

Early Implementation Actions, Funded or Recommended with Potential Delta Smelt Benefits (54 projects, \$91 m)

Restore Habitat (\$71 million funded)

— Flexibility & Conflict

- Prospect Island Restoration and Monitoring
- Fern-Headreach Aquatic Habitat Conservation
- Rhode Island Floodplain Mgt. And Habitat Restoration
- Cache Slough Habitat Enhancement
- Hill Slough West Habitat Demo Project
- Yolo Bypass Habitat Restoration Study
- Twitchell Island Restoration
- Sherman Island Levee Habitat Demonstration
- Tyler Island levee protection and habitat restoration pilot
- Franks Tract Wetlands Habitat Restoration
- In-channel Island Restoration Demo Project
- Jepson Prairie Restoration of SRA and Perennial Grassland
- Liberty Island Acquisition
- Decker Island Tidal Wetland Enhancement
- Bay Point Shoreline Restoration Plan

- Stone Lakes NWR Land Acquisition
- Cosumnes River Acquisition, Restoration, Planning and Demonstration
- Cosumnes Preserve Valensin Acquisition
- McCormack-Williamson Tract's Wildlife Friendly Levee Management Program
- Cosumnes Floodplain acquisition and restoration
- East Delta Corridor Habitat Study- Mokelumne River Feasibility Study
- East Delta Corridor Habitat Study- Cosumnes River Feasibility Study
- East Delta Habitat Corridor- Georgiana Slough (1999 recommended \$1.1 m)

- Hamilton Wetland Restoration
- SF Bay Area wetlands ecosystem Goals Project
- Petaluma Marsh Expansion Project – Marin County
- South Napa River Wetlands Acquisition and Restoration Program
- Benecia Waterfront Marsh Restoration
- Cullinan Ranch Restoration
- Biological Restoration and Monitoring in the Suisun Marsh/North SF Bay Ecological Zone
- South Napa River Tidal Slough and Floodplain Restoration Project (\$1.5m, plus 1999 recommended \$1.5m)
- Tolay Creek Restoration
- South Napa River Wetlands Acquisition and Restoration

Restore Ecological Processes (\$1 million)

- Delta Sediment Monitoring

Reduce Stressors (\$19 million)

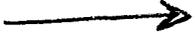
- Hastings Tract Fish Screens, Studies and Construction
- Suisun Marsh Fish Screens, Studies and Construction
- Develop Method to Simulate Fish Entrainment
- Introduced Species Research Program
- Culture of Delta Smelt
- Effects of wetlands restoration on methyl mercury levels
- Impacts of Pesticides on Aquatic Invertebrates
- Contaminant Effects on Smelt
- Evaluation of Selenium Sources, Levels and Consequences in the Delta
- Monitoring of Delta Contaminants
- Integrated Pest Management in Suisun Bay Project
- Watershed Restoration Strategy for the Yolo Bypass
- Alhambra Creek Watershed CRMP Program
- Barker Slough Watershed Management Project
- Biological Integrated Orchard Systems Program and Biological Integrated Orchard Systems (BIOS) – Pesticide and Fertilizer Reduction
- Assessment of Eco. and Human health impacts of Mercury in Bay-Delta watershed
- Preventing Exotic Introductions from Ballast Water
- Develop fish screen criteria with fish “treadmill” (1999 rec. \$1m)
- Assess pesticide effects on fish and food resources (1999 rec. \$1.8 m)
- Study dissolved organic carbon release from Delta wetlands (1999 rec. \$1.4m)
- Evaluate chinese mitten crab effect on benthic community in Delta, as well as ecologic and economic effects (1999 rec. \$0.3m) .
- Evaluate introduced zooplankton and clams on B-D food web (1999 rec. \$0.7m)
- Purple Loosestrife prevention, detection, and control (1999 rec \$0.1 m) ^{6.0 m}

Stage 1 Implementation Actions with Potential Delta Smelt Benefits

Restore Habitat

- Flood Conveyance improvements in lower San Joaquin River System, including Paradise Cut, San Joaquin River, Old River, and Middle River, per FEET Report, 1997
- Restore Tidal Marsh and Riparian Habitats along Georgiana Slough
- Study and Implement North Delta ecosystem and flood control improvements including creation of shallow water, wetland, and riparian habitats
- Evaluate and Restore Tidal Wetlands in Suisun Marsh and on Van Sickle Island
- Provide Needs and Opportunities Analysis for Improving Ecosystem Restoration and Flood Bypass Habitat for the Yolo Bypass area
- Frank's Tract Habitat Restoration
- ERP Levee Relocations, Create Waterside Berms, Promote wetlands, riparian habitat compatible with levees
- Restore Selected In-Channel Islands
- Implement Flood Plain and Habitat Restoration Actions based on Recommendations of the San Joaquin River & Tribs Comprehensive Flood Control Study

Restore Ecological Processes

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- Implement the Environmental Water Account
 - Continue to provide water for San Joaquin River flows to meet WQ, VAMP, ESA, and other flow objectives through water purchases/transfers from willing sellers.
 - Flexibility provided by SWP 10,300 cfs permitted capacity, with appropriate regulatory constraints
 - Implement Joint Point of Diversion
 - Integrated Storage Investigation and Implementation: Surface and Groundwater Management, Stage 1 Investigations and Actions
 - Study: Evaluate Recirculation Benefits and Impacts
 - Supplement existing monitoring programs
 - Manage existing physical barriers in Delta to restore channel hydraulics for habitat
 - Close Delta Cross Channel per WQCP 1995 and USFWS AFRP 1995 Nov.-Jan. as conditions allow
 - Construct and operate the Head of Old river Barrier in south Delta
 - Water Transfers Program Stage 1 Actions
 - Water Use Efficiency Program Stage 1 Actions

