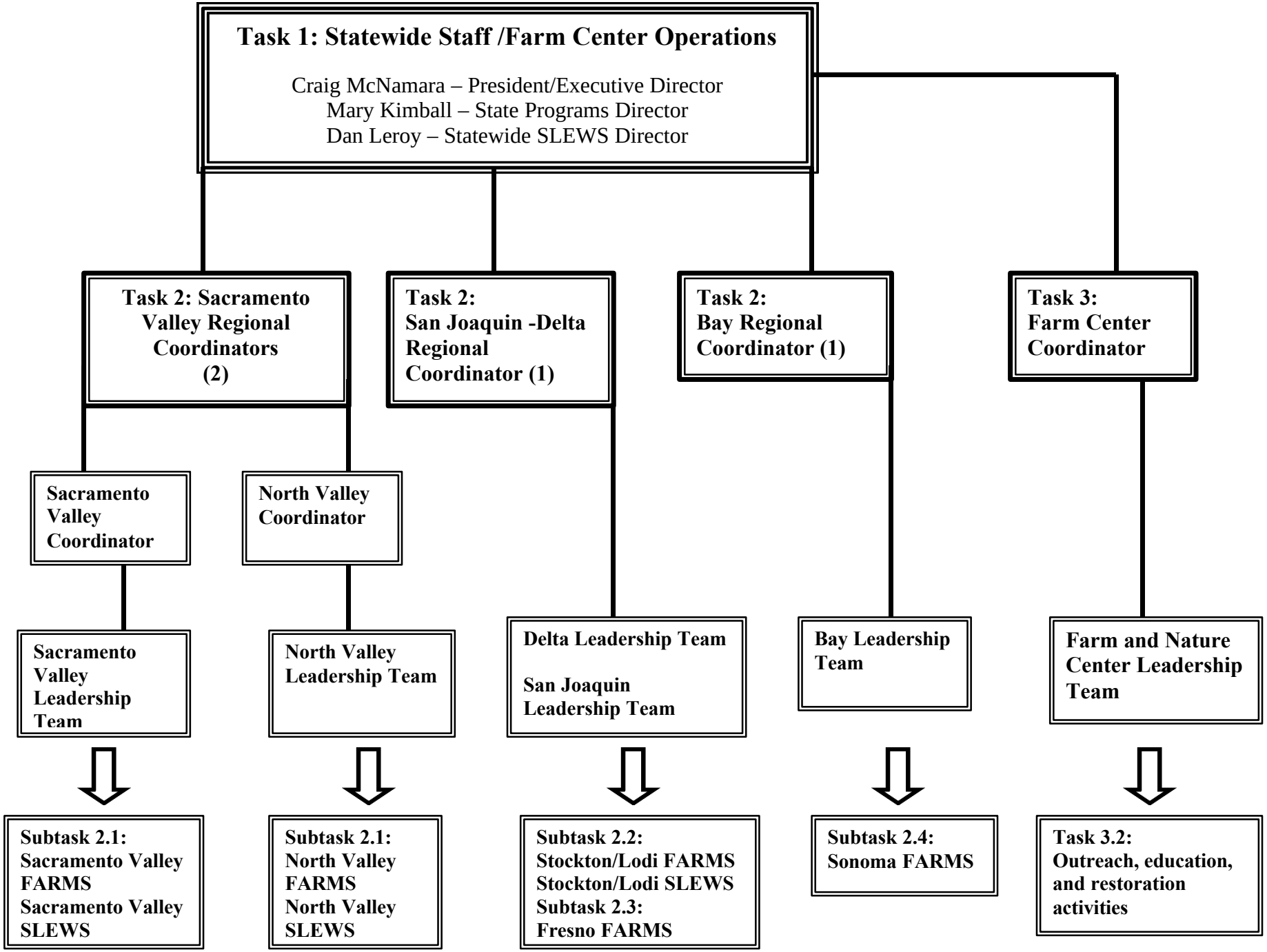


Table 1. Cultivating Watershed Stewardship Program Sites and Partners

Education Site/ CALFED Region	Partner	CALFED Program Title And Grant Number (If applicable)	Applicability to ERP Strategic Goals	Link to FARMS/SLEWS	Ecozone
Yolo/Solano/ Sacramento **Sacramento Valley Region**	Audubon California	Willow Slough Watershed Rangeland Stewardship Program (ERP 01-N31) and Union School Slough Watershed Improvement Program (ERP 98 –E13)	ERP Goals 1,3,4,5,6	Audubon will provide ecological restoration sites for FARMS and SLEWS field days on private farms and ranches throughout Willow Slough (including access to private property through their ongoing program); funds for all plant supplies and materials; technical expertise, and mentors for student research projects.	Yolo Basin 10.4 – Willow Slough
	Yolo Resource Conservation District	Sustaining Agriculture and Wildlife Beyond the Riparian Corridor (ERP 01-N25)	ERP Goals 1,2,3,4,5,6	Yolo RCD will provide assistance with program coordination (especially the Yolo RCD Education Coordinator), mentors, technical assistance, and additional educational resources.	Yolo Basin 10.4 – Willow Slough
	Same as above	Capay Valley Watershed Improvement Program (Watershed 2001–140)	Addresses all 6 Watershed Program Objectives	Through additional 319h funds, this program will provide restoration sites on Cache Creek (property access), implementation funds, technical expertise, and mentors. Any educational materials created will be used for SLEWS.	Yolo Basin 10.1 – Cache Creek
	Solano County Water Agency and Lower Putah Creek Coordinating Committee	Putah Creek Watershed Program (Watershed 01-0128) and… ***Submitting - ERP 2002***	Addresses all 6 WP Objectives ERP Goals 1,2,3,4,5,6	LCPPC will provide restoration sites on Putah Creek (property access) for student groups, implementation funds, and mentors. LCPPC is applying for ERP 2002 funds to implement restoration projects at the Farm Center (tailwater ponds, riparian buffers, oak woodland, hedgerows, etc.)	Yolo Basin 10.2 – Putah Creek
	Community Alliance with Family Farmers and Ulatis RCD	Educating Farmers and Landowners in Biological Resource Management (ERP 01-N42)	ERP Goals 4,6 and CALFED educational objectives	Will provide restoration sites in Solano County (Pleasants Creek, etc., access to private property), implementation funds, technical assistance, and mentors.	Yolo Basin 10.3 - Solano
	Yolo Basin Foundation	Discover the Flyway (ERP 01-N40)	ERP Goals 1,2,3,4,5,6, and ERP educational objectives	Will provide SLEWS and FARMS teacher professional development programs (especially their summer "Watershed Academy"), local teacher connections, curriculum and other educational resources (e.g. connections to CREEC Region 3).	Sacramento-San Joaquin Delta 1.1 – North Delta
	The University of California, Davis (College of Ag and Environmental Sciences) –Various groups	***Submitting –ERP 2002*** (IACT – Irrigated Agriculture Conservation Tillage program)	ERP Goals 1,2,4,6	UCD will host field days that are based on wildlife-friendly agriculture (UCSAREP, IACT, Student Farm, Dept. of Wildlife, Fisheries, and Conservation Biology), provides faculty/staff mentors and sites for student research projects (especially IACT, who is expanding their educational role to provide research opportunities for high school students)	Yolo Basin 10.2 – Putah Creek

