

Chapter 6.0 Recreation

Background

CALFED's Preferred Program Alternative may have potentially significant effects on recreation. The CALFED ROD outlined mitigation measures that will reduce potential effects of the Preferred Program Alternative implementation on recreation. The mitigation measures included incorporating project-level recreation improvements and enhancements, providing access to waterfront areas and island edges, creating new day-use boating and camping areas, etc. The May 2002 Planning Study Report on Environmental Evaluations contained an evaluation of the recreation proposed for the DW Project from a public perspective. The report concluded that the recreation proposed by DW Properties was not appropriate for a publicly owned and operated project. Staff recommended changes to the proposed recreation based on the Sacramento-San Joaquin Delta Recreation Survey (DPR 1997) which identified unmet recreational needs in the Delta. Findings of the survey were used to identify unmet needs that could be accommodated on the islands and levees of the In-Delta Storage project, and could be managed as public opportunities. In addition to providing project-level recreation improvements, the changes recommended included providing access to islands edges and creating new day-use boating areas.

Davis-Dolwig Act

In addition to the guidance provided by the CALFED ROD, the planning and development of recreation facilities associated with state water projects⁵ are guided by the Davis-Dolwig Act and Resources Agency Order 6 dated March 6, 1963, entitled "Planning, Development, and Operation Recreation and Fish and Wildlife Facilities at State Water Project." The Davis-Dolwig Act (Act) (Water Code Section 11900 et seq.), enacted in 1961, declares that recreation and the enhancement of fish and wildlife resources are among the purposes of state water projects and acquisition of real property for such purposes be planned concurrently with the project. The Act applies to water storage projects constructed by the State or by the State in cooperation with the Federal government. The Act sets forth the responsibilities of DWR, Department of Parks and Recreation (Parks), Department of Fish and Game (DFG), the Department of Boating and Waterways (DBW), and the Wildlife Conservation Board as to planning, construction, and

⁵ The In-Delta Storage Project is being evaluated as part of the State Water Project and/or the Central Valley Project for the purposes of the State Feasibility Study.

operation of recreation facilities and fish and wildlife resources at state water projects. Under the Act, the General fund is to pay for such costs of fish and wildlife enhancement and recreation.

DWR's responsibilities under the Act include planning for recreation and for fish and wildlife preservation (mitigation) and enhancement, and acquiring land for such uses. The recreational features mentioned in the Act include campgrounds, picnic areas, water and sanitary facilities, parking areas, viewpoints, boat launching ramps, and any others necessary to make project land and water areas available for use by the public. DWR planning for public recreation use and fish and wildlife preservation and enhancement is to be part of the general project formulation activities and done in close coordination, consultation, and cooperation with Parks, DFG, Department of Boating and Waterways, and all appropriate federal and local agencies. DWR is to give full consideration to the recommendations provided by such other departments and agencies.

DWR planning described under the Act includes and is not limited to, the development of data on benefits and costs, recreation land use planning, and the acquisition of land. As appropriate for project formulation purposes, DWR would be responsible for preparing a report describing the project and, if the project is economically justified, requesting financing.

The Act requires that water supply beneficiaries pay for the fish and wildlife preservation (mitigation) costs of the state water project and that the State General Fund pay the costs of the benefits enjoyed by the general public, described as recreational development and fish and wildlife enhancements. Therefore, DWR must not include the costs of the development of public recreation or the enhancement of fish and wildlife in the prices, rates and charges for water and power (Water Code Section 11912). In other words, the costs of recreation and fish and wildlife enhancement are not reimbursable costs under the State Water Project long-term water supply contracts. Water Code Section 11913 declares the intent that such costs are to be paid from the State General Fund. In addition, Agency Order Number 6 states that the costs of performance of the respective responsibilities of DWR, Parks, and DFG under the Act is subject to the availability of funds.

Under the Act, Parks is responsible for the design, construction, operation, maintenance, and management of public recreation facilities at state water projects, except for boating facilities, which DBW is responsible for planning, designing and constructing. Parks must submit its plans for public recreation facilities to local government agencies that have jurisdiction over the area involved. Parks is authorized to enter into contracts with the United States, local public agencies, or other entities, to ensure maximum development of the recreation at state water projects. The design, construction, operation, maintenance, and management of such recreation facilities at

state water projects is subject to DWR approval to ensure they will not defeat or impair the orderly operation of the State Water Project for its other project purposes (water supply and power development).

