



IN REPLY REFER TO

United States Department of the Interior

BUREAU OF RECLAMATION

Lower Colorado Regional Office

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RECORD OF DECISION of the LOWER COLORADO REGION for the COACHELLA CANAL LINING PROJECT RIVERSIDE AND IMPERIAL COUNTIES, CALIFORNIA

I. Introduction

This document is the Record of Decision (ROD) of the U.S. Department of the Interior (DOI), Bureau of Reclamation (Reclamation), regarding the Preferred Alternative for implementing the proposed Coachella Canal (Canal) Lining Project (Project). The ROD is based on the findings of a National Environmental Policy Act (NEPA) review of the potential impacts of a range of Project alternatives, mitigation commitments, and other supporting data and information. A Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR), documents the results of the effects analysis of the proposed action and alternatives. The FEIS/EIR was filed with the Environmental Protection Agency (EPA), and its availability concurrently noticed in the Federal Register on April 27, 2001 (Statement No. FES 01-15). The joint FEIS/EIR presents an analysis of the environmental consequences of three action alternatives that meet the purpose of and need for the Project and a no action alternative. Reclamation is the lead Federal agency for NEPA purposes and the Coachella Valley Water District (CVWD) is the lead State agency for the California Environmental Quality Act (CEQA) process. The FEIS/EIR was prepared in accordance with NEPA, the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations Parts 1500 through 1508), DOI Policies, Reclamation's NEPA Handbook, and the California Environmental Quality Act (CEQA).

II. Decision

Reclamation has selected the Conventional Lining alternative as the agency Preferred Alternative for lining the Canal because it was found to be the most reasonable and feasible alternative, and because it best meets the purpose of and need for the action. The Preferred Alternative would be implemented by the installation of a concrete lining in the reaches of the Canal between siphons 7 and 14 and between siphons 15 and 32. (The reach between siphons 14 and 15 was previously lined.) Conventional construction methods, briefly described in Section IV, would be used, and they would be designed to allow construction of the concrete

lining under dry conditions.

The Preferred Alternative is also the environmentally preferable alternative which meets the intent of NEPA, in that it causes the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources.

III. Background

The Coachella Canal

The Coachella Canal began water delivery in 1949. Today, about 330,000 acre-feet (af) of Colorado River water are diverted to the Canal, and 285,000 af are delivered annually to CVWD users. During original construction, about 37 miles of Canal were lined. Beginning in 1980, another 49-mile section was lined under the authorization of Title I of the Colorado River Basin Salinity Control Act (P. L. 93-320). Finally, a one-mile reach (between siphons 14 and 15) was lined as part of an engineering demonstration project that began in 1991. The remaining unlined reaches, which comprise 33.2 miles between siphons 7 and 14 and siphons 15 and 32, are the focus of the proposed Project.

Annually, an estimated total of 32,350 af of water seeps through the unlined portions of the Canal. After completion of the Project, seepage through the lined portions would continue to occur at a rate of about 1,500 af per year (af/yr) along the 33.2-mile section. Seepage reduction would equal about 30,850 af/yr and is the net amount expected to be conserved with implementation of the Project.

Project Authorization

On November 17, 1988, Section 203, Title II, Public Law (P. L.) 100-675, (the Act), granted authority to the Secretary of the Interior (Secretary) to "construct a new lined canal or to line the previously unlined portions of the All-American Canal (AAC) from the vicinity of Pilot Knob to Drop 4 and its Coachella Branch from Siphon 7 to Siphon 32, or construct seepage recovery facilities in the vicinity of Pilot Knob to Drop 4 in order to reduce the seepage of water." Section 203 of the Act also authorized the Secretary to "implement measures for the replacement of incidental fish and wildlife values adjacent to the canals foregone as a result of the lining of the canal or mitigation of resulting impacts on fish and wildlife resources from construction of a new canal or a portion thereof. Such measures shall be on an acre-for-acre basis, based on ecological equivalency, and shall be implemented concurrent with construction of the works." This ROD addresses the proposed lining of the Coachella Branch only.