Table 1. Continued

Education Site/ CALFED Region	Partner	CALFED Program Title And Grant Number (If applicable)	Applicability to ERP Strategic Goals	Link to FARMS/SLEWS	Ecozone
Butte/Glenn/ Tehama **Sacramento Valley Region**	The Nature Conservancy-Sacramento River Project	Sacramento River Restoration: Chico Land Sub-Reach (RM 185-200) ***Submitting – ERP 2002***	1,2,4,5,6	TNC will provide restoration sites for field days (access to both private and public land), implementation funds, technical assistance, mentors, and assist with administrative duties for FARMS.	Sacramento River 3.2 and 3.3
	Chico Unified School District	Watershed Education Project (ERP 01-N35)	Meets CALFED's ERP educational objectives	WEP will help provide links with schools and teachers that are already participating in watershed education activities, but need REAL restoration projects for student action; provide localized curriculum for FARMS and SLEWS.	Butte Basin 7.6 – Butte Creek
	Chico State University (College of Agriculture)	N/A	N/A	Chico State will host field days that are based on wildlife-friendly and sustainable agriculture, provide faculty/staff mentors for student research projects and technical presentations at FARMS and SLEWS field days.	Butte Basin 7.7 – Butte Sink
Stockton/Lodi **Delta Region**	San Joaquin County Office of Education	Delta Studies Program, San Joaquin County Schools (ERP 01-N38)	Goals 1,2,3,4,5,6, and Meets CALFED's ERP educational objectives	This education project, funded by CALFED last year, will provide up-to-date curriculum on the Delta that will be used in FARMS and SLEWS programs. Also, SJCOE will provide High Schools and teachers who are ready to participate in "real, significant" restoration projects in their local area.	
	San Joaquin County Resource Conservation District	Lower Mokelumne River Watershed Stewardship Program (ERP 99-N15) And… Murphy Creek Restoration Project (ERP 01 – number not yet assigned)	ERP Goals 1,2,3,4,5,6 ERP Goals 1,2,3,4	SJRCD will provide multiple restoration sites for the schools and teachers from San Joaquin County. They will also provide all restoration funds (e.g. plants, supplies), technical expertise, and links to farmers and ranchers in the Murphy Creek Watershed. Through their current CALFED projects, they will provide private land access for high school activities.	Eastside Delta Tributaries 11.2 – Mokelumne River
	San Joaquin County Audubon Chapter	N/A	N/A	SJ Audubon is very active on the Mokelumne River Team, and their members will provide technical assistance and ecosystem expertise at field days, especially bird monitoring surveys and student research projects.	Same as above

Table 1. Continued

Education Site/ CALFED Region	Partner	CALFED Program Title And Grant Number (If applicable)	Applicability to ERP Strategic Goals	Link to FARMS/SLEWS	Ecozone
Fresno **San Joaquin Region**	Fresno State University -College of Ag Sciences and Technology	N/A	N/A	CSU Fresno will be a host for FARMS field days, with curriculum focused on wildlife friendly farming and sustainable agriculture. They will provide faculty and staff for presentations and mentors for student research projects.	San Joaquin River 12.4- Gravelly Ford to Friant Dam
	Central Valley Agriculture Literacy Project	N/A	N/A	CVALA will provide localized agricultural curriculum for the FARMS program, and will connect interested teachers and schools to the FARMS program.	N/A
Sonoma **Bay Region**	Southern Sonoma Resource Conservation District	Sonoma Creek Watershed Conservancy 2001-2003 (ERP 01-H203)	ERP Goals 1,2,3,4,5,6	S. Sonoma RCD will provide restoration sites, access to private land, and connections to farmers and ranchers in the region for FARMS field days. The RCD has existing educational programs along the Petaluma River, which will provide curriculum and sites for FARMS field days.	Suisun Marsh & N. SF Bay 2.3 and 2.4
	Sotoyome Resource Conservation District	N/A	N/A	Sotoyome RCD, whose area is out of the CALFED Bay Region, will provide technical assistance and presenters at field days in the Southern portion of Sonoma County. Their expertise in ecological restoration is valuable to FARMS.	N/A
	Santa Rosa Junior College	N/A	N/A	SRJC will be a host for numerous FARMS field days based on wildlife-friendly farming and sustainable agriculture (e.g. sustainable wine grape production practices). SRJC also will provide many faculty and staff mentors for off-campus FARMS field days and student research projects.	N/A
Multi-Region **(Partners listed provide links for all sites)**	Adopt-A-Watershed	Adopt-A-Watershed Leadership Institute (ERP 01-N39) and… ***Submitting - ERP 2002***	ERP Goals 1,2,3,4,5,6, and meets Educational Objectives	AAW will provide environmental education curriculum and supporting professional development to all FARMS/SLEWS teachers. AAW will also provide links with other education programs region-wide who want to do "significant" work in watersheds, using SLEWS and FARMS as models.	Multiple
	Cooperative Extension, University of California	N/A	N/A	UCCE Advisors provide technical expertise to assist with program field days and act as mentors for student research projects (students are often able to work in tandem with a UCCE Advisor on "real world" research.	Multiple
	Natural Resources Conservation Service (NRCS)	N/A	N/A	NRCS soil scientists and range conservationists provide technical expertise at FARMS and SLEWS field days and act as mentors for student research projects. NRCS helps provide connections with farmers and ranchers who are doing ecosystem restoration and wildlife-friendly agriculture.	Multiple

