

## **EXHIBIT A**

### **SCOPE OF WORK**

#### **An Adaptive Management Forum for the Planning and Implementation of Large-scale Riverine Habitat Restoration Projects**

##### **PROJECT SUMMARY**

The Anadromous Fish Restoration Program (AFRP) and the Information Center for the Environment (ICE), Department of Environmental Science and Policy, University of California at Davis, will establish an Adaptive Management Forum (Forum) to provide input and review assistance in the design, implementation, and monitoring of large-scale riverine habitat restoration projects. The Forum will provide project proponents and funding agencies access to a panel of experts (Panel) that can provide scientific and technical input throughout the different phases of restoration project planning, design, and implementation. The use of an adaptive management process and input from a panel of scientific and technical experts will help ensure that funding agencies and project managers maximize the ecological effectiveness of their projects and increase the information learned from the project design and implementation process. This Forum will also be used to compare a similar class of projects across watersheds to recommend implementation and monitoring strategies to address key uncertainties associated with channel and floodplain restoration. Multi-phased projects will benefit from multiple Forum interactions as phased-implementation progresses.

##### **BACKGROUND**

The AFRP has contributed funds to design and implement channel restoration projects since 1997. The AFRP has worked with state and federal government agency partners and outside technical experts to review project proposals and revise design and implementation approaches in some instances. However, to be more useful to project proponents, funding agencies, and the scientific community, the current project review process needs to be improved.

Because the field of river restoration is still developing and largely experimental, a formal adaptive management approach (Figure 1) is needed to promote and facilitate learning from current restoration efforts. An adaptive management process will allow the AFRP, project proponents, and the scientific community to evaluate and update the models and methods used to develop and implement restoration projects. Subsequent projects can then take the information learned and be revised or redesigned to be more effective and instructive.

Developing and maintaining support from stakeholders and the public and increasing the credibility of restoration programs are other benefits of using an adaptive management approach in the design and implementation of restoration projects. Identifying the goals

and objectives of the process in advance and having a panel of recognized scientific and technical experts provide critical but constructive review of projects will help foster this support and credibility.