Section 204 (b) of the Act stipulated that conserved Canal seepage water be made available, subject to the approval requirement established in Section 203 (c)(3), for consumptive use by California Contractors [(California Contractors) - Palo Verde Irrigation District, Imperial

Irrigation District (IID), CVWD, and The Metropolitan Water District of Southern California (MWD)] within their service areas, according to distribution priorities established in the Seven Party Agreement of 1931.

Title I of the Act directs the Secretary to provide a supplemental water supply of 16,000 acre-feet per year (af/yr) to the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians (the Bands); the City of Escondido; Escondido Mutual Water Company; and Vista Irrigation District. A maximum quantity of 4,500 af/yr conserved by this Project may be transported to San Diego County through negotiated contractual arrangements with MWD for use by the Bands and/or Escondido and Vista entities. Transport and use of this water is independent of this Project and separate environmental compliance has or will be completed as appropriate.

Following execution of a future Settlement Agreement among the San Luis Rey Indian Water Rights Settlement Parties (SLR Parties), to be approved by the Secretary, a specific quantity of water conserved by the Project would be assigned to the DOI to facilitate implementation of Title I of the Act. After mitigation of habitat impacts, an amount of water equal to the remaining conserved water would then be available to the California Contractors in accordance with an existing priority system established among them in current Colorado water-delivery contracts and other allocation agreements.

California Environmental Quality Act Compliance

As the lead State agency for the CEQA process, CVWD completed all filing requirements for State agency review, issued a joint draft and final EIS/EIR for public review and comment, and held public comment hearings. On May 16, 2001, the CVWD Board of Directors certified the FEIS/FEIR and adopted a the Statement of Overriding Considerations and a Mitigation, Monitoring, and Reporting Program, that meet CEQA compliance requirements and State of California CEQA Guidelines (SCH Number 1990020408). Following certification of the FEIR, the CVWD Board of Directors approved the Project and directed CVWD officers to file a Notice of Determination (NOD) with the Imperial and Riverside County Clerks, and the State Office of Planning and Research (OPR) which was received on May 21, 2001. The MWD, a Responsible Agency, also filed a NOD with OPR that was received on September 9, 2001.

IV. Alternatives Considered

In the FEIS/EIR, Reclamation and CVWD identified and analyzed the effects from three action alternatives and a no-action alternative. For each action alternative, Reclamation and CVWD identified mitigation commitments to offset potential adverse effects to the environment. The alternatives examined in the FEIS/EIR are as follows:

No Action Alternative: Under this alternative, no action would be taken. The Canal would remain unlined, and approximately 32,350 af/yr of Colorado River water would continue to seep into the ground from the unlined reaches. An amount of water equal to the amount conserved would not be available for use by the California Contractors nor to facilitate implementation of Title I of the Act. Selection of the No Action Alternative would not meet the purpose of and need for the Project nor assist the State of California in attaining the goals of California's draft Colorado River Water Use Plan (California Plan), but it would not preclude other actions from being taken for this purpose.

Conventional Lining (Preferred Alternative): The Preferred Alternative is to line the existing canal using conventional construction methods while diverting water around or through each section, between siphons, permitting work to take place under dry conditions. To implement this process, the installation of an in-place barrier in the Canal would require either (1) diversion of Canal water through temporary bypass pipelines or channels around each earthen canal reach to be drained, permitting installation of a barrier under dry conditions, or (2) redirection of Canal water in each reach being lined through temporary cofferdams and/or sheet-piling, installed between siphons, also permitting installation of the barrier under dry conditions. The use of either option would depend on the physical characteristics of individual reaches and would not interrupt service to CVWD. Construction would be undertaken within the Canal, its embankments, maintenance roads and waste embankments within the Canal right-of-way which varies between 360 and 610 feet in width. A concrete batch plant (approximately ten acres), an equipment staging area (approximately five acres) and a sand and gravel quarry will be needed along with access in support of construction activities. Existing unpaved roads in other areas would be used for construction vehicle traffic.

Underwater Lining Alternative: The Canal would be lined, while it is in service, with a polyvinylchloride (PVC) impervious liner covered with concrete. Canal flow would not be restricted. Rate of flow in the canal would not need to be restricted, but lining work would be suspended during the peak summer flow period. Construction equipment would be supported on a structural truss spanning the Canal. Sand and silt removed from the Canal would be discharged as a slurry onto terrain adjacent to the west bank. The batch plant, staging area, and road requirements would be the same as those associated with the Conventional Lining Alternative.