Table 2. FARMS Leadership Program and SLEWS Program Existing Sites and Partners

FARMS/SLEWS Site	Years in Existence	Existing Partners	High Schools Involved
Sacramento Valley FARMS Program (Yolo, Sacramento, and Solano Counties)	Beginning 9th year	Yolo County Resource Conservation District, Sierra Orchards, University of California, Davis, College of Agricultural and Environmental Sciences, UC Sustainable Agricultural Research and Education Program, Sustainable Farming Systems Project, Community Alliance with Family Farmers	Davis, Delta (Clarksburg), Armijo (Fairfield), Luther Burbank (Sacramento), and Grant (Sacramento)
Sacramento Valley SLEWS Program (Yolo, Sacramento, and Contra Costa Counties)	Beginning 2nd year	Same as above, plus Natural Resources Conservation Service (NRCS), Audubon California, California Dept. of Fish and Game, UC Cooperative Extension, Packard Foundation, National Fish and Wildlife Foundation, US Fish and Wildlife Service	Davis, Woodland, Delta, Florin (Sacramento), Esparto, Winters, Sacramento, Davis School for Independent Study, and Berkeley
North Valley FARMS Leadership Program (Butte, Tehama, and Glenn)	Beginning 2nd year	The Nature Conservancy, UC Cooperative Extension, California State University, Chico, Butte County Office of Water and Natural Resources, Larrabee Farms, Lundberg Family Farms, Butte County Farm Bureau, Natural Resources Conservation Service	Las Plumas (Oroville), Chico, Corning, Orland, and Princeton
Sonoma FARMS Leadership Program (Sonoma and Marin)	Beginning 4th year	Southern Sonoma Resource Conservation District, Sotoyome RCD, NRCS, Santa Rosa Junior College and Shone Farm, UC Cooperative Extension, Reese Family Farms	Sonoma, El Molino, Petaluma, Tomales, and Windsor Oaks.
Orange FARMS Leadership Program (Orange only)	Beginning 4th year	Orange County Farm Bureau, Cal Poly Pomona, Orange County Produce, South Coast Resource Conservation and Development Area, Natural Resources Conservation Service	Fullerton, La Habra, Westminster, Mission Viejo, and Capistrano Valley
Riverside FARMS (Riverside and San Bernadino) Leadership Program	Beginning 3rd year	South Coast Resource Conservation and Development Area, Natural Resources Conservation Service, UC Cooperative Extension, Cal Poly Pomona	West Valley (Hemet), Norco, Indio, Bloomington, and Hemet
Ventura FARMS (with The Growing Academy) Leadership Program	Beginning 2nd year	UC Cooperative Extension, Hansen Trust, Faulkner Farm, Natural Resources Conservation Service, Somis RCD, UC Santa Barbara	30 students from approximately 10 different schools in Ventura County
San Diego (Carlsbad) FARMS Leadership Program	Beginning 1st year	Coastal Commission, South Coast RC&D, NRCS, The Flower Fields, Batiquitos Lagoon Habitat Restoration Project, Mira Costa College, San Diego County Farm Bureau	Fallbrook, Carlsbad, Oceanside, Vista, and San Marcos
San Luis Obispo FARMS Leadership Program	Beginning 1st year	San Luis Obispo Farm Bureau, Salinas-Las Tablas RCD, Cal Poly San Luis Obispo, College of Agriculture, Sustainable Agriculture Resource Center, Growing Grounds Farm, The Agricultural Education Committee, MESA Ag Initiative, UC Cooperative Extension, NRCS, Talley Vineyards, Coastal San Luis RCD	TBA

Table 3. Cultivating Watershed Stewardship Program; Objectives, Outcomes, and Measurement

Objective	Outcomes (Based on Hypothesis)	Measurement (Performance Measures)
1. To increase the number of students participating in "significant," real-world, hands-on field activities located on farms and ranches and focused on wildlife-friendly agriculture practices and ecosystem restoration	***Increased number of students that have:*** 1.1 An increased awareness of and concern about the environment and its associated problems 1.2 A more comprehensive understanding of the world 1.3 Improved attitudes about learning science; engagement, enthusiasm, and interest 1.4 Developed a stewardship ethic 1.5 Developed and utilized skills needed in ecosystem restoration and wildlife-friendly agriculture 1.6 Developed of a sense of place and a connection to the local environment 1.7 An increased knowledge and understanding of scientific concepts, processes, and principles 1.8 Agreater pride and sense of ownership in their accomplishments	***Regional Coordinators will facilitate:*** ➢ **Tracking total numbers of students and teachers** who participate in the program. ➢ **Tracking total number of field days** for each region and then for the entire multi-regional area. ➢ **Tracking total number of farmers and ranchers** who participate in the program by hosting field days. ➢ **Field day questionnaires** to assess effectiveness will be used to make small changes from field day to field day, as well as determine whether or not learning goals were achieved. ➢ **Pre-and-post program surveys** to assess changes in behavior and attitudes of students and teachers toward agriculture, the environment, and ecosystem restoration. ➢ **End-of-year questionnaires** evaluating changes in knowledge, skills, motivations, and interest in the environment due to participation in field days and evaluating the change in the connection to local environment. ➢ **Final focus groups** using a random sample of student participants, to delve deeper into program effectiveness.
2. To enlist the assistance of professional mentors to provide leadership with hands-on student workshops and research projects	***Increased number of students that have:*** 2.1 Awareness about community agricultural and environmental issues 2.2 Exposure to community role models 2.3 Been empowered to take action in their own communities 2.4 Developed advanced thinking and problem-solving skills, and strategic thinking 2.5 Deeper understanding and exposure to careers in the agricultural and environmental sciences	***Regional Coordinators will facilitate:*** ➢ **Tracking total number of mentors** who assist students at field days and with projects, by region. ➢ **Student surveys** to determine level of awareness of local agricultural and environmental issues. ➢ **Leadership Team meetings** to assess the mentors role in the program and which activities and field days best accomplished program goals. ➢ **Ongoing evaluation** to determine if students are taking action and/or providing leadership in their own communities regarding environmental health. ➢ **In conjunction with teachers**, assessment of increase in thinking and problem-solving skills using traditional evaluation methods (student projects, reports, teamwork in class, etc.)

