
Fiscal Year 1998 Activities

The following sections provide supplemental information for the fiscal year 1998 cost matrix.

I. ECOSYSTEM QUALITY

Habitat Acquisition and Restoration

These activities will fund habitat acquisition and initiate habitat restoration to conserve and enhance natural ecosystem processes throughout the Bay/delta ecosystem. Three major habitat/restoration concepts are:

- Acquire key habitat from willing sellers to preserve ecosystem values and future opportunities for restoration
- Initiate restoration and enhancement projects on newly acquired and existing habitat
- Conduct research, development, monitoring, demonstration, and pilot projects to provide better information to guide and improve future actions

Effective restoration will provide spawning, nesting, rearing, foraging, brooding and cover habitat, increase food chain productivity, and restore natural hydrologic patterns to enhance natural processes and assist in recovery of species of concern. Habitat restoration is the foundation of the Ecosystem Restoration Program Plan. The activities and actions described below will preserve existing habitat, retain options to restore habitat, and initiate restoration in a manner that will preserve future options for improved, cost-effective restoration through adaptive management. Research, development and demonstration projects are key to long-term restoration success. Acquisition and restoration activities will be coordinated with other state, federal and private efforts. Without full funding, some opportunities and options may be lost, and recovery of special status species may be delayed.

The Habitat Acquisition and Restoration Program includes eight activities. The first of the eight activities is not targeted to specific practices or regions of the Bay-Delta ecosystem.

I-a. Acquisition of Key Properties and Habitat Restoration in Partnership with Others for Fish and Wildlife

This activity will fund acquisition of existing habitat and restorable lands from willing sellers, new and continuing restoration, development of partnerships, and the design and implementation of demonstration projects. The activity will be designed to maximize opportunities, coordination and effective use of information within the adaptive management program. Without full funding, some opportunities to acquire and restore valuable habitat may be lost.

Total FY '98 Funding Request: \$47 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: (1) USFWS, (2) USDA, (3) COE, (4) NFWF, (5) USBR, (6) USEPA, and perhaps others. Potential State funding through Proposition 204 (Category III).

Key actions: Would acquire from willing sellers 15,000 to 30,000 acres in fee and/or easements for fisheries, waterfowl and other wildlife habitat and/or initiate restoration and demonstration projects on existing and newly acquired lands. The potential habitats could include expansion of National Wildlife Refuges, freshwater tidal marshes, slough channels on shallow islands, floodplain and meander corridors, floodplain wetlands, shaded river and riparian woodlands, and others as appropriate. These actions could be conducted within the Delta, San Pablo/Suisun Bays, and the Sacramento and San Joaquin watersheds.

I-b. Refuge and Sacramento and San Joaquin Rivers Meander Belt Expansion

This targeted activity will fund acquisition of meander belt habitat through actions such as expansion of the National Wildlife Refuge System within the Bay-Delta watershed. This habitat is needed to ensure viable key habitats within the Bay-Delta system. Without full funding, some opportunities to acquire meander belt habitat may be lost.

Total FY '98 Funding Request: \$8 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: USFWS and perhaps others. Potential State funding through Proposition 204 (Category III, Sac Valley Habitat Measures) or appropriation to implement SB1086 Program.

Key actions: Would acquire 2,000 to 6,000 acres of key habitat from willing sellers and/or initiate restoration on existing and newly acquired lands. Some examples of potential habitat acquisition and restoration are:

Acquire, from willing sellers, land and/or easements within existing meander corridors along the mainstem Sacramento River.

Expand existing National Wildlife Refuges.

Initiate studies regarding the feasibility of reconfiguring major Sacramento River bypasses and managing for various habitat types; for example, floodplain wetlands along the Colusa Drain, or spawning and rearing habitat enhancement and establishment of riparian woodlands in the Yolo bypass.

Design and implement demonstration projects to restore meander corridors and floodplain wetlands along the Sacramento River.

Design and implement demonstration projects to restore shaded river habitat and

riparian woodland habitat on the mainstem Sacramento River, tributaries and bypasses.

Design and implement demonstration projects to restore natural channel functions within reaches of the Sacramento River tributaries adversely impacted by gravel mining.

Study the feasibility of restoring the meander belt of the lower San Joaquin River.

I-c. Develop or Purchase Wetlands in the Delta

This targeted activity will fund acquisition of wetland habitat within the Delta. Without full funding, some opportunities to acquire Delta wetland habitat may be lost.

Total FY '98 Funding Request: Potential Federal Category III participation varies⁴. Potential State funding through Proposition 204 (Category III).