Under the Act, DFG is to manage fish and wildlife resources at state water projects, including any such additional resources as are created by such projects, in a manner compatible with other project uses. DFG may enter into agreements with DWR to undertake or supervise fish and wildlife enhancement measures or facilities included in state water project plans for those measures or facilities, which are normally considered within the managerial or technical abilities of DFG.

Recreation and the Revised Habitat Management Plan

The recreation proposed for the In-Delta Storage Project was described in the In-Delta Storage Program Planning Study Report on Environmental Evaluations (CALFED 2002). Changes to the recreation plan may be made during the Subsequent EIR/EIS and ESA/CESA consultation process, and during discussions with Parks, DBW and local agencies. Potential conflicts may exist between the proposed hunting and sandhill crane use on the habitat islands. Boat dock placement should consider the existing special status plant populations on all levees. It should be possible to modify the recreation plan to accommodate both recreation and threatened and endangered species needs.

Chapter 7.0 Cultural Resources

Background

A substantial amount of previous cultural resource compliance work has been conducted for the Delta Wetlands Project. The previous cultural resource studies were conducted from 1988 - 1993 and were conducted in accordance with the requirements of Section 106 of the National Historic Preservation Act. Delta Wetlands Properties identified sensitive cultural resources on all the project islands. Significant archaeological sites exist within project lands on Bouldin Island, Bacon Island, and Holland Tract. Areas of sensitive soils potentially containing prehistoric human remains exist on Webb Tract and Holland Tract.

The identification of significant cultural resources and areas sensitive for prehistoric archaeological remains led to the 1998 *Programmatic Agreement Among the U.S. Army Corps of Engineers, California State water Resources Control Board, California State Historic Preservation Officer, Advisory Council on Historic Preservation, and Delta Wetlands Properties Regarding the Implementation of the Delta Wetlands Project* to ensure adequate treatment of historic properties. The 2002 In-Delta Storage Project Study Report on Environmental Evaluations built upon the programmatic agreement and recommended that DWR re-initiate Section 106 consultations, update the Programmatic Agreement (PA), re-survey Piper Sands and conduct data recovery excavations. The In-Delta Storage Project Study Report also acknowledged the need to develop a Historic Properties Management Plan (HPMP), as outlined in the PA, to mitigate the adverse effects of the project on historic properties and to address the management of cultural resources once the proposed project has been implemented. DWR and BOR agreed to have DW consultants prepare a HPMP that would serve the In-Delta Storage Project or the DW project, whichever proposal successfully went forward. DWR and BOR met with the DW consultants in the fall of 2002 to discuss the content of the HPMP; the draft HPMP (Wee et al. 2003) was completed in January 2003.

Historic Property Management Plan

The HPMP closely matches the 2002 In-Delta Storage Project Study Report recommendations with few variations. A comparison of the salient points is presented below.

Webb Tract

The 2002 In-Delta Storage Project Study Report recommended that the Piper Sands on Webb Tract be re-surveyed for archaeological resources prior to implementation of the Delta Wetlands project. Should archaeological sites be identified, they would require evaluation for significance.

The HPMP also recommends that a reassessment of these soils but, in addition to survey/surface examination, it calls for trenching of the Piper Sands to identify the presence of buried deposits and, more specifically, human interments. Trenching would focus on Piper Sands above sea level and it is proposed that 15 to 20 trenches, measuring between 3 and 10 feet long, be excavated to a depth of 10 to 15 feet below the surface. The HPMP further recommends that the Piper Sands be monitored for the possible exposure of human remains from erosion after the project has been implemented. Thus the HPMP proposes additional, but appropriate, assessment and monitoring measures in comparison to the In-Delta Storage Project Study Report.