Table 3. Continued

Objective	Outcomes (Based on Hypothesis)	Measurement (Performance Measures)
3. To provide opportunities for on-the-ground student research and monitoring projects, utilizing existing ecosystem restoration and wildlife-friendly farming projects within the community	***Increased number of students that have:*** 3.1 Developed skills, attitudes, motivations, and commitment to work towards environmental solutions 3.2 A greater proficiency in applying scientific skills to real-world situations 3.3 A deeper and more personal understanding of the significance of science to daily lives 3.4 Developed team-building and communication skills needed for collective-problem solving 3.5 An increased ability to think creatively	***Regional Coordinators will facilitate:*** ➢ **Tracking of total number of research projects** completed by students, by region. ➢ **Same evaluation methods as above**, utilizing end-of-year survey to assess increase in science skills, team building and communication skills, and creative thinking. ➢ FARMS and SLEWS final field days, where students **present research projects** to the larger group, to assess student application of skills learned over the program year. ➢ **Student "community education" projects**, which could range from presentations to local school boards to assistance with garden projects at neighboring elementary schools. **These projects will be tracked and documented** for the regional evaluation project as well as for site evaluation.
4. To provide opportunities for career exploration in the agricultural and environmental sciences	***Increased number of students that have:*** 4.1 Increased enthusiasm and interest in agricultural and environmental science careers 4.2 Real-world experience and problem-solving skills going into science professions	***Regional Coordinators will facilitate:*** ➢ **Student tracking through high school** and post high school (if possible) in order to assess whether the educational program made an impact on educational or career choices.
5. To document the number of participating students, on a regional basis, who demonstrate the understanding of and need for ecosystem health, as a result of the program's educational methodology and use of standards-based curriculum	5.1 Regional analysis of whether education centered on the connections between science, community, and natural surroundings increases student achievement 5.2 Creation of a data map that can be used by the general education public; teachers, administrators, school boards, etc., to "sell" the importance and need for these types of education programs in their own communities	➢ All measurements described above will be **compiled into a report by each regional coordinator, and presented at a multi-region leadership team retreat**, held in the summer following each program year. ➢ Five (5) students from each program site (25 total) will be selected to participate in a **multi-region student leadership conference**. This conference will create a document that outlines the program's effectiveness and helps the statewide and regional leadership teams make program changes.
6. To create a Bay-Delta regional educational and training center for all participating teachers and other regional environmental education programs.	6.1 A central location within the Bay-Delta Region to hold hands-on, place based training and education activities, encouraging participating from all regions. 6.2 Demonstration site for wildlife-friendly agriculture, which can be utilized by farmers, landowners, agency staff, and the general public 6.3 An education center that allows for activities such as those outlined in objectives 1-4 (with the same outcomes)	➢ **Tracking of total number of field days, professional development programs for teachers, landowner and agency meetings**, etc. that are held each year at the Center. ➢ Partner organizations will use their own evaluation materials to **measure the effectiveness of landowner trainings, professional development programs, and bus tours.** ➢ **Adopt-A-Watershed will be assisting FARMS Leadership, Inc. in evaluating the use of the Center**, as well as with regional education activities, as their plan is also to hire regional networking coordinators.

Table 4. Cultivating Watershed Stewardship Annual Work Schedule

TASK 1. PERFORM PROGRAM MANAGEMENT AND EVALUATION

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Hire (first year) and manage state program staff ➢ Prepare and submit monthly invoices and quarterly reports to CALFED (or Contracting Agency) ➢ Conduct quarterly multi-region coordination and information dissemination meetings between State Staff and Regional Coordinating Teams ➢ Hold end-of-year Multi-Regional Leadership Team Retreat, location TBA ➢ Hold end-of-year Multi-Regional Student Leadership Conference, in conjunction with retreat		

TASK 2. IMPLEMENT FARMS AND SLEWS PROGRAMS IN CALFED BAY-DELTA REGIONS

SUBTASK 2.1 IMPLEMENT PROGRAMS IN THE SACRAMENTO VALLEY REGION

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Hire two Sacramento Valley Regional Coordinators; one to run the North Valley FARMS and SLEWS sites and one to run the expanded Sacramento Valley FARMS and SLEWS sites (*See Figure 3*)	➢ Continue to coordinate with program partners to provide technical, professional development, and cost-share support	➢ Continue to coordinate with program partners to provide support for both programs
➢ Establish two Regional Leadership Teams (North Valley and Sacramento) to set up regional program networking and evaluation, hold monthly meetings	➢ Continue Regional Leadership Team meetings as in Year One	➢ Continue Regional Leadership Team meetings
➢ Continue implementing the Sacramento and North Valley FARMS Programs with current partners, including lead farmers	➢ Continue implementing FARMS in both areas, replacing schools, farm and ranch hosts, mentors, if necessary	➢ Continue implementing FARMS, replacing schools, farm and ranch hosts, mentors, if necessary
➢ Implement the 1st year expansion of the Sacramento Valley SLEWS program by working with 5 new farm/ranch restoration sites, and 5-8 new schools (13-16 schools)	➢ Implement 2nd year expansion of Sac Valley SLEWS, working with an additional 5 farm/ranch sites and 5-8 new schools (18-21 schools)	➢ Final, 3rd year expansion of Sac Valley SLEWS Program, so total number of restoration sites and schools participating is 20-30
➢ Begin planning for the Year 2 start of the North Valley SLEWS Program, working with partners to recruit schools, set restoration field day activities, and collect curriculum	➢ Implement the new North Valley SLEWS Program in coordination with The Nature Conservancy, working with 3-5 schools and restoration sites	➢ 2nd year expansion of the North Valley SLEWS Program, so total number of restoration sites and schools participating is 6-8

SUBTASK 2.1 Continued

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Implement ongoing and final program evaluation, coordinating with Adopt-A-Watershed's Regional Coordinator	➢ Continue ongoing and final program evaluation	➢ Finalize 3rd year evaluation results and tabulate data with AAW's regional coordinator to complete the regional analysis and data map
➢ Begin assessment of additional sites and partners in the Sacramento Valley Region, for program dissemination in future years	➢ Continue assessment of additional sites and partners in the Sacramento Valley Region, for program dissemination in future years	➢ Begin partnership activities in collaboration with program sites in the Sacramento Valley Region identified in Years 1and 2
➢ Sacramento Valley Regional teams to attend end-of-year Multi-Regional Leadership Team Retreat, location TBA	➢ Attend 2nd year retreat, develop long-term funding plan	➢ Attend 3rd year retreat
➢ Provide students for end-of-year Multi-Regional Student Leadership Conference, with retreat	➢ Provide students for Leadership Conference	➢ Provide students for Leadership Conference
➢ Begin to develop long-term funding for the Cultivating Watershed Stewardship Program in the Sacramento Valley Region	➢ Continue to develop long-term funding for the Sacramento Valley Region	➢ Begin implementing funding plan prepared at 2nd Year Multi-Regional Leadership Team Retreat

SUBTASK 2.2 IMPLEMENT PROGRAMS IN THE DELTA REGION

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Hire a San Joaquin -Delta Regional Coordinator to run the FARMS and SLEWS Programs in Stockton/Lodi and the FARMS Program in Fresno *(see Figure 3*)	➢ Continue to coordinate with program partners to provide technical, professional development, and cost-share support	➢ Continue program coordination with partners
➢ Establish a Delta Regional Leadership Team to set up regional program networking and evaluation, hold monthly meetings	➢ Continue Delta Regional Leadership Team meetings as in Year One	➢ Continue Regional Leadership Team meetings
➢ Implement a new Delta FARMS Leadership Program, in cooperation with the San Joaquin County Office of Education – activities include; 1) recruit 5 schools, 2) recruit a lead farmer to host 3 field days, 3) work with partner college or university to recruit mentors and host field days, and, 4) find 2-3 other farm sites for field day activities	➢ Implement 2nd year of Delta FARMS Program, replacing schools if necessary. Continue partnership efforts with lead farmer, college or university mentors, and other farms and ranches to host field days	➢ Implement 3rd year of Delta FARMS, replacing schools and adding new farm and ranch hosts if necessary; evaluate the lead farmer and if they want to continue with hosting the majority of farm field days