Key actions: Would acquire 1,000 to 3,000 acres of wetlands from willing sellers and/or initiate restoration on existing and newly acquired lands. Some examples of potential habitat acquisition and restoration are:

Design and implement demonstration projects restoring freshwater tidal marshes and slough channels on shallow islands, especially in the eastern, central and northwestern Delta, the west shore of the Sacramento River, and the lower San Joaquin River.

Acquire from willing sellers lands and/or easements and restore floodplain wetlands in the eastside Delta tributary watersheds.

Acquire from willing sellers lands and/or easements in the western and/or central delta to preserve opportunities for long-term restoration of freshwater tidal marshes, slough channels and other desirable habitat types.

I-d. Delta and Tributary Modifications for the Improvement of the Environment (relating to Habitat Restoration and Protection Associated with Project and Non-Project Levees)

This targeted activity will restore shallow riparian and shallow water in-Delta habitat along levees. Without full funding, restoration of habitat and recovery of species of concern may be delayed.

⁴ Federal participation of \$20 million for Category III is proposed for FY 1998 (USBR and NMFS)

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Category III).

Key actions: 10 to 30 miles of levee-associated habitat will be restored, and associated habitat inland will be protected.

I-e. Sacramento River Habitat Improvement

This targeted activity will restore habitat associated with Sacramento River Levees. Without full funding, restoration of habitat and recovery of species of concern may be delayed.

Total '98 Funding Request: \$11 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: COE and perhaps others. Potential State funding through Proposition 204 (Category III, Sac Valley Habitat Measures) or appropriation to implement SB1086 Program.

Key actions: 2 to 5 miles of river levee-associated habitat will be restored when levee repairs are required and/or priority vegetation restoration throughout the levee system will be provided. These could include restoration of habitat, setback levees or other appropriate actions.

I-f. Delta Islands and Levee Improvements

This targeted activity will develop aquatic habitat associated with waterside levee banks on Western delta islands, analysis of subsidence controls and levee seismic evaluations will include habitat considerations, and dredge materials will be reused to restore aquatic habitats. Without this funding, some opportunities to improve delta islands and levees, and recovery of species of concern, may be delayed,

Total FY '98 Funding Request: \$3 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: USGS and perhaps others. Potential Federal Category III participation varies⁴. Potential State funding through Proposition 204 (Category III).

I-g. Watershed Management for Habitat Enhancement

This targeted activity will use watershed management techniques for habitat enhancement, and benefits in control of non-point source pollution will be obtained. Without full funding, recovery of species of concern may be delayed.

Total FY '98 Funding Request : \$2 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: NCRS, EPA, and perhaps

others. Potential State funding through Proposition 204 (Watershed rehabilitation).

I-h. Reconnaissance, Feasibility, Design and Environmental Documentation for Habitat Restoration and New Projects

This targeted activity will provide assistance for evaluation and design of restoration options and for necessary environmental documentation. Without full funding, some delays in implementation of habitat restoration may occur and recovery of species of concern may be delayed.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Category III, Sac Valley Habitat Measures).

Fish Screening and Passage

Aquatic life in the Bay-Delta and its tributaries suffers direct mortality by diversion of water into water supply systems, and spawning and other habitat is inaccessible because of structures located in channels and streambeds. This program would modify or remove existing structures to reduce mortality, increase access to spawning habitat, and facilitate fish passage. The initial phase of the program will emphasize research and development, demonstration and pilot projects, and adaptive management to ensure that long-term improvements are as effective and cost-efficient as possible. Fish screening and passage activities will be coordinated with other state, federal and private efforts.

Without this program, mortality and loss of habitat will continue at levels that could cause continued decline in species of concern or delay their recovery. Fish screening and passage improvements will also increase the effectiveness of habitat acquisition and restoration activities.

I-i. Fish Ladders and/or Removal of Barriers to Improve Fish Passage at Key Locations

This activity will allow key fish species to pass existing barriers and reach new habitat. Without full funding, direct mortality of species of concern and poor access to suitable habitat may continue, and recovery may be delayed.

Total FY '98 Funding Request: Potential Federal Category III participation varies⁴. Potential State funding through Proposition 204 (Category III, CVPIA State Match, or Sac Valley Habitat Measures).

Key actions: 2 to 5 fish ladders will be built, and/or barriers will be removed where direct mortality or migration delays can be reduced, and previously inaccessible stream channels will be made available for spawning.

I-j. Improve Fish Screening throughout the Bay-Delta System to Reduce Losses of Delta Resident and Migratory Fish Species

This activity will improve or eliminate unscreened or inadequately screened diversions which cause mortality of species of concern. Without full funding, direct mortality of species of concern may continue for a longer period.