Holland Tract

As at Webb Tract, the 2002 In-Delta Storage Project Study Report recommended that the Piper Sands on Holland Tract be resurveyed for archaeological remains and, should any sites be identified, that they be evaluated for significance. The Study Report also recommended that all previously-identified sites be revisited and that records for each site be updated. Even though two previously-recorded sites on Holland Tract have been determined ineligible for the National Register, due to the known presence of human remains at the sites, it was proposed that some form of mitigation be carried out at those sites prior to implementation of the Delta Wetlands project, if the sites could not be avoided. DWR continues to recommend this level of documentation.

The HPMP proposes somewhat less work for Holland Tract. The HPMP recommends that one site, CA-CCO-593, be monitored for the possible exposure of human remains after the Delta Wetlands project has been implemented.

Bacon Island

Given the presence of a Rural Historic District on Bacon Island, the 1998 PA and the 2002 In-Delta Storage Project Study Report recommended a number of measures to mitigate the effects of the Delta Wetlands project on the historic cultural resources. The only significant difference

between the In-Delta Storage Project Study Report and the HPMP pertains to the level of data recovery at the historic-era archaeological sites contained within the Historic District. The Study Report proposed that data recovery activities be conducted at each of the ten archaeological sites located there. The HPMP, on the other hand, proposes data recovery efforts at only six of the sites. This recommendation comes as the result of conducting minor shovel probes at the sites to determine the presence of a subsurface deposit, whereby a sufficient deposit was identified at six of the ten sites. Additional mitigation activities, such as recording the architectural features of the Historic District according to the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation: HABS/HAER Standards, the production of an educational documentary and a public education publication are consistent with the requirements of the PA and the recommendations of the In-Delta Storage Project Study Report.

Bouldin Island

One historic-era archaeological site on Bouldin Island has been determined eligible for the National Register of Historic Places. Both the 2002 In-Delta Storage Project Study Report and the HPMP recommend data recovery for this site.

The HPMP provides greater detail than the 2002 In-Delta Storage Project Study Report for conducting some required tasks (e.g, Native American consultation, activities related to unexpected archaeological finds, etc.), all of which is consistent with the requirements of the PA.

Chapter 8.0 Hazardous Materials

In 2002 the In-Delta Storage Project Planning Study Report on Environmental Evaluations, DWR staff provided results from a modified Phase I Environmental Site Assessment (ESA). Results from the Phase I ESA indicated that conditions on Bouldin Island, Holland Tract, Webb Tract and Bacon Island will require remediation before the islands can be used for either reservoir storage or habitat mitigation. Staff recommended a Phase II ESA to determine the extent that conditions on the islands require remediation and to establish state and federal liability for future cleanup and remediation.

DWR staff completed a Phase II ESA in the fall of 2003. The purpose of this Phase II ESA was to evaluate the nature and extent of suspected hazardous substance contamination at sites identified in the modified Phase I ESA. The Phase II ESA was performed in accordance with standards prescribed in American Society for Testing and Materials Designation E 1903-97 and DWR guidelines.

In the Phase II ESA, DWR Site Assessment staff collected a total of 77 soil samples at the sites. High levels of petroleum hydrocarbons, such as oil and grease, were detected at the vehicle and farm equipment maintenance facilities, especially in areas around or near fuel and lubricating oil tanks. Low concentrations of other potential contaminants, such as heavy metals, chlorinated pesticides, and organic solvents were also detected. However, in each instance, their levels never exceeded the Total Threshold Limit Concentrations as established in Title 22 of the California Code of Regulations.

Based on the results of the Phase II ESA sampling, DWR Site Assessment staff recommends further investigation of the identified “hot spot” areas to better delineate the extent of contamination. Further investigation may include more invasive subsurface soil sampling, surface water and groundwater sampling, and environmental fate studies for each of the contaminants of concern. DWR Site Assessment staff also recommends that any contaminated soil at or near water supply well sites be removed and properly disposed of, or remediated, depending on the extent of contamination.

Lastly, DWR Site Assessment staff recommends that all measures be taken to indemnify the State from any liability associated with future hazardous substance contamination or remedial actions associated with the natural gas wells that are present throughout the Site. At this time, these gas wells and the parcels on which they are situated may not be part of the land acquisition for the Project. Such measures may include establishing baseline soil and groundwater sampling

data for the properties surrounding the gas wells or inserting indemnification clauses in each of the proposed purchase agreements.