SUBTASK 2.2 Continued

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Begin partner discussions and planning with San Joaquin County RCD, recruit schools and teachers, and set up Delta SLEWS Program to be implemented in Year 2	➢ Implement the new Delta SLEWS Program in coordination with the San Joaquin County Resource Conservation District, working with 3-5 schools and restoration sites	➢ Implement 2nd year Delta SLEWS Program, so that total number of restoration sites and schools participating is 5-8
➢ Implement ongoing and final program evaluation, coordinating with Adopt-A-Watershed's Regional Coordinator	➢ Continue ongoing and final program evaluation	➢ Finalize 3rd year evaluation results and tabulate data with AAW's regional coordinator to complete the regional analysis and data map
➢ Delta Region team to attend end-of-year Multi-Regional Leadership Team Retreat, location TBA	➢ Attend 2nd year Multi-Regional Leadership Team Retreat and Student Leadership Conference	➢ Attend 3rd year Multi-Regional Leadership Team Retreat and Student Leadership Conference
➢ Provide students for end-of-year Multi-Regional Student Leadership Conference, in conjunction with retreat	➢ Provide students for Leadership Conference	➢ Provide students for Leadership Conference
➢ Begin to develop long-term funding for the Cultivating Watershed Stewardship Program in the Delta Region	➢ Continue to develop long-term funding for the Delta Region	➢ Begin implementing funding plan prepared at 2nd Year Multi-Regional Leadership Team Retreat
➢ Begin assessment of additional sites and partners in the Delta Region, for additional program dissemination in future years	➢ Continue assessment of additional sites and partners in the Delta Region	➢ Begin partnership activities in collaboration with additional program sites in the Delta Region identified in Year 2

SUBTASK 2.3 IMPLEMENT PROGRAMS IN THE SAN JOAQUIN REGION

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Hire a San Joaquin -Delta Regional Coordinator to run the FARMS and SLEWS sites in Stockton/Lodi and the FARMS Program in Fresno (*see Figure 3*)	➢ Continue to coordinate with program partners to provide technical, professional development, and cost-share support	➢ Continue program coordination with partners
➢ Establish a San Joaquin Regional Leadership Team to set up regional program networking and evaluation, hold monthly meetings	➢ Continue San Joaquin Regional Leadership Team meetings as in Year One	➢ Continue Regional Leadership Team meetings
➢ Begin developing additional partners for implementation of FARMS in Year 2	➢ Implement 1st year of San Joaquin-Fresno FARMS Program	➢ Implement 2nd year of San Joaquin-Fresno FARMS, replacing schools if necessary
➢ San Joaquin Region team to attend end-of-year Multi-Regional Leadership Team Retreat, location TBA	➢ Attend 2nd year Multi-Regional Leadership Team Retreat and Student Leadership Conference	➢ Attend 3rd year Multi-Regional Leadership Team Retreat and Student Leadership Conference

SUBTASK 2.3 Continued

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
	➢ Implement ongoing and final program evaluation, coordinating with Adopt-A-Watershed's Regional Coordinator	➢ Finalize 2nd year evaluation results and tabulate data with AAW's regional coordinator to complete the regional analysis and data map
	➢ Begin assessment of additional sites and partners in the San Joaquin Region, for the addition of a SLEWS Program in future years	➢ Begin SLEWS partnership activities in collaboration with program sites in the San Joaquin Region identified in Year 2
	➢ Begin to develop long-term funding for the Cultivating Watershed Stewardship Program in the San Joaquin Region	➢ Continue to develop long-term funding for the San Joaquin Region, and begin implementing funding plan prepared at 2nd Year Multi-Regional Leadership Team Retreat

SUBTASK 2.4 IMPLEMENT PROGRAMS IN THE BAY REGION

➢ Hire a Bay Region Coordinator to run the FARMS Program in Sonoma (*see Figure 3*)	➢ Continue to coordinate with program partners to provide technical, professional development, and cost-share support	➢ Continue program coordination with partners
➢ Establish a Bay Regional Leadership Team to set up regional program networking and evaluation, hold monthly meetings	➢ Continue Bay Regional Leadership Team meetings as in Year One	➢ Continue Regional Leadership Team meetings
➢ Continue implementing the Sonoma FARMS Programs with current partners and schools	➢ Continue implementing Sonoma FARMS, replacing schools, farms, etc. if necessary	➢ Continue implementing Sonoma FARMS, replacing schools, farms, etc. if necessary
➢ Implement ongoing and final program evaluation, coordinating with Adopt-A-Watershed's Regional Coordinator	➢ Continue ongoing and final program evaluation	➢ Finalize 3rd year evaluation results and tabulate data with AAW's coordinator to complete the regional analysis and data map
➢ Bay Region team to attend end-of-year Multi-Regional Leadership Team Retreat, location TBA	➢ Attend 2nd year Leadership Team Retreat and student leadership conference	➢ Attend 3rd year Leadership Team Retreat and Student Leadership Conference
➢ Provide students for end-of-year Multi-Regional Student Leadership Conference	➢ Provide students for Leadership Conference	➢ Provide students for Leadership Conference
	➢ Begin assessment of additional sites and partners in the Bay Region, for SLEWS program dissemination in future years	➢ Begin SLEWS partnership activities in collaboration with program sites in the Bay Region identified in Year 2
	➢ Begin to develop long-term funding for the Cultivating Watershed Stewardship Program in the Bay Region	➢ Continue to develop long-term funding for the Bay Region, and begin implementing funding plan prepared at 2nd Year Multi-Regional Leadership Team Retreat

TASK 3. CREATE A FARM AND NATURE CENTER

SUBTASK 3.1 CONDUCT A CENTER FEASABILITY STUDY

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Coordinator to conduct a search for an appropriate consultant to implement the Center feasibility study, getting at least three bids	➢ FARMS Leadership, Inc. Board of Directors proceeds forward with Center programming, facility development, and business plan according to recommendations	➢ Continuation of Center development, based on Year 2 progress and decisions
➢ Consultant of choice to begin feasibility study, conducting an analysis of the following areas; ➢ **Market Analysis** ➢ **Governance and Management Structure** ➢ **Programs, Services and Products** ➢ **Facility Development and Operations** ➢ **Business Plan and Schedule** ➢ **Projected Expenditures and Strategies for Generating Revenue**	➢ FARMS Leadership, Inc. Board begins development of business plan to lay out short-term and long-term strategies for growth, which may include; funding strategies and capital campaign, governance structure, continued growth of programming, etc.	
➢ Consultant reports findings to FARMS Leadership, Inc. Board of Directors		