Total FY '98 Funding Request: \$10 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: USBR and perhaps others. Potential State funding through Proposition 204 (Category III, CVPIA State Match, or Sac Valley Habitat Measures).

Key actions: 5 to 10 of the highest priority diversions (the highest priority 5 percent of unscreened or inadequately screened diversions) will be screened, or diversions will be consolidated or relocated to reduce fish losses. Some examples of fish screening projects are:

Initiate first phase of program to install fish screens on Delta, Sacramento River and San Joaquin River water diversions, and consolidate and/or relocate diversion sites where feasible and effective.

Design and implement demonstration projects to replace low diversion dams with "fish friendly" facilities, and remove obsolete dams and other obstructions where appropriate on the Sacramento River and its tributaries.

I-k. Reconnaissance, feasibility, design and environmental documentation for fish passage/screening projects

This activity will contribute to necessary studies and design of fish passage and screening projects throughout the Bay-delta system. Without full funding, passage and screening projects may be delayed, or projects may not be as effective as possible.

Total FY '98 Funding Request: Potential Federal Category III participation varies⁴. Potential State funding through Proposition 204 (Category III, CVPIA State Match).

I-l. Isolate and/or Remove Gravel Pits and Related Debris Along Rivers to Improve Fish Passage

Design and implement demonstration projects to restore natural channel functions within reaches of San Joaquin River tributaries adversely affected by gravel mining.

Total FY '98 Funding Request: Potential Federal Category III participation varies⁴.

I-m. State Cost-share of Fish and Wildlife Restoration Measures Required by Section 3406 of CVPIA

Proposition 204 authorizes the State of California to provide matching funds for CVPIA authorized improvements to the Bay-Delta ecosystem.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (CVPIA State Match).

Exotic Species Management

Exotic (introduced) species are an important but often undesirable component of the Bay-Delta ecosystem. Introduced species can alter habitat, crowd out native species, and compete with or feed on species of concern. Many undesirable species which have not yet become established in the Bay-Delta have the ability to do so, so exotic species management has an element of protection as well as control. Without full funding, exotic species will continue to limit the recovery of species of concern at unnecessary levels.

I-n. Improve Control of Exotic Species Which Threaten the Recovery and Biodiversity of Native Species

This activity will improve control of exotic species which threaten the recovery of native species.

Total FY '98 Funding Request: Potential Federal Category III participation varies⁴. Potential State funding through Proposition 204 (Category III).

Key actions: Develop a program for exotic species management. Some examples of exotic species management include:

Control exotic species by initiating and enforcing ballast discharge requirements in the Delta, Suisun Bay and San Pablo Bay.

Remove invasive introduced vegetation in the Delta.

Monitoring of Ecosystem Health

This program will begin comprehensive monitoring of the Bay-Delta ecosystem and the effectiveness of restoration activities. Monitoring will be coordinated with other state and federal activities.

I-o. Comprehensive Monitoring of Bay-Delta Ecosystem Health and the Effectiveness of Restoration Activities (Adaptive Management)

This activity will provide the information needed to implement a sound program of adaptive management.

Total FY '98 Funding Request: \$1 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: USBR and perhaps others. Potential State funding through Proposition 204 (Category III) or IEP funding.

II. WATER QUALITY

Degraded water quality diminishes the quality of aquatic habitat and can have direct toxic effects on fish and wildlife species. Municipal and industrial users pay substantial costs to reduce undesirable constituents in delivered water supplies, and water quality can affect crops and agricultural production costs. Examples of potential activities include land conversion, implementation of habitat-enhancing farming practices, and improved range management practices. Programs will be designed to encourage participation by willing landowners and to maximize multiple benefits. Without full funding, improvements in water quality would be delayed, leading to continued negative effects on the aquatic ecosystem, agriculture and urban drinking water costs and quality.

II-a. Conduct a Watershed Management Pilot Program for Water Quality Improvement

This pilot program will be used to determine the long-term watershed management program and its use in improving water quality for all water users. Pilot programs will be established, and information will be used to design future watershed management programs.

Total FY '98 Funding Request: \$10 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: USDA (NCRS), EPA, and perhaps others. Potential State funding through Proposition 204 (Watershed rehabilitation).

Key actions: Approximately 20 percent of high priority watershed management pilot programs will be completed, primarily on undammed tributaries. Watershed management for water quality improvement would include erosion control, wetlands protection and other appropriate actions.

II-b. Real Time Water Quality Management

This activity will establish real time water quality management by direct monitoring and response to water quality variables.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Drainage management).