Parallel Canal Alternative: A new Canal would be constructed parallel to the Coachella Canal on alternating sides depending on terrain. The center line of the new Canal would be offset from the old center line of the original Canal by 100 to 500 feet. Between siphons 29 and 30, the new canal would take a more direct route to the northwest, shortening the overall canal length by approximately 0.7 mile. At each of the 26 siphons, a tie-in with an S-curve configuration would be constructed into the existing inlet and outlet transitions. New 20-foot-wide operations and maintenance roads would need to be constructed to provide access; one side would be gravel surfaced. Approximately 10 million cubic yards of earth would be excavated. Excavated material in excess of that needed for Canal embankments would be

deposited in the abandoned Canal. An estimated maximum of 460 acres of new rights-of-way (mostly under Federal ownership) would have to be acquired, including 31 acres of private land. A ten-acre concrete batch plant and three 5-acre staging areas would be required.

V. Basis for Decision

The decision to proceed with the Project by implementing the Conventional Lining Alternative (Preferred Alternative) is based on an immediate need to conserve Canal seepage. Conservation of water, wherever and whenever feasible, is one of several strategies proposed to assist the State of California in meeting the objectives of the California Plan. Presently, the State is faced with limitations on the quantity of future Colorado River water available to its users [4.4 million af/yr (basic, non-surplus-year apportionment)], based on the Secretary's application of the following: U.S. Supreme Court decree in *Arizona v. California*, the Criteria for Coordinated Long-range Operation of Colorado River Reservoirs, the Interim Surplus Guidelines, and 43 CFR Part 417, "Regulations Relating to Public Lands-Procedural Methods for Implementing Colorado River Water Conservation Measures With Lower Basin Contractors and Others." California has historically been legally diverting more than its normal year apportionment of 4.4 million acre-feet (MAF). Prior to 1996, California's demands in excess of 4.4 million acre-feet per year were met solely by unused apportionments of other lower Division States (Arizona and Nevada) that were made available by the Secretary. Since 1996, California also has utilized surplus water made available by secretarial determination. The other Lower Division States are, however, approaching full utilization of their apportionments, and declared surpluses of Colorado River water are expected to diminish in future years. The water conserved by the Project would help offset a portion of this reduction in supply.

With the Project, about 30,850 af/yr of Colorado River water would be conserved for multi-purpose use. An amount of water equal to the amount conserved is planned to be distributed in order as follows: (1) up to 4,850 af/yr to implement mitigation measures to sustain ecological equivalency for fish and wildlife resources (marsh/aquatic and desert riparian habitat) on an acre-for-acre basis for certain areas affected by the project as specified in Title II of the Act; (2) 4,500 af/yr to the SLR Parties in accordance with terms specified in Title I of the Act; and (3) 21,500 af/yr to MWD for consumptive use and to assist California in meeting the objectives of the California Plan,

VI. Public Response to the Final Environmental Impact Statement/Final Environment Impact Report

On April 27, 2001, Reclamation published a Notice of Availability for the FEIS/EIR in the Federal Register. Following this Notice, Reclamation received four comment letters on the FEIS/EIR. Comment letters were received from the EPA, the U.S. Fish and Wildlife Service (Service); the Imperial County Planning/Building Department; and the Quechan Indian Tribe.

With respect to the comments received on the FEIS/EIR, and pursuant to Reclamation's NEPA guidance, "*Only in special circumstances should any specific comments be responded to in the ROD. If the comments raise significant issues that have not been addressed, the need to supplement the FEIS should be determined.*" The comments offered in response to the FEIS/EIR were carefully reviewed, and it was determined that no significant issues were raised that would require supplementation of the document. Responses to substantive comments on the FEIS/EIR follow.

Comment 1. Consultation With Indian Tribes:

EPA recommended additional government-to-government consultation with Indian Tribes who have an interest in a sacred site at Lake Cahuilla and other cultural and archaeological resources in the Project area. EPA also advised that additional consultation should be conducted pursuant to the November 6, 2000, Executive Order on Consultation and Coordination with Indian Tribal Governments (E.O. 13175).