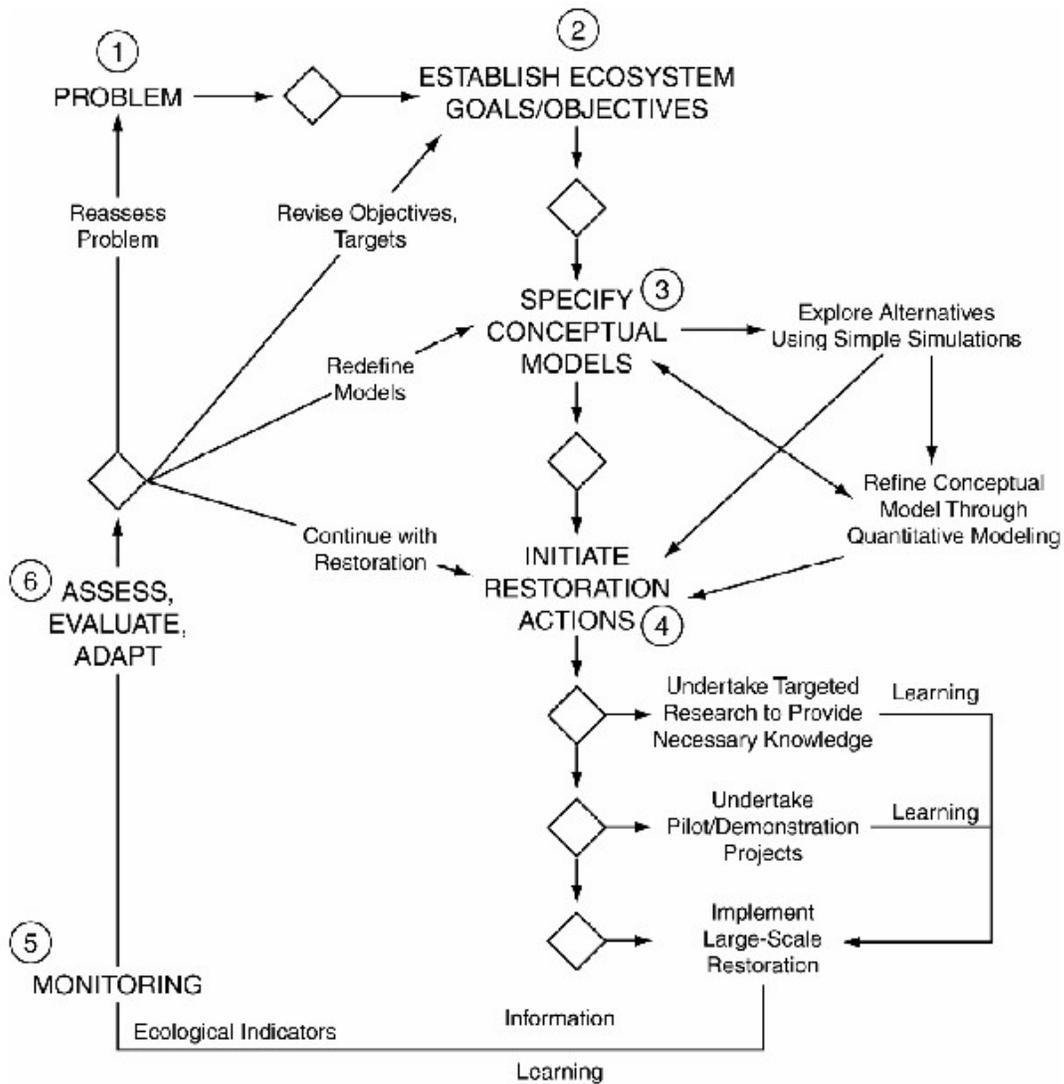


Figure 1. Diagram of the Adaptive Management Process (taken from CALFED's Bay-Delta Program Revised Draft February 1999 Strategic Plan for Ecosystem Restoration).

## **PROJECT DESCRIPTION**

### **Overview**

ICE will work with the Contract Manager, restoration program staff from the AFRP, and restoration project proponents, to establish and conduct the Forum. Specifically, ICE will:

- Help define and develop the Forum process,
- Recruit and establish the Panel to provide scientific and technical input to the Forum,
- Organize and facilitate three Forum sessions, and
- Coordinate and compile notes from the Forum sessions and the formal input from the Panel into written products.

### **Forum Process**

ICE will work with the Contract Manager, restoration program staff, and project proponents to help identify and establish the need, objectives, expectations, and products of the Forum and define how the products of the Forum will be used by the project proponents and restoration programs.

In addition, ICE will help the Contract Manager and project proponents compile information packets about each restoration project to be reviewed by the Forum. The packets will include a statement of the problem, identification of the ecosystem goals and objectives of the restoration project, presentation of a conceptual model, and descriptions of the project's design, implementation strategy, and monitoring programs.

The conceptual model will be central to placing all aspects of the project in an adaptive management context. ICE may consult with key members of the CALFED Interim Science Board to help frame the needs and expectation for the conceptual models, but in general the models should help to:

- Describe linkages among key ecosystem components and the principal cause and effect pathways for the system within which intervention and investigation is to occur (this should include a synthesis of past and ongoing research, monitoring and restoration efforts),
- Frame the proposed restoration intervention in the context of hypotheses and objectives of the intervention,
- Identify uncertainties and alternative hypotheses related to the intervention,
- Assess efficacy of monitoring strategies for addressing project objectives and identified uncertainties.

Other material that will be included in the packets will be information on the practical aspects of the restoration project such as the planning process used to design the project and built-in assumptions, constraints, and outstanding issues relevant to the project.

### **Panel of Scientific and Technical Experts**

ICE will work with AFRP, and possibly CALFED staff, to identify the necessary expertise, qualifications, and backgrounds of the Forum's Panel and then recruit Panel members. The Panel members will be considered to be experts among peers in their respective disciplines (e.g., restoration ecology, fish biology, hydrology, geomorphology, and engineering) and they will be well practiced and published. Panel members will be recruited primarily from academia, and will not be directly connected to or vested in the project or its outcome.

Depending on the success and duration of the Forum, it is anticipated that Panel members will participate for at least one year, attend three Forum sessions, and review three restoration projects. Panel members will receive modest honoraria, travel costs, and per diem for their participation. If the Forum continues there will likely be the need to rotate some Panel members. ICE will attempt to maintain some continuity of the Forum and the Panel members to help the process evolve smoothly.

### **Forum Sessions**

ICE will organize all logistical aspects of three, two-day Forum sessions. ICE will assemble and disseminate all packets of information relative to the Forum process. Panel members and other Forum participants will be well-informed on their charge and have all project information well in advance of the session so that little time will be spent organizing themselves during the Forum. A Forum Chair will be selected in advance of the first session to assist with the flow of the session and to serve as a leader among Forum members and as a contact between Forum members and the ICE Project Manager.

Each two-day Forum session will cover one restoration project. Day one will include a series of briefings, presentations by project proponents, and discussions between Panel members, other Forum participants, and the project proponents (all of which should build from the project information packets assembled and reviewed in advance of the Forum). The ICE Project Manager will facilitate all Forum sessions. The AFRP Contract Manger will participate in all Forum sessions and may help facilitate or assist where needed. The second day of each session will be a site visit to the restoration project site and/or other relevant sites.

### **Forum Products**

The ICE Project Manger will coordinate with the AFRP to write up the results of each Forum session. The written products will include notes from the Forum sessions and formal input from the Panel members that address Forum review objectives and questions. The written products will build from the discussions in the Forum sessions

and be structured to provide feedback that fits within the adaptive management process framework.

