

## Chapter 2 – Priority for this Proposal Solicitation Package: Understanding the Effects of Previously-Funded Restoration Actions

### ***What is in this chapter?***

This part of the document describes the kinds of projects for which proposals are being solicited, including some especially desirable project features.

### ***What kinds of projects are priorities?***

The priority of this solicitation is monitoring and evaluation of restoration actions, or groups of restoration actions, previously funded through ERP solicitation processes or by directed actions. These prior restoration actions may have been funded through the CALFED Bay-Delta Program or by the CVPIA's Anadromous Fish Restoration Program, Anadromous Fish Screen Program, or Habitat Restoration Program. A complete list of these projects, including their sponsors, locations, and key features, can be downloaded from the PSP website: <https://solicitation.calwater.ca.gov>. Proposals that seek funds for activities other than monitoring and evaluation of ERP and CVPIA restoration actions will not be considered through this PSP.

We seek monitoring and evaluation projects that can help the ERP and its restoration partners to continue learning:

- How well are restoration actions attaining their objectives? How are ecosystems responding to multiple restoration actions in local areas? Are harmful ecosystem stressors, such as disrupted hydrology, poor water quality, or invasions by nonnative species, reduced? Are ecosystem processes and functions recovering? What measures of project performance indicate the ecosystem's response?

### **Monitoring and Adaptive Management**

Adaptive management is a foundation of the CALFED Bay-Delta Program. In the ERP, adaptive management means managing natural systems to ensure improvement or recovery, while increasing our understanding of how those systems work. Future management actions can then be revised or refined in light of information generated from previous actions and activities.

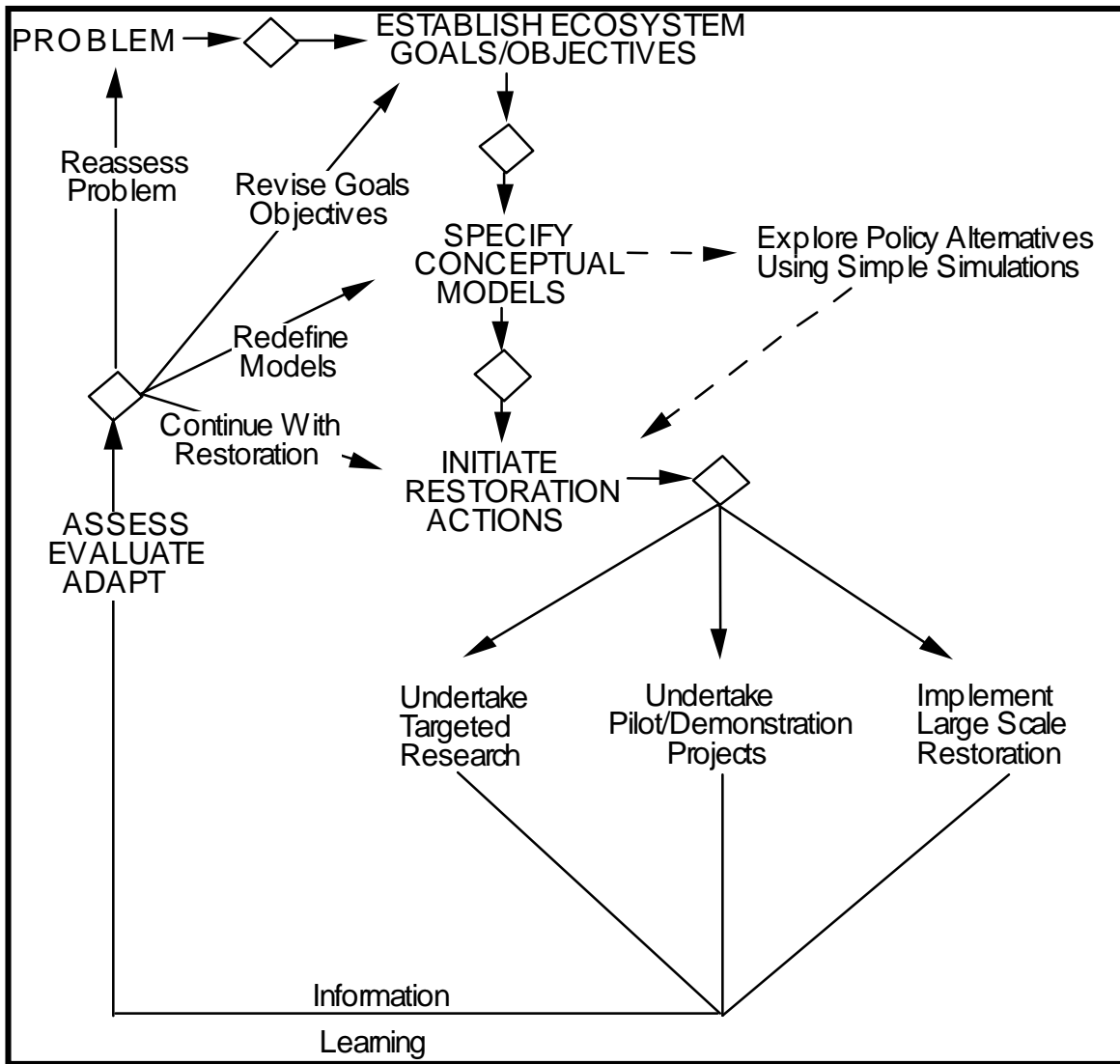
Adaptive management begins by defining the problem to be addressed and selecting goals and objectives for your action. Your understanding of how the affected ecosystem operates is documented in a "conceptual model" that describes what is known about the system and lays out your assumptions about it, uncertainties about which too little is known to be confident, and hypotheses about the ecosystem that your project will test.

