

Alternative H

Chain of Lakes Conveyance

Overview

This alternative will substantially restructure the configuration of the Delta. Export water supplies will be diverted from the Sacramento River into a series of Delta islands that will be flooded to provide storage and conveyance to the south Delta pumping plants. New screened diversions will reduce entrainment, thus increasing water supply reliability.

Flooded islands provide storage and conveyance

Currently, limitations on fish entrainment (take limits) are set to avoid jeopardizing fish populations. When these limits are approached, diversions are curtailed or stopped, creating a high degree of uncertainty for water users. If water project diversions are relocated to a less sensitive location and screened to protect fish, entrainment will be reduced and fish populations will increase. Reduced entrainment will provide greater water supply reliability.

New diversion location protects fish

A chain of contiguous islands from the Sacramento River in the North Delta to the existing SWP and CVP pumps will be converted into water storage reservoirs. Each reservoir will be connected to adjacent reservoirs by large inverted siphons (pipes). At its northern end, this "chain of lakes" will be fed by a screened diversion from the Sacramento River. Other screened diversions will feed the chain of lakes at various points in the north Delta. The chain of lakes, which will be isolated from Delta channels, will convey water to the SWP and CVP pumps. The chain will also deliver water to some Delta water users. At any given time, the diversion or diversions that will least impact fish will be used to fill the reservoirs. At times when fish could be most impacted, diversions will be reduced or stopped, and water users will draw on stored water. The reservoirs may be filled and emptied several times each year. Organic soils will be removed or sealed from the reservoirs to avoid potential water quality problems with the stored water.

A chain of islands will be connected into water storage reservoirs

This alternative will restore moderate amounts of habitat in the Delta and upstream on the Sacramento River and will restore channel features on the San Joaquin River to improve survival of anadromous fish. In addition, the conversion of Delta islands into storage reservoirs is designed to incorporate substantial aquatic and terrestrial habitat improvements. Extensive levee improvements associated with the lakes will incorporate habitat improvements. A moderate level of shallow tidal habitat will be developed near Suisun Bay to benefit migrating salmon and provide spawning and rearing areas for Delta smelt. Ecosystem restoration actions will be guided by a strategy of adaptive management.