SUBTASK 3.2 UTILIZE CURRENT CENTER AS A PROFESSIONAL DEVELOPMENT HUB FOR LOCAL AND REGIONAL ENVIRONMENTAL EDUCATION AND RESTORATION PROGRAMS

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ Hire a Farm Center Coordinator to manage feasibility study, educational outreach and restoration projects at the center	➢ Farm Center Coordinator manages all activities under Subtasks 1 and 2	➢ Farm Center Coordinator manages all activities under Subtasks 1 and 2
➢ Plan short-term and long-term restoration projects at the Center (i.e. ponds, hedgerows, riparian buffer strips, etc.) – projects to be used as demonstration sites for landowners, agencies, etc.	➢ Continue planning restoration projects for Year 2 and 3 installation	➢ Continue planning and implementing restoration projects
➢ Begin installing restoration projects at the Center in conjunction with the Lower Putah Creek Coordinating Committee and with assistance from FARMS and SLEWS participants, at field days throughout the school year: ➢ Riparian buffer/hedgerow (1,400' X 20") ➢ Two tailwater ponds (one acre each) ➢ Grassed roadsides (2,000' X 15')	➢ Manage already installed restoration projects (including replanting, weed control, irrigation), and install Year 2 projects with students: ➢ Swale buffer along West side of Center (2,400' X 30') ➢ Oak woodland buffer along Putah Creek (2 acres), with approx. one mile of trails	➢ Manage already installed restoration projects (including replanting, weed control, irrigation), install Year 2 projects with students: ➢ Final swale/riparian buffer along East side of Center (2,000' X 30')

SUBTASK 3.2 Continued

YEAR ONE (9/02 – 8/03)	YEAR TWO (9/03-8/04)	YEAR THREE (9/04-8/05)
➢ With Sacramento area partners (Audubon, Yolo RCD, Ulatis RCD, Lower Putah Creek Coordinating Committee), begin planning annual landowner/farmer workshops in ecosystem restoration to be held at the Center	➢ Implement first year of landowner/farmer workshops (at least three) at the Center (topics may include; hedgerow, tailwater and wildlife pond, and buffer strip installation, use of native plants, how to plant native grasses, etc.)	➢ Implement second year of landowner workshops, at least four (4), with local partners
➢ Strategize with Adopt-A-Watershed to plan professional development workshops and bus tours for teachers to be held at the Center	➢ Meet with AAW twice per year, at the Center, to plan annual teacher workshop/tour calendar	➢ Meet with AAW twice per year, at the Center, to plan annual teacher workshop/tour calendar
➢ Hold two (2) professional development workshops with AAW, and one bus tour	➢ Hold three (3) workshops and one bus tour partnering with AAW	➢ Hold three (3) workshops and one bus tour partnering with AAW
➢ Continue building the Center's native plant nursery (currently a shade house structure) to propagate plant stock for ecosystem restoration projects in Yolo and Solano Counties (plants will be sold)	➢ Purchase 30' X 48' greenhouse in order to continue growing native plant nursery stock and increase propagation activities	➢ Continue growing native plant nursery stock and increasing propagation activities, utilizing greenhouse and shade house
➢ Continue building and improving the Center's barn-classroom for use during student, teacher, and landowner field days	➢ Continue use of Center's barn-classroom for field days, adding new amenities when necessary	➢ Continue use of barn-classroom for field days, adding new amenities when necessary
➢ Create a library at the Center that houses all relevant agricultural and environmental science curriculum for teachers and informal educators to use as references and "check-out" for use in their own classrooms	➢ Continue building curriculum and resource library	➢ Continue building curriculum and resource library
➢ Begin to work with local, regional, and statewide environmental education programs (such as Project WET, Project Wild, Yolo Basin Foundation, California Foundation for Ag in the Classroom) to hold teacher training	➢ Hold various teacher training workshops in EE curriculum at the center (at least three)	➢ Hold various teacher training workshops in EE curriculum at the center (at least four)

Table 5. Participating Staff from Partner Organizations

Education Site/ CALFED Region	Partner	Staff Member	Title	Types of Contributions
Yolo/Solano/ Sacramento **Sacramento Valley Region**	Audubon California Willow Slough Watershed Program	Judy Boshoven	Program Manager and Watershed Coordinator	➢ Field day design and scheduling ➢ Landowner coordination (property access) for Willow Slough sites ➢ Program management ➢ Technical assistance during field days ➢ Facilitation of watershed program resources
		Jeanne Wirka	Restoration Ecologist and Research Projects Coordinator	➢ Technical assistance during field days ➢ Field day coordination and scheduling ➢ Collaboration with SLEWS Program coordinator (Dan Leroy) ➢ Student research project mentor and facilitator
		Chris Rose	Field Operations Manager	➢ Technical assistance ➢ Collaboration with SLEWS Program coordinator (Dan Leroy) ➢ Supplies and equipment management for field days ➢ Plant materials and nursery coordination
	Yolo County Resource Conservation District	Paul Robins	Executive Director	➢ Yolo County education program collaboration ➢ Outreach to county organizations ➢ Facilitation of watershed program resources
		Vance Howard	Watershed Coordinator (Cache Creek)	➢ Field day design and scheduling ➢ Landowner coordination (property access) for Cache Creek sites ➢ Technical assistance, materials and equipment coordination
		Kate Laddish	Watershed Education Coordinator (Yolo County)	➢ Curriculum development for FARMS and SLEWS ➢ Countywide environmental and agricultural education program collaboration ➢ Outreach support (media, newsletters, WebPages, etc.)
	Lower Putah Creek Coordinating Committee	Rich Marovich	Putah Creek Streamkeeper	➢ Collaboration with various Putah Creek Watershed Groups ➢ Field day design, coordination, and scheduling ➢ Landowner coordination (property access) for Putah Creek sites ➢ Facilitation of supplies, materials, and equipment use for field days
		Ron Unger	Committee Member, Technical Advisor	➢ Field day coordination and scheduling ➢ Program resource facilitation (plants, equipment, etc.) ➢ “Adopt-A-Reach” coordination with other educational programs along Putah Creek ➢ Student research project mentor and facilitator