Methods and results from the Phase II ESA are provided in the Phase II Environmental Site Assessment draft report in Appendix E.

Chapter 9.0 Aquatic Resources

Nine listed or sensitive fish species occur in the In-Delta Storage Project area that could be affected by the project. The species include chinook salmon, delta smelt, splittail and Central Valley steelhead. A California Endangered Species Act Incidental Take Permit issued by the Department of Fish and Game, the U.S. Fish and Wildlife Service and National Marine Fisheries Service (NOAA Fisheries) biological opinions, and the State Water Resources Control Board Decision 1643 included provisions in the Delta Wetlands Project (DW) permit to protect them. In general, impacts could be adverse or beneficial. These are related to: changes in channel water temperature, dissolved oxygen concentrations, outflow and flow patterns, salinity and organic carbon, transport flows, increased entrainment of eggs and larvae, and changes in total mercury or methyl mercury concentrations in water and biota due to reservoir and habitat island operations.

DW Final Operations Criteria were developed to ensure that project operations do not jeopardize the continued existence of delta smelt, splittail, chinook salmon or Central Valley steelhead. Other species are also expected to benefit from the Final Operations Criteria. As long as the Final Operations Criteria are met, adverse impacts to listed fish species are considered less than significant. The 1997 DW Project fish screen design did not meet DFG 2000 Fish Screening Criteria. Therefore, the proposed DW design required modification to meet current criteria. The fish screens were redesigned to bring the screens into compliance with current standards that meet the restrictions in the Final Operations Criteria, biological opinions, and incidental take permit.

The delta smelt diversion criteria in D 1643 results in reduction of project yield. Details of operational runs for fisheries operations are given in Chapter 3 of the 2003 Operations Study Report. Recently, the California Farm Bureau Federation reached a settlement agreement in their lawsuit against the U.S. Fish and Wildlife Service when the Service agreed to complete a five year status review. The California Farm Bureau Federation claims that current delta smelt recovery criteria are based on unjustified abundance and distribution assumptions. Developing current size and distribution estimates for delta smelt abundance is difficult. Predicting the size and distribution of delta smelt abundance well into the future is an area of even more uncertainty. Any future negotiated changes in the criteria should be incorporated in the reservoir operations.

Additionally, further analysis is required to narrow down the uncertainty due to changes in the Dissolved Oxygen (DO) levels as a result of the project operations. Predicting DO levels for specific areas would require estimations of highly variable and complex biological dynamics.

Species in the Project Area

The In-Delta Storage project could have positive and negative effects on protected fish species in the Bay-Delta. According to the California Natural Diversity Database records, and species lists provided by USFWS and DFG, there are seven threatened or endangered fish species, two candidates for listing, and five species of special concern that could be in the project area. A list of these special status fish species is provided in Table 9.1. Brief descriptions of the life histories of these species and specific discussion on how the project could affect these species was provided in the In-Delta Storage Program Planning Study Report on Environmental Evaluations, May 2002. Additional fisheries impact analyses will be needed as changes in reservoir operations are proposed in project development. For example, a flow-through, circulation operation proposed for the reservoirs might change how the project could affect fish species in the channels surrounding reservoir islands. Increases in certain types of organic carbon in the surrounding channels could also prove beneficial to the species.

Table 9-1. Special status species for the In-Delta Storage Project

Common Name	Scientific Name	Federal Status	State Status
Winter-Run Chinook Salmon	<i>O. tshawytscha</i>	Endangered	Endangered
Spring-Run Chinook Salmon	<i>O. tshawytscha</i>	Threatened	Threatened
Late Fall-Run Chinook Salmon	<i>O. tshawytscha</i>	Candidate	Special Concern
Fall-Run Chinook Salmon	<i>O. tshawytscha</i>	Candidate	Special Concern
Central CA Coastal Coho Salmon	<i>O. kisutch</i>	Threatened	Endangered ^a
Central CA Coastal Steelhead	<i>O. mykiss</i>	Threatened	None
Central Valley Steelhead	<i>O. mykiss</i>	Threatened	None
Delta Smelt	<i>H. transpacificus</i>	Threatened	Threatened
Splittail	<i>P. macrolepidotus</i>	Threatened	Special Concern
Longfin Smelt	<i>S. thaleichthys</i>	Special Concern	None
Green Sturgeon	<i>A. medirostris</i>	Candidate	None
River Lamprey	<i>L. ayresi</i>	Special Concern	None
Kern Brook Lamprey	<i>L. hubbsi</i>	Special Concern	None
Pacific Lamprey	<i>L. tridentata</i>	Special Concern	None

