



## Memorandum

Date: October 1, 1999  
To: Ecosystem Roundtable  
From: Wendy Halverson Martin  
Subject: Recommendations from Interim Science Panel

### Summary

An Interim Science Panel met on September 27 and September 28, 1999. The Panel was asked to:

- Review the FY 2000 Ecosystem Restoration Implementation Plan
- Identify projects for FY 2000 from the remaining 1999 proposals
- Review the additional 1999 watershed projects
- Provide guidance on how to set priorities for FY 2001

### FY2000 Projects

The Panel recommends funding 20 projects totaling approximately \$14.5 million from the 1999 Proposal Solicitation, and to provide funds for environmental water acquisitions and strengthening of the Ecosystem Science and Monitoring Program. Details and justifications for these recommendations are attached.

### 1999 Watershed Projects

The Panel recommends funding eight of the nine additional 1999 watershed projects. Details and justifications for this recommendation are attached.

### Action

The Roundtable is asked to concur with these recommendations. The recommendations and Roundtable comments will be forwarded to the Bay Delta Advisory Committee on October 28, 1999, and the CALFED Policy Group on November 17, 1999.

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#### CALFED Agencies

**California** The Resources Agency  
Department of Fish and Game  
Department of Water Resources  
California Environmental Protection Agency  
State Water Resources Control Board  
Department of Food and Agriculture

**Federal** Environmental Protection Agency  
Department of the Interior  
Fish and Wildlife Service  
Bureau of Reclamation  
U.S. Geological Survey  
Bureau of Land Management  
U.S. Army Corps of Engineers

Department of Agriculture  
Natural Resources Conservation Service  
U.S. Forest Service  
Department of Commerce  
National Marine Fisheries Service  
Western Area Power Administration



## **Interim Science Panel Recommendations September 27-28, 1999**

Based on a recommendation of the BDAC Ecosystem Roundtable, CALFED staff convened an Interim Science Panel on September 27 and September 28, 1999, to complete three tasks (these tasks were identified in a September 16, 1999 memorandum from Wendy Halverson Martin to the Interim Science Panel):

- Review the FY 2000 Ecosystem Restoration Implementation Plan and provide support for the plan as identified, or specific guidance as to how it should be modified
- Review the remaining 1999 proposals which were not funded in 1999 and recommend specific projects which satisfy the FY 2000 implementation plan
- Review the list of watershed projects recommended to supplement the 1999 funding package and provide concurrence or specific recommendations for revising the list.

Attachment A is a list of Interim Science Panel members.

Before responding to these tasks, the panel emphasized that time and resource constraints precluded anything more than a cursory scientific review of the Implementation Plan and potential projects. However, the Interim Science Panel focused intensively during this period on developing a recommended list of projects and providing guidance to CALFED on subsequent processes. The panel work product represents the best recommendation that the Panel could provide with the resources and time available. This effort should not in any way be considered a full, in-depth scientific vetting of projects as described by the Strategic Plan Core Team. In the future, CALFED should allow adequate time and provide the resources necessary for a full, in-depth review of priorities and projects.

### **Review the Implementation Plan**

The Interim Science Panel had the opportunity to review the Draft FY2000 Implementation Plan for Ecosystem Restoration (dated September 13, 1999) as well as a CALFED staff generated matrix of projects, organized by the programmatic actions contained in the Implementation Plan, and heard a CALFED staff presentation on the priorities in the Implementation Plan. During the presentation, the Implementation Plan was described as a combination of science and administrative concerns, including coordination with other CALFED programs (hence the focus on the South Delta). The Panel was not comfortable commenting on the administrative focus in the plan or in adopting this plan as a foundation for recommending projects for funding in FY 2000 for two reasons:

1) The pool of projects was solicited based on 1999 Proposal Solicitation Package criteria, not the FY 2000 Implementation Plan.

2) The scientific basis for the Implementation Plan has not been fully developed. Therefore, there is no assurance that the "optimal" or "best" projects are encompassed by the current Implementation Plan.