After the third Forum session, the ICE Project Manager will work with Forum Chair to synthesize and write up a general set of comments and recommendations relative to a common class of projects. The intent is to improve future project efficacy and to address key uncertainties associated with this class of projects. This could include recommendations for different implementation and monitoring approaches among systems to maximize the information gained. Also, because the Forum is anticipated to continue and develop, the ICE Project Manager will work with the Forum Chair and project proponents to make recommendations for improving future Forum sessions.

## **WORK TO BE PERFORMED**

### **Task 1 - Project Management and Administration**

- 1.1 Provide all technical and administrative services as needed for contract completion; monitor, supervise and review all work performed; and coordinate budgeting and scheduling to assure that the contract is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.
- 1.2 Ensure that the contract requirements are met through completion of quarterly status reports submitted to the Contract Manager by the 10<sup>th</sup> of the month following the end of the calendar quarter (March, June, September, and December) and through regular communication with the Contract Manager. The progress reports shall describe activities undertaken and accomplishments of each task during the quarter, milestones achieved, and any problems encountered in the performance of the work under this contract. The description of activities and accomplishments of each task during the quarter shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task completed for the purpose of calculating invoice amounts.
- 1.3 At the completion of this project and prior to final payment, the Project Director shall fill out and provide a project survey form to the Contract Manager.

Task Products: Quarterly Progress Reports, Subcontract Documentation, Project Survey Form.

### **Task 2 - Help Define and Develop the Forum Process**

- 2.1 Meet and confer with Contract Manager to establish an understanding of the Forum objectives and process. Select Year 1 projects.
- 2.2 Meet and confer with restoration project proponents to determine expectations and credible processes for the Forum. Establish Year 1 schedule.

- 2.3 Confer with Contract Manager and project proponents and other appropriate parties and identify disciplines and individuals to be recruited for Panel of technical and Scientific experts. Establish candidate list.

Task Products: List of Year 1 Projects, Year 1 Forum Schedule, Candidate List of Panel Members.

### **Task 3 - Recruit Panel of Scientific and Technical Experts**

- 3.1 Establish honoraria fee in cooperation with Contract Manager.
- 3.2 Contact candidates. Secure confirmed participation.
- 3.3 Deliver instructions to Panel members. Reconfirm participation. Recruit additional Panel members if needed.

Task Products: Final List of Panel Members.

### **Task 4 - Conduct Forum Sessions**

- 4.1 Make all logistic arrangements for three Forum sessions, including site visits. Assist Panel members with personal travel arrangements.
- 4.2 Assemble all necessary review and instruction material for distribution to Panel members and other Forum participants. Distribute packets of material.
- 4.3 Assist Panel members in preparation for Forum sessions.
- 4.4 Facilitate and record Forum sessions, including site visits.

Task Products: Forum Packets, Forum Sessions.

### **Task 5 - Coordinate and Compile Forum Products**

- 5.1 Summarize Forum session notes and distribute them to the Contract Manager and Panel members.
- 5.2 Coordinate formal written input from Panel members, including setting deadlines for contributions.
- 5.3 Assemble all written input from Panel members and Forum participants. Prepare written products.
- 5.4 Distribute written products to Panel members and Contract Manager for final review.
- 5.5 Integrate review comments from Panel members and Contract Manager into final written products for each Forum session.

5.6 Coordinate with the Forum Chair to synthesize and write up a general set of comments and recommendations relative to a common class of projects.

5.7 Distribute written products.

Task Products: Forum Session Notes, Forum Session Reports, Forum Final Report.

**TENTATIVE SCHEDULE OF COMPLETION DATES\***

<b>TASKS AND TASK PRODUCTS</b>	<b>DUE DATE</b>
<b>Task 1 – Project Management and Administration</b> 1.2 Quarterly Status Reports 1.3 Project Survey Form	1.2 Mar., June, Sept., and Dec. 10 <sup>th</sup> . 1.3 June 30, 2002
<b>Task 2 - Help Define and Develop the Forum Process</b> 2.1 List of Year 1 Projects 2.2 Year 1 Schedule 2.3 Candidate List of Panel Members	2.1 Oct. 6, 2000 2.2 Nov. 17, 2000 2.3 Nov. 17, 2000
<b>Task 3 – Recruit Panel of Scientific and Technical Experts</b> 3.3 Final List of Panel Members	3.3 Jan. 31, 2001
<b>Task 4 Conduct Forum Sessions</b> 4.4 Session 1 Session 2 Session 3	Session 1: May, 2001 Session 2: Oct., 2001 Session 3: Mar., 2002
<b>Task 5 – Coordinate and Compile Forum Products</b> 5.1 Forum Notes, Session 1 Forum Notes, Session 2 Forum Notes, Session 3 5.5 Forum Report, Session 1 Forum Report, Session 2 Forum Report, Session 3 5.7 Forum Final Report	Session 1: Jun, 2001 Session 2: Nov, 2001 Session 3: Apr, 2002 Session 1: Oct. 2001 Session 2: Mar., 2002 Session 3: June, 2002 5.7 June 30, 2002

\* All due dates assume a project starting date of October 1, 2000. Due dates will be adjusted accordingly if project start date is different than October 1, 2000.