II-c. Pollutant Source Control to Reduce Toxics Discharges to the Ecosystem from Point and Non-point Sources

Pollutant source controls form the foundation for the Water Quality Common Program. This activity will target high-priority sources to reduce toxic discharges in the Bay-Delta system.

Total FY '98 Funding Request: \$11 million to be provided either through a CALFED Bay-Delta Program Trust or distributed to individual agencies: EPA and perhaps others. Potential State funding through Proposition 204 (Drainage management - DFA).

Key actions: Approximately 10 percent of high priority source control actions will be completed.

II-d. Land Conversion and/or Other Methods to Help Control Water Quality from Agricultural Drainage

Agricultural drainage water often carries undesirable constituents such as dissolved solids, sediments, and agricultural chemicals. This activity will use land conversion and/or other methods to help improve water quality from agricultural drainage.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Drainage management - DFA).

II-e. Pilot Program for Underground Detection of Agricultural Drainage

This activity will establish a pilot program to determine the feasibility, costs and effectiveness of underground detection of agricultural drainage for water quality improvement.

Total FY '98 Funding Request : Potential State funding through Proposition 204 (Drainage management - DFA).

II-f. Construct Wetlands Wastewater Management Treatment for Portions of Existing Discharges to the Estuary

Wetlands wastewater treatment provides a proven technology to reduce wastewater discharges to improve water quality. This activity will establish a pilot program to reduce the amount of pollutants discharged into the Bay-Delta system from wastewater treatment plants. Results will be used to determine long-term use of wetlands treatment.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Clean water and Drainage management - DFA).

Key actions: A pilot program will be established with the goal of reducing pollutants from approximately 10 to 15 million gallons per day of discharges.

III. LEVEE SYSTEM VULNERABILITY

Poor levee conditions increase the risk of catastrophic levee failure and flooding of delta islands. Levee conditions have deteriorated over time due to natural and man-caused factors, and the protective value of levees has declined as delta islands have subsided with oxidation and erosion. Flooding of delta islands creates risks to human life and economic values associated with island land uses are lost unless and until islands are reclaimed. The costs of reclaiming flooded islands may be prohibitive. Without full funding, the existing level of risk of flooding will continue or increase.

III-a. Delta Levee Improvements/Habitat Restoration and Habitat Protection

This activity will make repairs to high priority levees.

Total FY '98 Funding Request : Potential State funding through Proposition 204 (Delta levees).

Key actions: Approximately 3 to 6 miles of high priority levee repairs will be completed.

IV. WATER SUPPLY RELIABILITY

The reliability of municipal, industrial and agricultural water supplies from the Bay-Delta is diminished by the natural variability of precipitation and the need for more water for ecosystem restoration. This program will increase water supply reliability by increasing water use efficiency, groundwater recharge and water reclamation. These activities reduce dependence on Bay-Delta supplies, increase reliability, and allow more flexibility for dealing with future water supply needs. Without full funding, water supply reliability will continue to be unnecessarily diminished.

IV-a. Technical Planning and Support to Water Districts for Water Use Efficiency Measures

Technical planning is needed for water districts to improve their water use efficiency. This activity will provide funding and technical expertise in water efficiency analysis and implementation of improvements. Without full funding, water use efficiency improvements may be delayed.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Water supply reliability).

IV-b. Financial Assistance for Water Use Efficiency Measures and Groundwater Recharge

Reduced demand by improved efficiency effectively increases supply, and groundwater recharge is an established and cost-effective means of ensuring supplies when surface water supplies are less available. This activity will provide financial incentives for efficiency and recharge improvements. Without full funding, water use efficiency and groundwater recharge measures may be delayed.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Conservation).

Key actions: Incentives for continued implementation of existing urban Best Management Practices and agricultural Efficient Water Management Practices will be provided.

IV-c. Low Interest Loans/Grants for Water Reclamation

Reclamation of wastewater is an established and effective source of water supply in California. This activity will provide funding for reclamation of wastewater.

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Water recycling).

Key actions: Facilities for reuse of 1,000 to 3,000 acre-feet per year will be provided, the extent of reuse depending on the intended use of the reclaimed water.

IV-d. Studies, Designs and Environmental Documentation for Projects to Increase Water Supply Reliability and Opportunities

This activity will provide for design and implementation studies of methods to increase water supply reliability in California. Without full funding, implementation of water supply improvements may be delayed, and water supply reliability will continue to be unnecessarily diminished

Total FY '98 Funding Request: Potential State funding through Proposition 204 (Water supply reliability).