Rather than providing guidance as to how the plan should be modified, the panel focused on the remaining two tasks.

### **Review the 1999 proposal and recommend specific projects**

The Panel reviewed the lists of 1999 proposals provided by CALFED staff and identified a number of proposals for further discussion, based on the following considerations:

- The scores and comments from the 1999 technical review panels. These scores and comments were made in the context of the priorities identified in the FY99 Proposal Solicitation Package and were the only information available to the panel that was based on an in-depth review of the proposals.
- Whether or not a project had a high potential to yield information useful for future restoration planning and implementation. The Panel considered these projects to be "information rich" in that they likely addressed one or more of the critical scientific uncertainties and impediments to restoration identified in the Strategic Plan.
- Whether or not CALFED had invested in previous phases of the project. The Panel considered providing funding to existing projects ready for next phase funding to avoid losing valuable information and momentum on these projects.

One caveat to this consideration is that the Panel recommended comprehensive scientific and technical review for large-scale, phased projects prior to providing construction phase funding. For these large-scale and costly projects, additional review should confirm that the emerging project is scientifically sound, continues to address critical scientific uncertainties, remains a priority action when compared to other types of ecosystem restoration actions, and fits within the developing region-wide perspective. The Interim Science Panel recognized all existing large, next-phase construction projects as having the potential to address scientific uncertainties and fit within an adaptive management framework. The Panel recommends holding these large construction projects for review in FY 2001. This allows for completion of ERP White Papers currently being developed, completion of comprehensive scientific and technical review prior to construction-phase funding, and completion of comprehensive monitoring plans including peer review.

- The need to invest in the science review of the Ecosystem Restoration Program. This would, in part, bring additional scientific validity to the program, review past project efforts to assess their value, and help scope FY2001 priorities.
- The need recently expressed by the CALFED Policy Group to fund watershed proposals to demonstrate CALFED's support and commitment to local, community-based watershed improvement efforts, and to more clearly address the scientific uncertainties and relationships of upper and lower watershed management and the Bay-Delta ecosystem.

The Panel members reviewed the proposals selected from the list and based on the above considerations and on the potential availability of approximately \$25 million dollars for ecosystem restoration projects and activities from the Federal Bay Delta Act, the Panel recommended 20 projects totaling more than 14.5 million dollars for funding in FY2000. They also supported a CALFED staff recommendation for providing money for the Environmental Water Account and strengthening of the Ecosystem Science and Monitoring Program, although the Panel did not have the information necessary to assign specific funding levels to these efforts. Attachment B provides a more detailed description of the recommendations. Attachment C is the executive summaries for the twenty projects.

## FY2000 Project Recommendations

Project Title	Amount
99-B102 Tuolumne River Bobcat Flat Floodplain Acquisition	\$1,641,941
99-B116 Canal Ranch Habitat Restoration Phase II	\$131,980
99-B126 Subreach/Site-Specific Management Planning on the Sacramento River	\$519,000
99-B145 Culture of Delta Smelt Phase II	\$431,606
99-B152 A Mechanistic Approach to Riparian Restoration -San Joaquin Basin	\$233,666
99-B153 Merced River Corridor Restoration Project Phase III	\$229,000
99-B165 Liberty Island Acquisition and Restoration Phase I	\$2,623,043
99-B166 Focused Action to Develop Ecologically-based Hydrologic Models and Water Management Strategies in the San Joaquin Basin	\$295,925
99-B192 McCormick Williamson Tract Phase II Restoration Planning	\$355,000
99-B193 McCormick Williamson Tract Phase II Monitoring Program	\$556,200
99-C100 Last Chance Creek Project	\$980,000
99-C105 Panoche/Silver Creek Watershed Management/ Action Plan	\$848,000
99-C108 Cottonwood Creek Watershed Monitoring and Assessment	\$350,000
99-C140 Sonoma Creek Watershed Conservancy (1 year)	\$489,923
99-D100 Real Time Water Quality Management	\$652,330
99-D124 Dissolved Organic Carbon Release - Delta Wetlands Part 2	\$2,740,040
99-E109 Treating Ballast Water Discharges at Existing Municipal Wastewater Treatment Plants	\$118,460
99-E110 Determining the Biological, Physical and Chemical Characteristics of Ballast Water Arriving in SF Bay	\$375,750
99-E118 Arundo Donax Eradication and Coordination	\$818,045
99-F105 Biological Assessment of Green Sturgeon	\$205,013
Subtotal : \$14,594,922 plus 3% administration	\$15,100,000
Environmental Water Account (\$9,000,000 carryover from previous year)	\$1,000,000
Ecosystem Science Program	\$8,900,000
Special Support Programs	\$5,000,000
<b>Total</b>	<b>\$30,000,000</b>