^aNot included in the DFG Species List for In-Delta Storage

Fish Screens Design Coordination

DWR met with the Central Valley Fish Facilities Review Team (CVFFRT) on January 17, 2003 and on February 13, 2003 to solicit technical comments and suggestions on the proposed design and layout of In-Delta Storage project fish screening facilities. Technical experts from various resource agencies provided suggestions to improve the fish screen design and layout, which were incorporated into the plans. The CVFFRT recommended that a technical review committee on the In-Delta Storage Project fish screens be set up in later stages of the project. For specific information on the fish screens design refer to the In-Delta Storage Program Draft Engineering Investigations Summary, June 2003.

Shallow Water Habitat Impacts and Mitigation

The In-Delta Storage project includes strengthening levees by placing rock on the riverside of the reservoir islands to assure levee stability. Preliminary estimates are that levee protection measures could eliminate 80 acres of shallow water habitat from the perimeters of Bacon Island and Webb Tract. Mitigation cost estimates for the loss of shallow water habitat is 2 million dollars. Additional analysis will be conducted to determine the specific impacts to shallow water habitat once the levee protection measures and recreation development plans are refined. Also, DWR will consult and coordinate with resource agencies to develop a shallow water habitat mitigation strategy.

Chapter 10.0 Conclusions

Recommendations

- € Determine the implications of acquiring 10,003 acres of agricultural easements on the financial feasibility of the In-Delta Storage Project and the implementation of ERP actions in the Delta.
- € Develop the information required of state agencies under the Williamson Act (notice and findings).
- € Continue discussions on agricultural mitigation options with the DPC, DOC, Contra Costa County and San Joaquin County
- € Develop a mitigation plan for unavoidable impacts to special status plant populations, in consultation with DFG and USFWS.
- € Determine the quantities and types of wildlife habitats currently present on the Project islands.
- € Coordinate with wildlife agencies to determine the appropriate means of achieving endangered species acts compliance.
- € Investigate identified hazardous materials “hot spot” areas to better delineate the extent of contamination.
- € The proposed changes in the Project diversions and operations being different than the ones allowed in the SWRCB Decision 1643, a subsequent EIR/EIS would be required for any changes in environmental impact evaluations.
- € Due to their strategic location, the operation of the island reservoirs may contribute to an incremental improvement in habitat quality and availability for fish and other aquatic organisms inhabiting the Bay-Delta system. On the other hand, there may be adverse impacts in some areas. Fisheries impact analyses should be conducted for future changes in reservoir operations.
- € Organize a technical review committee for In-Delta Storage Project fish screens review during the preliminary and final design phases.
- € Coordinate with fishery agencies to determine the appropriate means of achieving endangered species acts compliance.

Mitigation Cost Estimates

A summary of the mitigation measures and costs estimates for the In-Delta Storage Project is given in Tables 10-1 and 10-2.

Table 10-1. Estimated Initial Environmental Mitigation and monitoring costs for the In-Delta Storage Project

Mitigation and Monitoring	Initial Cost
Purchase conservation easements (3,900 acres)	\$ 4,680,000
Cultural resources mitigation	\$ 945,000
Recreation	\$ 3,200,000
Environmental Site Assessment	\$ 135,000
Slough side mitigation	\$ 2,000,000
Habitat Island development and construction	\$23,490,653
Total Cost	\$34,450,653

Table 10-2. Estimated Annual On-Going Costs for Environmental Mitigation, Monitoring and Weed Control for the In-Delta Storage Project

Mitigation and Monitoring	Annual Costs
Habitat island and Fisheries monitoring and operations and maintenance	\$1,700,000
Cultural resources mitigation	\$10,000
Invasive weed control on reservoir islands	\$722,016
Recreation facilities operation and maintenance	\$265,000
Total annual costs	\$2,697,016

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