Response:

Reclamation concurs with EPA's comment regarding consultation with Indian Tribes. As part of the Project's NEPA review process, Reclamation contacted the following by letter dated July 10, 2000: The Cahuilla Band of Mission Indians; Cabazon Band of Cahuilla Indians; Campo Band and Twentynine Palms Band of Mission Indians; Augustine Indians; Barona Indians; Viejas Tribe; Cuyapaipe General Council; Quechan Indian Tribe; and the Torres-Martinez Band of Mission Indians. Each was invited to provide input on the Project.

During the DEIS/EIR review period from September through November 2000, Reclamation received comment letters from the Quechan Indian Tribe and the Torres-Martinez Band of Cahuilla Indians. Where appropriate, changes were made to the FEIS/EIR, and a comment-response summary was appended to the FEIS/EIR to reference individual letters, including those provided by these two Tribes.

Additional consultation with Indian Tribal Governments continued with a letter sent by Reclamation on June 12, 2001, from the Yuma Area Office Manager to the following Tribes: Quechan Indian Tribe; Augustine Indians; Barona Indians; Cabazon Band of Mission Indians; Cahuilla Band of Mission Indians; Campo Band of Mission Indians; Cuyapaipe General Council; Torres-Martinez Band of Mission Indians; Twenty-Nine Palms Band of Mission Indians; and the Viejas Reservation. This letter offered another opportunity for Tribal Governments to participate in cultural resource compliance activities related to Section 106 of the National Historic Preservation Act (NHPA). Reclamation advised these Tribes of the initiation of Section 106 consultation, pursuant to the NHPA, with the California State Historic Preservation Officer (SHPO) and offered these Tribes the opportunity to consult on potential cultural resources field surveys. Further, Reclamation advised these Tribes that, it planned to execute a Programmatic

Agreement (PA) with the SHPO and CVWD as part of Section 106 cultural resource compliance process for the Project. Tribal consultation is a requirement of the Section 106 process. Concerns expressed by any Tribe regarding potential effects to historic properties and sacred sites due to construction will be considered as part of the consultation requirements pursuant to the PA.

Comment 2. Socioeconomic Effects to Seepage Water Users:

Comments requested further analysis of potential socioeconomic impacts to individual and commercial users of seepage water, which would no longer be available to them after the Project is completed.

Response:

Under Federal law, the use of Colorado River water derived from Canal seepage and without a contract with the Secretary is not authorized. Further, where not pre-empted by Federal law, the use of unsecured surface water supplies, such as Canal seepage, is a matter of California Water Law and related State adjudication processes. Impacts to unauthorized users of seepage water were determined to be beyond the scope of the NEPA review of the Project.

Comment 3. Water Rights, Entitlement to the Conserved Water:

The Quechan Indian Tribe expressed concern about cumulative effects of the Project and other proposed actions related to the Colorado River and its use on the Tribe's senior Colorado River water rights.

Response:

The Federal reserved rights of the Quechan Indian Tribe to Colorado River water will not be cumulatively affected by incremental impacts of the Project and other proposed Colorado River actions. Implementation of the Project would not change the relatively senior water rights held by the Quechan Indian Tribe, Fort Yuma Reservation. The Present Perfected Rights of the Fort Yuma Indian Reservation would continue to be satisfied in accordance with the 1963 Decree and the 1979 Supplemental Decree in *Arizona v. California*. The question of providing additional Colorado River water to the Tribe is presently under consideration by a Special Master of the U.S. Supreme Court. If and when an additional water right(s) for the benefit of the Tribe is quantified, the source of such water would be identified. Because water to be conserved by the Project is already dedicated according to the terms of the Act, it would not be available to provide an additional supply to the Tribe.

Comment 4. Mitigation Plans:

Comments were made with regard to mitigation planning and development of strategies, the availability of water supplies (surface and ground water) and their volumes; installation of instrumentation and acquisition of baseline flow data for Salt Creek and maintenance of current flow conditions; removal of salt cedar and associated mitigation; a quantitative basis for defining ecological equivalency; design of large mammal escapes; implementation of a monitoring plan and its funding; and formulation of a contingency plan if mitigation fails.