## Review of 1999 Watershed Projects

The Panel reviewed nine watershed projects recommended for additional funding as part of the 1999 Ecosystem Restoration Projects. These projects were identified in a September 1, 1999 memorandum from Wendy Halverson Martin to the Ecosystem Roundtable upon request of the CALFED Policy Group. The Panel supports eight of the proposals and recommends that these proposals be funded.

The Panel does not recommend funding 99-C115, Upper Trinity River Watershed Stewardship Project. There were several reasons for this recommendation.

- Because of the unique relationship between the Trinity River and the Central Valley, it is difficult to establish direct connections between restoration on the Trinity watershed and problems specific to the Bay Delta,
- The amount of money requested seemed disproportionately low in relation to the type of work to be completed, and
- The Panel felt that the scope of this project would not provide information addressing the issue of the link between upper watershed processes and the Bay Delta. The Panel discussed the importance of implementing upper watershed projects which can provide such information.

## Guidance for FY 2001 Priorities using Adaptive Management

The implementation of adaptive management requires the construction of a comprehensive framework which addresses scientific uncertainties, testable hypotheses and conceptual models which allow for accumulation of information and contributes to improved future decision making. Once the framework has been established, specific types of individual projects can be recruited or solicited to comprise the building blocks of an adaptive management framework. This process allows a critical review and comparison of projects which are similar to each other, and allows for cost/benefit comparisons of similar projects. The Panel encourages CALFED to emphasize adaptive management in all aspects of ERP implementation, including in the FY 2001 priorities.

In addition to addressing the tasks originally assigned to the Interim Science Panel, the Panel offered several suggestions for the process of setting FY 2001 priorities.

- Continue to use the Ecosystem Restoration Plan and Strategic Plan as the basis for developing priorities.
- Immediately involve a group of scientists in developing the FY2001 priorities and

preparing specific proposal language for the Proposal Solicitation Package.  
Conduct informational meetings to provide status of activities to date.

- Be sure to tap into specialized scientific expertise. Conduct meetings to bring in regional technical experts. Use bottom-up science.

The Panel also emphasized that adaptive management requires scientific interventions (projects) which generate high levels of information. Implementation of adaptive management requires a different process than has been used in the past to recruit ecosystem restoration projects.

**Ecosystem Restoration  
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as of 9/22/99**

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Facilitator

## Description of Recommended Projects for FY 2000

Twenty projects are recommended for funding totaling over 14.5 million dollars. The projects are described below and executive summaries for each of the projects are provided in Attachment B. The Technical Review Panel comments refer to the original technical review panels that scored each of the proposals earlier this year. The Interim Science Panel refers to the group of scientists that put together this recommendation on September 27 and September 28, 1999.

### 99-B102 Tuolumne River Bobcat Flat Floodplain Acquisition

Requested amount: \$1,641,941

**Recommended amount: \$1,641,941**

This project will preserve and restore approximately 280 acres of riparian floodplain on the Chinook salmon spawning reach of the Tuolumne River 12 miles east of Waterford. This project was scored highly by the Technical Review Panel and considered a great opportunity to protect habitat and provide flood control benefits along the Tuolumne. The Technical Review Panel noted that the ultimate land management agency still needs to be clarified. The Interim Science Panel observed that acquisition of this parcel was time-sensitive, could provide a gravel source for other restoration projects, and could be important for riparian/geofluvial processes.