Table 5. Continued

Education Site/ CALFED Region	Partner	Staff Member	Title	Types of Contributions
Yolo/Solano/ Sacramento	Community Alliance with Family Farmers/ Ulatis RCD	Marcia Gibbs	Executive Director, Ulatis RCD	➢ Field day design and scheduling ➢ Landowner coordination in Solano County (property access) ➢ Technical assistance ➢ Facilitation of watershed program resources
		Karrie Stevens	Education Director, CAFF	➢ Provide localized curriculum for FARMS and SLEWS ➢ Countywide environmental and agricultural education program collaboration (especially with the Cities of Davis and Winters) ➢ Outreach support (media, newsletters, WebPages, etc.)
	Yolo Basin Foundation	Cheryl Chipman	Education Program Coordinator	➢ Development and implementation of specialized training for FARMS and SLEWS teachers, held at Vic Fazio Wildlife Area. ➢ Region-wide environmental education program collaboration (especially with CREEC, Region 3) ➢ Outreach support (media, newsletters, WebPages, etc.)
	The University of California at Davis	Richard Engel	Director of Outreach and Student Services (College of AES)	➢ Host to FARMS and SLEWS field days ➢ Liaison with other UCD faculty and staff ➢ Outreach support (media, newsletters, WebPages, etc.) ➢ Specialized opportunities for teacher training and curriculum development
		Lisa Huyck	Research Manager, IACT (Irrigated Agriculture Conservation Tillage Program)	➢ Host to FARMS and SLEWS field days based on wildlife-friendly agriculture ➢ Liaison with other UCD faculty and staff, especially other SAFS researchers on UCD campus and field station locations ➢ Serve as research project coordinator for student projects at IACT field location (IACT is requesting CALFED funds for high school education projects, and is opening up their field studies for students projects)
Butte/Glenn/ Tehama **Sacramento Valley Region**	The Nature Conservancy – Sacramento River Project	Dawit Zeleke	Agricultural and Restoration Programs Manager	➢ Field day design, scheduling, and coordination ➢ Landowner coordination (property access) for the Sacramento River restoration sites ➢ Collaboration and assistance to the FARMS Leadership, Inc. Regional Education Coordinator (to be hired) ➢ Facilitation of watershed program resources

Table 5. Continued

Education Site/ CALFED Region	Partner	Staff Member	Title	Types of Contributions
Butte/Glenn/ Tehama		Amy Hoss	Education and Outreach Coordinator	➢ Provide localized curriculum for FARMS and SLEWS ➢ Region-wide environmental education program collaboration (especially with existing TNC education programs and teachers) ➢ Collaboration with the FARMS Leadership, Inc. Regional Education Coordinator (to be hired) ➢ Outreach support (media, newsletters, WebPages, etc.)
	Chico Unified School District (WEP)	Anne Stephens	Education Coordinator	➢ Provide localized curriculum for FARMS and SLEWS ➢ Collaboration with Butte Creek program (WEP), liaison to other environmental education programs and teachers in the area (e.g. Adopt-A-Watershed programs) ➢ Provide professional development programs for FARMS and SLEWS teachers
	Chico State University, College of Agriculture	Brad Dodson	Professor, Agricultural Education	➢ Provide Student Teachers from the CSUC agricultural education credential program to assist with field days ➢ Provide localized curriculum for FARMS and SLEWS ➢ Provide assistance with student research projects and mentor selection (CSUS faculty and staff) ➢ Collaboration with the FARMS Leadership, Inc. Regional Education Coordinator (to be hired)
		Ray Watkins	Director, Agricultural Teaching and Research Center	➢ Host FARMS and SLEWS field days at ATRC ➢ Provide assistance with student research projects and mentor selection (CSUS faculty and staff) ➢ Collaboration with the FARMS Leadership, Inc. Regional Education Coordinator (to be hired)
Stockton/Lodi **Delta Region**	San Joaquin County Office of Education	Julie Schardt	Delta Studies Program Coordinator, CREEC Coordinator	➢ Provide Delta Studies curriculum, already developed, for FARMS and SLEWS programs ➢ Provide specialized teacher training for FARMS and SLEWS teachers ➢ Collaboration with the FARMS Leadership, Inc. Regional Education Coordinator (to be hired) ➢ Region-wide environmental education program collaboration (especially with CREEC)

Table 5. Continued

Education Site/ CALFED Region	Partner	Staff Member	Title	Types of Contributions
Stockton/Lodi	San Joaquin County Resource Conservation District	Amy Augustine	Watershed Coordinator (Murphy Creek)	➢ Field day design and scheduling ➢ Landowner coordination (property access) for Murphy Creek sites ➢ Technical assistance during field days ➢ Collaboration with the FARMS Leadership, Inc. Regional Education Coordinator (to be hired) ➢ Facilitation of watershed program resources and collaboration with partner organizations (such as East Bay MUD)
	East Bay MUD	Kent Reeves	Wildlife Biologist	➢ Field day design and technical assistance ➢ Landowner coordination (of East Bay MUD properties) ➢ Assistance with student research projects (especially wildlife monitoring projects and water quality)
	San Joaquin County Audubon Chapter	Steve Stocking	Board Member, Mokelumne River Team	➢ Assistance with student research projects (especially bird surveys) ➢ Collaboration with other members of the Mokelumne River Team ➢ Technical assistance at field days
Fresno **San Joaquin Region**	California State University, Fresno – College of Agricultural Sciences and Technology	Daniel Bartell, Ph.D.	Dean	➢ College host for FARMS field days ➢ Facilitation of faculty and staff participation in FARMS field days as mentors and presenters, as well as for student research projects. ➢ Collaboration with the FARMS Leadership, Inc. Regional Education Coordinator (to be hired)
	Central Valley Agricultural Literacy Project	Lonna Torrico	Director	➢ Provide Central Valley Ag Literacy curriculum, already compiled, for the FARMS program ➢ Provide professional development programs for FARMS teachers ➢ Collaboration with the FARMS Leadership, Inc. Regional Education Coordinator (to be hired) ➢ Region-wide environmental and agricultural education program collaboration (especially with Fresno Unified School District)
Sonoma **Bay Region**	Southern Sonoma Resource Conservation District	Jennifer Allen	Resource Conservationist and Education Coordinator	➢ Coordinate the Sonoma FARMS Leadership Program ➢ County-wide environmental and agricultural education program collaboration (especially with existing Adopt-A-Watershed programs) ➢ Field day design and scheduling ➢ Landowner coordination (property access) for Sonoma Creek sites