If too much is unknown, you may need to begin with research to learn more so that you can more confidently assess whether your project will achieve its objectives. If uncertainties about how the system works are fewer, a pilot project that tests hypotheses about how a restoration action may turn out could be appropriate. Full scale restoration is best when prior research and pilot scale projects make you reasonably confident of achieving a restoration project's objectives.

Because each project is conducted as an experiment, monitoring to assess results and evaluate assumptions and hypotheses is essential. It provides information that is the basis of the adaptive management process. When monitoring results are reported, future projects can build on experience gained from recent actions.

Figure 1 depicts the adaptive management process. More information can be found in Section 2.0 of the *Draft Stage 1 Implementation Plan* and the *Strategic Plan for Ecosystem Restoration's* Chapter 3.

Figure 1. Adaptive Management Process



- How much progress has been made towards the objectives of the Ecosystem Restoration Program and the Multi-Species Conservation Strategy?
- What adjustments to prior restoration actions are needed to better achieve their objectives? Were the ecosystem restoration problems that these actions were intended to address accurately defined?
- What new information or understandings are resulting from restoration actions that may lead to adjustments in our understanding of Bay-Delta ecosystems?

Monitoring of several types may be appropriate:

- **Trends.** Tracking status and trends of environmental variables in ecosystems where restoration is occurring to determine whether conditions are achieving desired objectives.
- **Implementation.** Evaluations of how well a restoration action achieves the objectives listed in the project's proposal.
- **Effectiveness.** Assessments that relate restoration actions' implementation to changes in ecosystem processes or species abundance and diversity.
- **Model Validation.** Investigation of the causal relationships between ecosystem structure and functions and restoration actions.

Monitoring and evaluating outcomes in ecosystems where the ERP has undertaken its most significant restoration actions is especially important. These are: Clear Creek, Butte Creek, the Sacramento River, the Cosumnes River (including adjacent areas in the eastern Delta), the Tuolumne River, the Merced River, the North Delta, and San Pablo Bay, especially the Napa and Petaluma rivers. These areas include the greatest numbers of ERP-funded restoration actions and represent key investments of the program.

Another especially high priority is monitoring and evaluation that assess and compare outcomes of similar restoration actions, such as a group of actions to restore tidal marshes, meandering main stem rivers, or Central Valley tributaries.

Monitoring and evaluation that provide information about how key species, such as salmon or steelhead, have been affected by restoration projects are also important. The Multi-Species Conservation Strategy lists these key species, for which the CALFED Bay-Delta Program has established a goal to recover the species within the CALFED ERP ecological management zones. These are often referred to as "big R" species. Information needs include status and trends in the species' populations, or changes in habitats that support them or processes and stressors that affect them.

Monitoring and evaluation that assess an ecosystem's cumulative response to several restoration actions, continuation of monitoring initiated with previously-awarded ERP or CVPIA grants, or new studies intended to fill gaps in prior monitoring are also appropriate.

Projects should help inform ecosystem management by synthesizing data, drawing conclusions, and reporting results to appropriate audiences, including decision makers, resource managers, stakeholders, researchers, and others.

Other features we seek are:

- **Multi-Institutional Initiatives.** Projects that combine (1) current monitoring of restoration action outcomes or ecosystem status and trends, (2) universities or other research institutions talented in synthesizing and evaluating information, and (3) agencies or organizations responsible for managing important ecosystems.

- **Durable Partnerships.** Projects likely to endure beyond the term of an ERP grant, because they establish readily replicated monitoring and evaluation processes, make full use of ongoing data-gathering programs, and build partnerships capable of attracting funding from multiple sources over time.
- **Joint Fact-Finding.** Projects that involve stakeholders and others in evaluating and reporting results in ways that lead to shared understanding about ecosystems and restoration action outcomes.
- **Interdisciplinary Understanding.** Projects that draw fully upon experts in physical and environmental sciences and other disciplines needed to understand restoration action outcomes and the associated ecosystem processes.
- **Program Coordination.** Projects that, where feasible, produce results readily integrated with those of other long-term monitoring efforts, such as the Interagency Ecological Program, the CVPIA's Comprehensive Assessment and Monitoring Program, the Surface Water Ambient Monitoring Program, the San Francisco Bay integrated regional wetland monitoring program, or endangered species recovery programs.
- **Useful at various scales.** Investigations whose results are useful to resource management at various scales: regions, watersheds, or local project area.

No one project can have all these attributes. Projects should incorporate them consistent with their proponents' needs and capabilities. Projects that combine these features appropriately and efficiently are a priority.