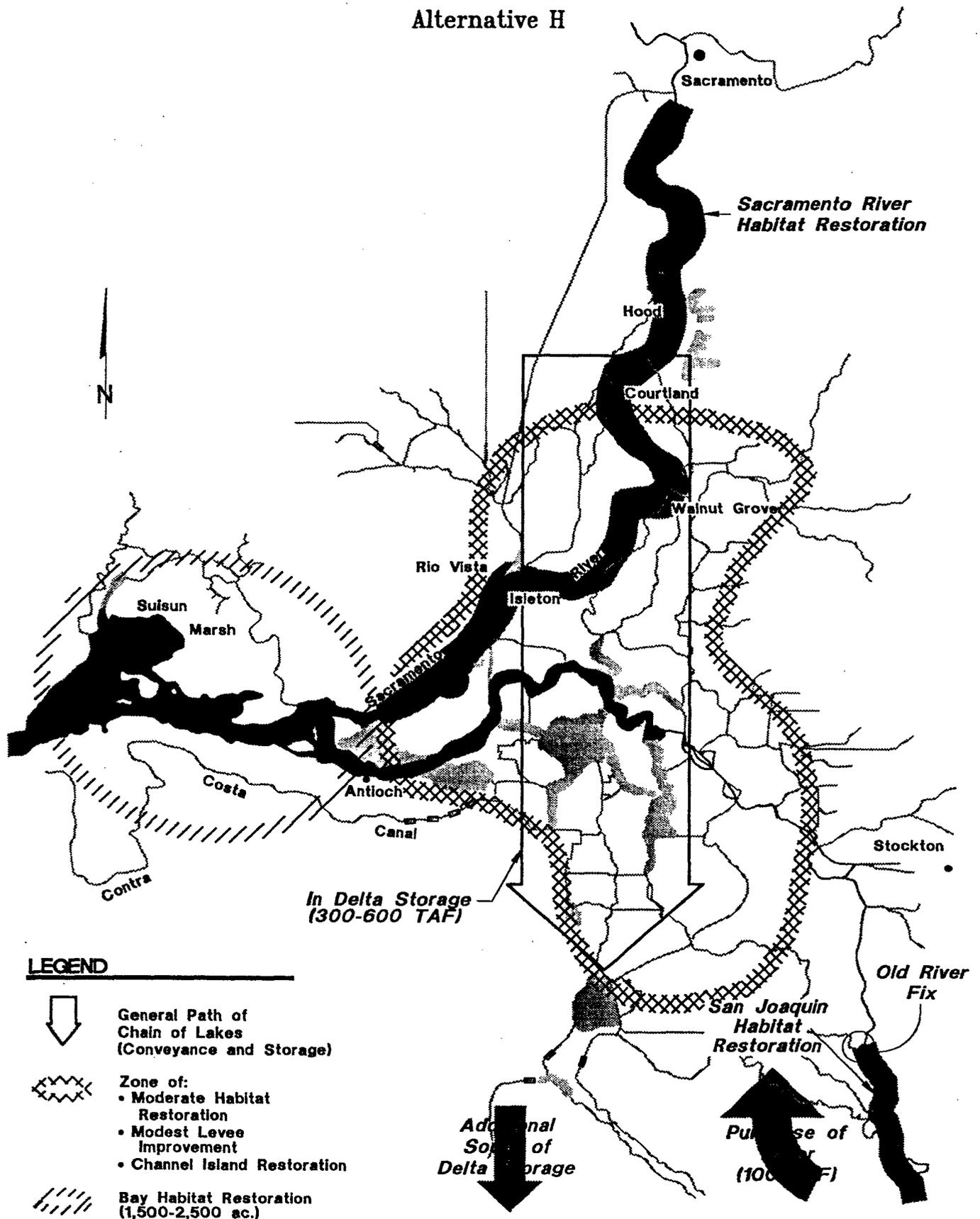
Moderate habitat restoration upstream, in the Delta, and near Suisun Bay

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

Comprehensive Delta Protection Plan

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levees, and implementation of an emergency response program to address levee failure. Under this alternative, stabilization of levees would receive modest emphasis, while maintenance and emergency response would receive high emphasis.

With the SWP and CVP diversions relocated, fresh water inflow to the central and south Delta will be reduced, threatening water quality. Therefore, this alternative includes a supplemental water supply developed in the San Joaquin basin or purchased from San Joaquin basin water users. This supplemental supply will increase the flexibility of environmental releases of water, improving water quality in the central and south Delta while improving fish transport through the Delta.

Additional San Joaquin flows protect water quality and improve fish transport

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. 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

This alternative establishes a long-term drought water bank and provides incentives for additional land fallowing during drought years to improve supply reliability. Expanded conjunctive use and groundwater banking will improve operational flexibility and will further reduce fish entrainment by allowing some direct consumptive water use and upstream storage operation in all service areas dependent on Delta water supplies to be shifted away from the spring (February-June) period. Moderate levels of demand management including water conservation, water reclamation, and land retirement will be used to reduce water shortages for existing water users and provide some additional Delta outflow during drier years.

Water bank, improved demand management help balance supply and demand

Relocating export diversions can reduce entrainment, improve the quality of export supplies, and increase water supply reliability. Levee restoration 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 would 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, a moderate demand management program, groundwater banking and conjunctive use, 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

Demand management and high priority habitat and levee improvements

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.

Stage 3. In stage 3, one island near the south Delta export pumps will be converted for storage of water. Additional increments, habitat restoration actions, fish screen installations, and source controls for water quality improvement will be implemented. Stabilization of levees would receive modest emphasis, while maintenance and emergency response would receive high emphasis.

Construct island storage near south Delta pumps

Stages 4 to 6. During stages 4 to 6, additional islands, connected by siphons, will be converted to water storage. The final stages will include habitat restoration actions and fish screen installations to an extensive level of implementation.

Additional islands converted to storage

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Potential Sequencing