Response:

In Chapter 7 of the FEIS/EIR, environmental commitments were made to incorporate specific features into Project design (e.g., large mammal escape ramps), and additional mitigation measures were developed for those areas of potential impact noted in the comment. Measures would continue to be developed as a cooperative effort among resource agencies and the California Contractors who have been involved in the NEPA and CEQA processes, including, but not limited to Reclamation, the Service, Bureau of Land Management, California Department of Fish and Game, MWD and CVWD.

A Mitigation and Monitoring Plan, which incorporates mitigation measures/environmental commitments, would be completed during the Project design/preconstruction phase and prior to construction. Reclamation and its partners have committed to provide water if necessary to certain areas at risk for dessication caused by Canal lining in order to sustain the current ecological value of both habitat and species dependent upon seepage water.

Comment 5. Burrowing Owl, Palm Springs Round-tailed Ground Squirrel; Desert Pupfish:

Comments recommended preconstruction surveys for the burrowing owl and the Palm Springs round-tailed ground squirrel. In addition, it was recommended that water quality be evaluated for survival and successful reproduction of the desert pupfish to the maximum extent possible.

Response:

Reclamation is committed to conducting surveys for these species and addressing water quality needs for the desert pupfish as part of the Mitigation and Monitoring Plan developed for this Project.

Comment 6. Salt Cedar and the Endangered Southwestern Willow Flycatcher:

Comments noted that salt cedar vegetation comprises suitable foraging habitat for the Federally endangered southwestern willow flycatcher. Observations of salt cedar use by the flycatcher have been made at locations along the Colorado River.

Response:

The salt cedar communities along the Coachella Canal are not adjacent to a large contiguous water body nor do they possess the structural components of salt cedar communities used by flycatchers along the Colorado River. In fact, the communities in the Project area occur mostly on dry bajadas and in ephemeral washes and not in association with permanently inundated and saturated soils, which are components necessary to support foraging and nesting habitat. Rather, salt cedar in proximity to the Canal is suitable only as marginal and limited stopover habitat for transient or migrant flycatchers. Because the flycatcher is capable of flying an average of 90 miles without a stopover, the loss of salt cedar in the Project will not adversely affect migrating flycatchers and the Project will fully mitigate for the potential loss of exotic invasive salt cedar by planting other higher value desert riparian species.

Comment 7. Flows Downstream of Imperial Reservoir:

The comment noted that a clarification is needed in the FEIS/EIR, as the document states that flows downstream of Imperial Reservoir would not be changed, yet it also identifies specific mitigation measures for effects on riparian habitat along the lower Colorado River, which would not result unless downstream flows changed.

Response:

The FEIS/EIR reports the incremental contribution of the Project to impacts and mitigation when its effects are considered in combination with other Colorado River water management projects proposed concurrently among California Contractors. Water is currently diverted at Imperial Reservoir into the AAC and downstream, into the AAC Coachella Branch for distribution by CVWD. Releases from Imperial Dam into the Colorado River channel are primarily for maintenance of the Laguna Dredge Basin, as partial delivery to Mexico, and to maintain the riverine environment. These releases are augmented by agricultural drainage return flows in the Yuma Division. These conditions would not be changed with the Project.

The impacts resulting from a change in the point-of-delivery for up to 400,000 af/yr on the Colorado River between Lake Havasu and Imperial Dam and the mitigation for impacts associated with a change in point-of-delivery were the subject of a combined Section 7 consultation with the Service (Biological Assessment for Proposed Interim Surplus Criteria, Secretarial Implementation Agreements for California Water Plan Components and Conservation

Measures, August 30, 2000; Consultation Number AESO/SE 2-21-00-F-273, Biological Opinion of January 12, 2001).

VII. Alteration of Project Plan in Response To Public Comment

Public comments on the FEIS/EIR did not result in changes to the proposed action nor selection of the Preferred Alternative.

VIII. Status of Cultural Resources Consultation Pursuant to Section 106 of the National Historic Preservation Act

On February 15, 2002, Reclamation executed a Programmatic Agreement (PA) with the California State Historic Preservation Officer (SHPO) pursuant to 36 CFR 800.14(b) implementing Section 106 of the National Historic Preservation Act (NHPA). The PA (Attached) stipulates roles and responsibilities of the signatory parties (Reclamation, SHPO, and CVWD) with regard to achieving compliance with Section 106 of the NHPA. The signatory parties agree that the construction of the Project, pursuant to Title II of P. L. 100-675, shall be administered in accordance with the stipulations of the PA in order to satisfy Reclamation's responsibility for compliance with Section 106, for all individual aspects and phases of the Project.