### 99-B116 Canal Ranch Habitat Restoration Phase II

Requested amount: \$131,980

**Recommended amount: \$131,980**

The Canal Ranch Habitat Management Plan includes restoration of seasonal wetlands, riparian and shaded riverine aquatic habitats and enhancement of agricultural management for fish and wildlife on 3,070 acres located in the northeastern Delta, San Joaquin County. Phase II involves ground truthing the Plan with the results of Phase I. The Interim Science Panel concluded this was continuation of important work in a high priority area and had strong links to important agricultural issues. This effort would validate and demonstrate the concept of wildlife-friendly agricultural practices, providing benefits to agriculture and wildlife.

## **99-B126 Subreach/Site-Specific Management Planning on the Sacramento River**

Requested amount: \$13,964,900

**Recommended amount: \$519,000**

The Nature Conservancy and others have been previously funded by CALFED to purchase land along the mainstem of the Sacramento River within the SB 1086 Sacramento River Conservation Area. This proposal was for additional acquisitions, baseline stewardship, and site-specific management planning. The Interim Science Panel recommended funding only the site-specific management planning part of this proposal. That management plan will address potential changes in hydrology and geomorphology, local economic impacts, and other issues associated with ongoing riparian protection and restoration work. This plan could result in important information for CALFED to better understand the complete suite of issues associated with riparian preservation and restoration. The Interim Science Panel felt it was important to begin the necessary site-specific planning efforts including local economic impacts including better understanding of potential 3<sup>rd</sup> party impacts associated with changes in land use.

## **99-B145 Culture of Delta Smelt: Phase II**

Requested amount: \$431,606

**Recommended amount: \$431,606**

This project is developing a functional culture system for the threatened delta smelt. CALFED funded the first year of this project which ended in June of 1999. This project was scored highly by the Technical Review Panel. The Interim Science Panel also supported this funding for continued work on a high priority at risk species. Some of the values the Interim Science Panel identified included culture of larval and adult fish for toxicological studies and experimental fish for fish treadmill/screening studies.

## **99-B152 A Mechanistic Approach to Riparian Restoration -San Joaquin Basin**

Requested amount: \$233,666

**Recommended amount: \$233,666**

This project will identify the physical and biological mechanisms affecting establishment of riparian vegetation in order to identify the most cost-effective strategies and sites for riparian protection and restoration. The Technical Review Panel commented that this could be a useful tool. The Interim Science Panel agreed this was an important effort for the San Joaquin Basin as the riparian resource and associated habitat values constitute the major focus for restoration effort in the near term.

### **99-B153 Merced River Corridor Restoration Project Phase III**

Requested amount: \$229,000

**Recommended amount: \$229,000**

CALFED previously funded Phase II of this project to conduct baseline analyses and identify important issues and concerns. Phase III will complete field and monitoring efforts, develop an overall Merced River Corridor Restoration Plan, and develop conceptual design for five priority projects from the Plan. The Technical Review Panel supported continued funding for the consensus building approach. The Interim Science Panel concluded the timing of the effort was ripe and could benefit from the ongoing "white paper" effort which is studying stream channel dynamics.

### **99-B165 Liberty Island Acquisition and Restoration Phase I**

Requested amount: \$13,495,605

**Recommended amount: \$2,623,043**

In 1997, CALFED provided funding to acquire the majority of Liberty Island. This proposal is to purchase two inholdings, to develop a restoration and monitoring plan for Liberty Island, and to purchase two additional properties. Restoration of this 5,209 acre parcel will provide tidal shallow-water, tidal emergent wetlands, seasonal wetlands, delta sloughs, and riparian habitat to benefit Delta smelt, winter-run Chinook salmon and other priority species. The Technical Review Panel and Interim Science Panel recommend funding the two inholding acquisitions and development of the restoration and monitoring plan. The Interim Science Panel observed that acquisition of the inholdings would provide greater flexibility in restoration planning and reduce future liability. The Interim Science Panel did not recommend acquiring the other identified north delta parcels detached from Liberty Island.

