

## Alternative B

# New Storage to Improve Delta Flow

### Overview

This alternative will include new surface storage upstream and downstream of the Delta combined with improved system operation in order to improve flows for fisheries, reduce entrainment, and increase water supply reliability and flexibility. Moderate habitat restoration will complement the reduction in entrainment and improvement in flow to increase fish populations. Aggressive source control measures improve water quality, and moderate levee improvements are made to reduce system vulnerability.

*New storage improves reliability and flow conditions*

This alternative will provide substantial increases in water storage capacities, both upstream and downstream of the Delta. Downstream of the Delta, storage of 0.5 to 1.0 MAF capacity will be constructed to integrate operational flexibility in the pattern of diversions from the Delta, upstream storage regulation, and water use patterns in all service areas dependent on Delta water supplies. Upstream of the Delta, storage of similar capacity will be constructed to expand abilities to capture peak flood flows during periods when not needed for instream uses and to manage releases of those flows to the Delta for anadromous fisheries, water quality, and water supply benefits.

*New water storage is added upstream and downstream*

The permitted capacity of existing export pumps will be expanded to their full physical capacity, but only during windows when fish are less vulnerable during high flood runoff periods (e.g., in late fall and early winter). Real-time monitoring will be expanded to guide pumping operations, allowing pumping to be curtailed when vulnerable fish are present. Increased flexibility in diversion capabilities, increased downstream storage, and shifts in storage windows for all upstream reservoirs will allow better avoidance of fish entrainment without reducing water supply reliability and availability. This alternative will rely on the existing configuration of Delta channels for water supply conveyance. A variety of actions will be studied and implemented to reduce adverse effects of salinity in San Joaquin River inflow, to maintain water levels and circulation in south Delta channels, and to reduce the recycled salt load to the San Joaquin Valley.

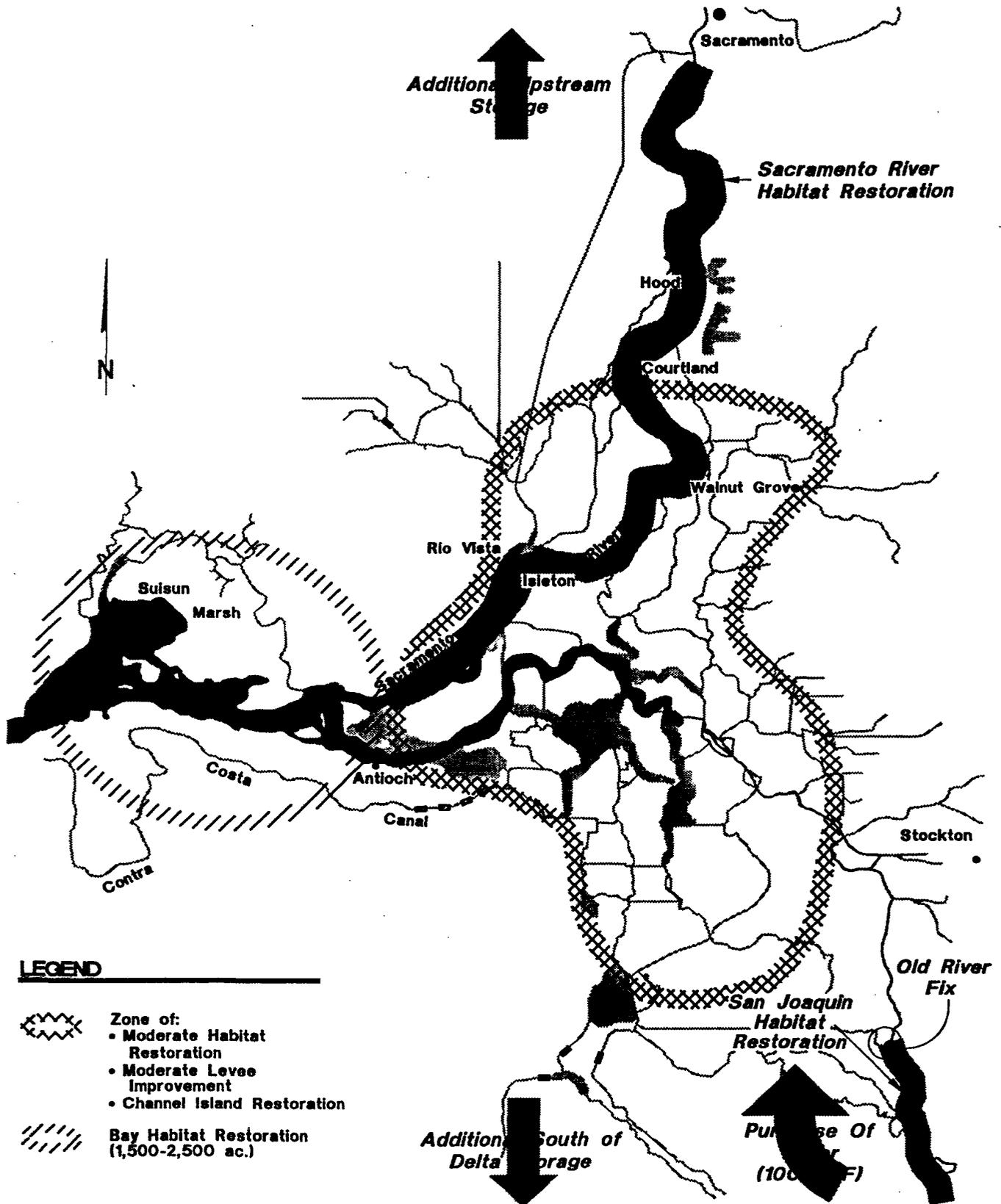
*System operation is improved*

This alternative will provide moderate levels of habitat along the Sacramento River downstream of Sacramento and will restore channel features on the San Joaquin River to improve survival of anadromous fish. Moderate habitat restoration in the Delta will include shallow riverine and riparian habitats to improve conditions for Delta native and anadromous fish. Moderate levels of shallow tidal habitat will be developed near Suisun Bay to benefit migrating salmon and provide spawning and rearing areas for Delta smelt.