Table 5. Continued

Education Site/ CALFED Region	Partner	Staff Member	Title	Types of Contributions
	Sotoyome Resource Conservation District	Kerry Williams	Executive Director	➢ Collaboration with the Sonoma FARMS Leadership Program ➢ Facilitate RCD staff's technical assistance for FARMS field days ➢ Outreach to Sonoma County organizations ➢ Facilitation of watershed program resources
	Santa Rosa Junior College	Leonard Diggs	SRJC Farm Manager	➢ Host for FARMS Leadership Program field days ➢ Facilitate SRJC faculty and staff assistance as mentors, field day presenters, and student research projects ➢ Provide SRJC students for field day implementation and research projects ➢ Collaboration with other Sonoma County wildlife-friendly farming and sustainable agriculture education programs
Multi-Region	Adopt-A-Watershed	Kim Stokely	President and Education Director	➢ Collaboration with all FARMS and SLEWS programs to provide professional development programs ➢ Provide standards-based curriculum in environmental education for use in preparation for and during field days ➢ Provide networking opportunities for Adopt-A-Watershed programs throughout the four CALFED Bay-Delta Regions to visit and learn about the FARMS and SLEWS program models ➢ Assist with program evaluation of FARMS and SLEWS programs and document results
	Cooperative Extension, University of California	Multiple	Numerous Advisors, Specialists, etc.	➢ Technical assistance at field days in all four regions ➢ Field day design and scheduling ➢ Landowner coordination (property access) for field day sites ➢ Outreach support (media, newsletters, WebPages, etc.) ➢ Staff participation in FARMS field days as presenters, and act as mentors for student research projects. ➢ Collaboration with other county and regional organizations
	Natural Resources Conservation Service (USDA – NRCS)	Multiple	Numerous Soil Conservationists, Range Conservationists, etc.	➢ Technical assistance at field days in all four regions ➢ Field day design and scheduling ➢ Landowner coordination (property access) for field day sites ➢ Outreach support (media, newsletters, WebPages, etc.) ➢ Staff participation in FARMS field days as presenters, and act as mentors for student research projects. ➢ Collaboration with other county and regional organizations

Table 6. Primary cost-share contributions

Cost-share contributors	Types of contributions	Estimated value of contributions to date	Estimated value of future contributions	Total estimated contributions
National Fish and Wildlife Foundation	➢ Salaries ➢ Field day implementation funds ➢ Supplies and equipment ➢ Transportation and travel	$75,000	$100,000	$175,000
Packard Foundation	➢ Salaries ➢ Field day implementation funds ➢ Supplies and equipment	$0	$60,000	$60,000
Audubon-California CALFED Bay-Delta Program (ERP Grant #98-E13 and #01-N31)	➢ Restoration project implementation ➢ Equipment and supplies ➢ Technical assistance ➢ Mentors	$250,000	$1,000,000	$1,250,000
Yolo RCD - CALFED (ERP 01-N25)	➢ Technical assistance ➢ Education and outreach resources ➢ Mentors	$0	$20,000	$20,000
Yolo RCD - CALFED (WP #01-140) and 319h grant	➢ Education and outreach resources ➢ Technical assistance ➢ Restoration implementation funds ➢ Mentors	$0	$200,000	$200,000
Lower Putah Creek Coordinating Committee (WP 01-0128 and ERP 2002)	➢ Restoration project implementation ➢ Technical assistance ➢ Mentors ➢ Education and outreach resources	$2,000	$100,000**	$102,000
CAFF/Ulatis RCD CALFED (ERP 01-N42)	➢ Restoration project implementation ➢ Technical assistance ➢ Mentors ➢ Education and outreach - workshops	$0	$75,000	$75,000
Yolo Basin Foundation-CALFED (ERP 01-N40)	➢ Mentors ➢ Teacher development/training ➢ Curriculum	$0	$10,000	$10,000
UC Davis (various departments, possible grant funding)	➢ Mentors ➢ Research project assistance ➢ Supplies and materials ➢ Field day hosting	$60,000*	$30,000	$90,000
The Nature Conservancy (2002 CALFED ERP)	➢ Restoration project implementation ➢ Supplies and equipment ➢ Technical assistance ➢ Mentors ➢ Administrative assistance	$10,000	$225,000**	$235,000
Chico Unified School District (CALFED ERP 01-N35)	➢ Local curriculum ➢ AAW workshops for teachers ➢ Supplies and materials	$0	$20,000	$20,000
Chico State University (College of Agriculture)	➢ Mentors ➢ Supplies and materials ➢ Field day hosting ➢ Research project assistance	$5,000	$15,000	$20,000

Table 6. Continued

Cost-share contributors	Types of contributions	Estimated value of contributions to date	Estimated value of future contributions	Total estimated contributions
San Joaquin County Office of Education (CALFED ERP 01-N38)	➢ Local curriculum for teachers ➢ Professional development ➢ Supplies and materials ➢ Technical assistance	$0	$30,000	$30,000
San Joaquin County RCD (CALFED ERP 99-N15 and ERP 01)	➢ Restoration project implementation ➢ Supplies and equipment ➢ Mentors ➢ Technical assistance	$0	$300,000	$300,000
San Joaquin County Audubon Chapter	➢ Mentors ➢ Technical assistance	$0	$10,000	$10,000
Fresno State University (College of Ag Sciences and Technology)	➢ Mentors ➢ Supplies and materials ➢ Field day hosting	$0	$15,000	$15,000
Central Valley Agricultural Literacy Project (Kellogg)	➢ Curriculum workshops ➢ Teacher training	$500	$4,500	$5,000
Southern Sonoma County RCD (CALFED ERP 01-H203)	➢ Technical assistance ➢ Restoration project implementation ➢ Mentors ➢ Supplies and equipment	$4,000	$12,000	$16,000
Santa Rosa Junior College	➢ Mentors ➢ Field day hosting ➢ Supplies and materials	$5,000	$15,000	$20,000
Adopt-A-Watershed (CALFED ERP 01-N39 and 2002 submitting)	➢ Curriculum development ➢ Teacher workshops ➢ Summer Leadership Institute ➢ Tours	$15,000	$100,000**	$115,000
University of California Cooperative Extension	➢ Mentors ➢ Supplies and materials ➢ Technical assistance	$8,000	$15,000	$23,000
Natural Resources Conservation Service	➢ Mentors ➢ Project implementation cost-share (EQIP and WHIP) ➢ Technical assistance ➢ Supplies and equipment	$50,000	$100,000	$150,000
US Fish and Wildlife Service	➢ Technical assistance ➢ Project implementation cost-share funds from Partners for Fish and Wildlife (Yolo County)	$40,000	$10,000	$50,000
Department of Fish and Game	➢ Technical assistance ➢ Project implementation cost-share funds from Wildlife Conservation Board (Yolo County)	$20,000	$20,000	$40,000

*** Eight years of in-kind assistance**
**** Pending CALFED 2002 ERP funding**

Appendix 2

FARMS Leadership, Inc. Board of Directors

FARMS Leadership, Inc. Board of Directors

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