### **99-B166 Focused Action to Develop Ecologically-based Hydrologic Models and Water Management Strategies in the San Joaquin Basin**

Requested amount: \$295,925

**Recommended amount: \$295,925**

This project will develop state-of-the-art scientific approaches for developing water management operations compatible with both environmental and other water supply objectives. Methods for identifying the flow regimes necessary to achieve ecological restoration objective without undesirable water supply impacts on water users will be demonstrated. The Interim Science Panel noted that this project would address several critical uncertainties related to natural flow regimes and issues associated with channel dynamics and sedimentation.

## **99-B192 McCormick-Williamson Tract Phase II Restoration Planning**

Requested amount:\$355,000

**Recommended amount: \$355,000**

CALFED recently purchased the McCormick-Williamson Tract, a 1600 acre Delta island located in southwestern Sacramento County. This proposal will support the design and environmental documentation for restoration of the Tract. With purchase of the Tract final, the Interim Science Panel saw this as an integral part to restoration of this important area.

## **99-B193 McCormick-Williamson Tract Phase II Monitoring Program**

Requested amount: \$556,200

**Recommended amount: \$556,200**

This project complements the above proposal by conducting the historic research and baseline studies necessary for restoration planning and development of a monitoring program for the McCormick-Williamson Tract. The Interim Science Panel concluded that it was critical to develop a good restoration and monitoring plan for this area.

## **99-C100 Last Chance Creek Watershed Restoration Project - Ferris Meadowview Reach**

Requested amount: \$980,000

**Recommended amount: \$980,000**

The Last Chance Creek Watershed is a 90,000 acre forest and meadow ecosystem in the headwater of the East Branch, North Fork Feather River. It contains the longest contiguous meadow complex (37 miles) in the Sierra Nevada drainage area of the Sacramento River. The project will restore 9.1 miles of channel and 4,330 acres of meadow by returning streamflow to abandoned remnant or reconstructed channels and rehabilitation of 1 mile of county road through relocation and/or surfacing. The Technical Review Panel scored this project highly and the Interim Science Panel concluded that this project could provide important information on the effects of meadow restoration in the upper watershed. One of the ecological uncertainties the Interim Science Panel would like to see resolved is the linkage between upper watersheds and CALFED's objectives for the Bay-Delta system.

### **99-C105 Panoche/Silver Creek Watershed Management and Action Plan**

Requested amount: \$848,000

**Recommended amount: \$848,000**

Through a Coordinated Resources Management Plan, best management practices outlined in the Panoche Silver Creek Watershed Assessment will be evaluated for the management of erosion and reduction of the sediment and contaminant load delivered from the upper watershed during high flow events. The results of these and other studies will be compiled into a watershed "Action Plan" to plan and implement future watershed management actions. This project has both ecosystem restoration and water quality benefits. The Technical Review Panel scored this project highly and the Interim Science Panel noted that this project had the potential to help answer important ecological question relative to selenium in the watershed and its relationship to the Bay-Delta system.

### **99-C108 Cottonwood Creek Watershed Monitoring and Assessment**

Requested amount: \$935,000

**Recommended amount: \$350,000**

CALFED previously funded the development of the Cottonwood Creek Watershed Group, a landowner group which works with the local agencies and other stakeholders. This project will support the development of a watershed assessment to guide future activities within Cottonwood Creek. Because this is an important tributary, the Interim Science Panel recommended funding a year of continued work in this watershed.

### **99-C140 Sonoma Creek Watershed Conservancy**

Requested amount: \$702,633

**Recommended amount: \$489,923**

The Sonoma Creek Watershed Conservancy has a proven track record of successful watershed planning and implementation work, including work previously funded by CALFED. This project will implement riparian and aquatic habitat restoration activities and continue watershed stewardship and education programs in the Sonoma Creek watershed. The Interim Science Panel recommended funding one year of continued activities.