*Moderate habitat restoration upstream, in the Delta, and near Suisun Bay*

# New Storage to Improve Delta Flow

## Alternative B



### LEGEND

-  Zone of:
  - Moderate Habitat Restoration
  - Moderate Levee Improvement
  - Channel Island Restoration
-  Bay Habitat Restoration (1,500-2,500 ac.)

Approximately 100 TAF of water will be obtained or developed in the San Joaquin River basin for release as spring pulse flows to improve transport of San Joaquin River fish through the Delta. Fish screens will be installed on high and moderate priority unscreened diversions throughout the Bay-Delta system and fish guidance facilities will be operated at the head of Old River and at key locations on the Sacramento River to guide fish away from the central Delta. Ecosystem restoration actions will be guided by a strategy of adaptive management.

*Water development or purchases will improve fish transport*

Expanded demand management, conjunctive use, and groundwater and surface banking will improve full-system operational flexibility that can further reduce fish entrainment by providing more Delta flow in the critical spring period for fish (February-June). This additional Delta flow will be provided through a combination of methods that will be implemented on a priority basis. These methods include reducing consumptive use of Delta water during those months by reducing demand and switching to alternative supplies in all service areas that are dependent upon Delta water supplies; dedicating some newly developed storage to providing Delta outflow; conjunctively using groundwater basins to provide spring Delta flows; implementing conservation and reclamation actions in ways that allow shifting the timing of the releases of conserved water into the Delta during the spring; encouraging temporary land fallowing during drought periods; and making upstream reservoir storage operational changes that will provide more direct inflow to all parts of the Delta during critical spring periods.

*Water bank, improved demand management help balance supply and demand*

Delta and tributary water quality will be improved through aggressive source control efforts to reduce and manage discharges from agricultural operations and urban areas throughout the Bay-Delta system. Enforcement of source control regulations will be expanded and implementation of Best Management Practices for salinity and pesticide residues will be recommended (e.g., retention of agricultural drainage). Retirement of marginally-productive agricultural lands that contribute substantially to instream water quality problems in the San Joaquin River will be expanded, improving water quality while reducing water demand. Measures to reduce the total salt load transported to the San Joaquin Valley will be implemented. Pollutants in San Joaquin River inflow will be diluted using water purchased or developed in the San Joaquin River basin.

*Aggressive pollutant source control improves water quality*

The vulnerability of the Bay-Delta system will be reduced through implementation of a comprehensive Delta Protection Plan. The plan will guide the stabilization or improvement of certain Delta levees to increase protection, the maintenance of levees, and implementation of an emergency response program to address levee failure. Under this alternative, stabilization of levees would receive moderate emphasis, while maintenance and emergency response would receive modest emphasis.

*Comprehensive Delta Protection Plan*

New storage and improved system operations increase water supply reliability and flexibility while improving flow conditions for fish. Levee rehabilitation that incorporates habitat improvements can simultaneously reduce system vulnerability, increase ecosystem quality, and improve water quality.

*Actions provide multiple benefits*

## Potential Sequencing

**Stage 1.** Implementation will begin with the core actions.

*Core Actions*

**Stage 2.** Actions implemented during Stage 2 of this alternative will include establishment of a permanent drought water bank, implementation of a moderate demand management program, high priority habitat restoration actions, and installation of high-priority fish screens. Implementation of a comprehensive Delta protection plan will begin. Additional San Joaquin River water (100 TAF) will be developed or acquired for environmental uses. Stage 2 will include retirement of approximately 70,000 to 100,000 acres of marginally productive agricultural lands in the San Joaquin Valley. Also during Stage 2, expanded real-time monitoring will be implemented to allow the Delta export pumps to be operated at full capacity during periods when fish are less vulnerable and to minimize entrainment of sensitive fish during these periods. Groundwater banking and conjunctive use programs in the San Joaquin Valley and other service areas dependent on Delta water will be expanded.

*Demand  
management and  
habitat  
restoration*

**Stage 3.** In Stage 3, downstream water storage will be constructed to further increase capabilities to manage both Delta exports and upstream reservoir storage operations to avoid entrainment effects while maximizing the utility of Delta water. Habitat restoration actions and fish screen installations will be implemented. Stabilization of levees would receive moderate emphasis, while maintenance and emergency response would receive modest emphasis. An additional 200,000 to 300,000 acres of marginally productive agricultural lands in the San Joaquin Valley will be retired during this stage.

*Downstream  
storage, San  
Joaquin flows*

**Stage 4.** Stage 4 will consist of constructing water storage upstream of the Delta to maximize flexibility in managing flows through the Delta for supporting all beneficial uses. Operational standards for this storage facility will specify the sharing of stored water among environmental and water supply uses. For example, stored water will be used to improve upstream anadromous fish habitat, manage water quality in the Delta, and provide more flexible water supplies.

*Upstream  
storage*

# Alternative B - New Storage to Improve Delta Flow

## Potential Sequencing