Reduce Stressors

- Screen Small Diversions in the Delta and Suisun Marsh as Appropriate
- Plan, Design & Construct CVP test Tracy Fish Facility, 500 cfs screen, plus Sorting, Holding, Transport, and Release
- Plan, Design, & Construct new SWP Clifton Court Forebay Intake, including fish screens and salvage facilities, with goal of incrementally achieving average daily capacity 10,300 cfs by year 12: New Screened Intake with Gates and LH Pumps
- Feasibility and Environmental study of SWP/CVP interties between export facilities and canals
- Incrementally advance screening of CVP exports,
- Implement and Monitor Permanent operable south Delta barriers
- Veale Tract Drainage Discharge Relocation Feasibility Study and Environmental Documentation
- Feasibility Study: Management, Relocation and/or Treatment of RD 800 Drain Discharge
- Implement On-Farm drainage management measures
- Implement regional irrigation efficiency improvement programs to reduce saline drainage
- Evaluate/Implement as Appropriate Release of saline agricultural drainage water during high flow periods
- Cache Creek Mercury Source Control Study ✓
- Clear Lake upper watershed mercury remediation actions
- Barker Slough Watershed Restoration ✓
- Sacramento River Mercury Source ID and Control/Remediation Study
- Diazinon and chlorpyrifos Assessment, Education, and Improved Management
- Implement other Water Quality Program Stage 1 actions not noted above
- Implement Watershed Management Program Stage 1 actions

Long-Term CALFED Bay Delta Program Actions with Potential Delta Smelt Benefits

Restore Habitat

- Restore habitat types critical to delta smelt restoration in the Delta and adjacent areas. Habitat types include Delta sloughs, fresh emergent tidal wetlands, mid-channel islands and shoals, riparian and riverine aquatic, and tidal perennial aquatic. Long-term targets for enhancement (existing public lands and easements, management agreements, acquisition of easements, and land purchases) are shown in attached Table _____.
- Modify levee maintenance practices in cooperation with willing levee reclamation districts to promote levee and berm habitat values, including financial support for implementation
- Reduce or eliminate predator habitats around in-channel structures.

Restore Ecological Processes

- Expand and refine the Environmental Water Account
- Continue to provide water for San Joaquin River flows to meet WQ, VAMP, ESA, and other flow objectives through water purchases/transfers from willing sellers.
- Provide for ERP March and May flows for Sacramento River
- Provide for ERP late April to early May ERP flows for San Joaquin River in dry to above-normal years
- Allow first significant fall/winter flow to pass through Delta by limiting water diversions for 10 days
- Use flexibility provided by SWP 10,300 cfs permitted capacity, with appropriate regulatory constraints to reduce stress on delta smelt during critical spring period.
- Continue use of Joint Point of Diversion
- Integrated Storage Implementation: Surface and Groundwater Management, complete studies, design, construct and operate facilities to achieve water management and habitat goals
- Implement recirculation of SWP, CVP pumping, if appropriate
- Full implementation of Water Transfers Program
- Full implementation of Water Use Efficiency Program
- Full implementation of Watershed Management Program
- Continue expanded system monitoring and modify as required for adaptive management
- Increase Bay-Delta Aquatic Foodweb primary and secondary productivity to 1960's level. To achieve this, restore streamflow, floodplain inundation, Delta hydraulics, tidal wetlands and sloughs, and riparian habitats.
- Reduce net velocities in selected channels through channel enlargement or flow constrictions at critical points, and increase flow in other channels, for a net improvement in hydraulics for habitat

- Manage existing physical barriers in Delta to restore channel hydraulics for habitat
- Close Delta Cross Channel per WQCP 1995 and USFWS AFRP 1995 Nov.-Jan. as conditions allow
- Operate the Head of Old River Barrier in south Delta
- Construct a network of channels in Yolo Bypass to connect Putah Creek, Cache Creek, and potentially, Colusa Drain to Delta to allow fish passage after flood flows. Also reduce flow constrictions in Yolo Bypass

Reduce Stressors

- Continue to extend screening of Small Diversions in the Delta and Suisun Marsh as Appropriate
- Complete new SWP Clifton Court Forebay Intake, including fish screens and salvage facilities, average daily capacity 10,300 cfs: New Screened Intake with Gates and LH Pumps
- Implement if feasible SWP/CVP interties between export facilities and canals
- Complete screening of CVP exports, either at Tracy or through intertie with CCFB
- Complete Veale Tract and RD 9800 drainage discharge relocation/treatment if feasible
- Continue to expand implementation of on-farm drainage management measures
- Continue to expand implementation of regional irrigation efficiency improvement programs to reduce saline drainage
- Implement as appropriate release of saline agricultural drainage water during high flow periods
- Implement mercury source control and remediation actions
- Implement Barker Slough Watershed Restoration
- Implement Diazinon and chlorpyrifos Education, and Improved Management
- Implement other Water Quality Program actions not noted above
- Implement Watershed Management Program actions not noted above
- Modify land management practices on 50,000 ac of urban and ag lands to reduce toxic agents through reduced applications and use of natural wetlands to break down toxics
- Reduce hydrocarbons discharged from refineries into estuary
- Follow DFG dredging guidelines, limit dredging in delta channels, especially near sensitive sites; find alternative borrow sources for levee rehab and stockpile levee materials
- Fund and implement additional inspections at CA border stations to reduce influx of exotics
- Fund and implement improved ballast water management techniques
- Implement annual, large scale exotic plant eradication programs to reduce non-natives to less than 1% of surface area in impacted aquatic zones, as well as eradication of false bamboo, eucalyptus, non-native cordgrass, etc.
- Evaluate commercial harvest of water hyacinth