## 99-D100 Real Time Water Quality Management - San Joaquin River

Requested amount: \$652,330

**Recommended amount: \$652,330**

The Grassland Basin contains the largest contiguous wetland in the State of California. This project proposes monitoring, modeling and adaptive management of field operations, in cooperation with the currently funded CALFED San Joaquin River Real-Time Water Quality Management Project to coordinate seasonal wetland drainage with assimilative capacity. This project was scored highly by the Technical Review Panel and the Interim Science Panel considered the project an important environmental water quality action for this area.

## 99-D124 Dissolved Organic Carbon Release - Delta Wetlands Part 2

Requested amount: \$2,740,040

**Recommended amount: \$2,740,040**

Part one of this project was funded earlier this year by CALFED which focuses on the quality of organic carbon released by wetlands and agricultural operations. This proposal focuses on the amounts of organic carbon released by wetlands and agricultural operations and what management strategies may be used to limit the introduction of organic carbon into Delta waters. The Interim Science Panel concluded that it was important to study both the quality and amount of organic carbon to gain comprehensive insight into the issue. This is a high priority question to be answered for the Ecosystem Restoration Program.

## 99-E109 Treating Ballast Water Discharges at Existing Municipal Wastewater Treatment Plants

Requested amount \$118,460

**Recommended amount: \$118,460**

This project investigates the possibility of treating ballast water in municipal wastewater treatment plants, the cost of such activities, and the effectiveness of standard municipal wastewater treatment to remove or kill ballast water organisms using benchtop wastewater treatment models. The Interim Science Panel supported additional projects focusing on non-native invasive species, and the impacts and control of non-native invasive species in ballast water has not been previously been funded by CALFED.

## **99-E110 Determining the Biological, Physical and Chemical Characteristics of Ballast Water Arriving in SF Bay**

Requested amount: \$375,750

**Recommended amount: \$375,750**

The discharge of ships' ballast water is probably the greatest single source of new introductions into aquatic habitats, and ballast water arriving in the Bay and Delta has never been sampled. This project will compile and analyze shipping data and sample ballast water to develop data on the types, sizes, and concentrations of organisms arriving in the Bay/Delta ports. The Interim Science Panel supported this project which could provide valuable information on this area of critical uncertainty.

## **99-E118 *Arundo Donax* Eradication and Coordination**

Requested amount: \$818,045

**Recommended amount: \$818,045**

This project directs funds to partners in six watersheds to carry out eradication of *Arundo donax*, the state's most invasive riparian weed. This proposal was scored highly by the Technical Review Panel and was the most comprehensive proposal on *Arundo*. The Interim Science Panel supported the region-wide coordination proposed and noted that numerous volunteer resources would be leveraged to address this non-native invasive species issue.

## **99-F105 Biological Assessment of Green Sturgeon Phase II**

Requested amount: \$205,013

**Recommended amount: \$205,013**

This project continues work focusing on the biological characteristics and key areas of scientific uncertainty of the Green Sturgeon and its habitats. The Technical Review Panel scored this project highly and the Interim Science Panel supported continued funding to gain additional information on this high priority species.

## **Environmental Water Acquisitions**

The Interim Science Panel endorsed the Strategic Plan's recommendation that in cases where there may be less than adequate scientific rationale for major actions (e.g. construction projects with irreversible effects), funds may best be invested in fungible assets such as land or water. These purchases are unquestionably of considerable value, and may in the future be sold or exchanged for items which turn out to be of greater value to the ecosystem as our knowledge of the ecosystem improves. Thus, the Panel recommends funding the Environmental Water

Account with those funds not needed for the highest ranked projects. The Panel did not have the time or resources to be able to specify a specific amount, but reasoned that four to seven million would be appropriate.

### **Ecosystem Science and Monitoring Program**

There is increasing recognition that an immediate and significant effort is needed to ensure that key upcoming decisions can be advised as fully as possible by science-based decision support. The Interim Science Panel supported the strengthening of the Ecosystem Science and Monitoring Program.