IX. Status of Consultation On Special Status Species Pursuant to Section 7 (a)(2) of the Endangered Species Act

Reclamation initiated informal consultation with the Service regarding the potential effects of the Project on listed species, in accordance with the requirements of section 7 of the Endangered Species Act. Informal consultation was supported by letters, meetings, and conference calls between August 2000 and March 2002. By memorandum dated November 2, 2001, Reclamation requested informal consultation, supported by a Biological Evaluation. A memorandum was also submitted to the Service on March 1, 2002 addressing a Mitigation Proposal for Impacts to Salt Cedar/Native, Native Plant Communities and Monotypic Salt Cedar for the Project. By memorandum dated March 13, 2002, the Service concurred with Reclamation's determination of "may affect, but is not likely to adversely affect" for the following six Federally listed species (these three memoranda are attached):

- endangered razorback sucker (*Xyrauchen texanus*);
- endangered Yuma clapper rail (*Rallus longirostris yumanensis*)
- endangered least Bell's vireo (*Vireo bellii pusillus*);
- endangered southwestern willow flycatcher (*Empidonax traillii extimus*);
- endangered desert pupfish (*Cyprinodon macularius macularius*); and
- threatened desert tortoise (*Gopherus agassizii*).

In their memorandum dated March 13, 2002, the Service also concurred with Reclamation's mitigation proposal, dated March 1, 2002, for impacts to Salt Cedar/Native, Native Plant Communities, and Monotypic Salt Cedar (*Tamarix ramosissima*) affected by the Project.

To ensure a determination of "may affect, but is not likely to adversely affect" for the Project, the Service requested Reclamation implement a number of additional environmental commitments which are listed in this ROD in Section X, Implementing The Decision under Environmental Commitments.

X. Implementing The Decision

Project-Related Commitments

California has historically been legally diverting more than its normal year apportionment of 4.4 MAF of Colorado River water and needs to reduce its consumptive use to its 4.4 MAF apportionment in normal years. To achieve this goal, the Colorado River Board of California developed California's draft Colorado River Water Use Plan. The California water agencies consisting of MWD, CVWD, and IID negotiated the Key Terms for the Quantification Settlement and developed a draft Quantification Settlement Agreement (QSA). The QSA establishes a framework of conservation measures and water transfers between the participating agencies for a period of up to 75 years. These provide an important mechanism for California to reduce its diversions of Colorado River water in normal years to its 4.4 MAF apportionment. The Coachella Lining Project is an integral component of the QSA.

MWD would be signatory to some of the Agreements associated with the Project, including (1) an agreement with CVWD and Reclamation for construction of the Project, and (2) an agreement for allocation of an amount of water equal to the amount conserved after mitigation. Pursuant to these agreements, CVWD would be responsible for planning, designing, and constructing the 33.2-mile Project. The agreement among Reclamation, CVWD, and MWD for construction would grant Reclamation and MWD review and approval of CVWD design, and an opportunity to monitor Project construction.

Reclamation, on behalf of the Secretary, would execute a construction agreement with CVWD and MWD (as noted above) that defines respective responsibilities of those entities and other applicable provisions of Reclamation Law and Title II of the Act.

Project Funding

Federal funds were not authorized or appropriated for the Project; however, the Secretary has the discretion to enter into an agreement or agreements with one or more of the California Contractors for construction or funding of all or a portion of the works. In 1998, California

Senate Bill 1765 amended the California Water Code (CWC) to provide for Project funding. CWC Sections 12560 *et seq.* authorized and continuously appropriated \$200 million, subject to specific conditions, to help fund the Canal Projects authorized by the Act, in furtherance of implementing the California Plan for reducing the State's use of Colorado River water to its normal-year basic apportionment of 4.4 million af.

In CWC 12560 *et seq.*, funds were appropriated from the State General Fund for use by the Director of the California Department of Water Resources (DWR) to finance and arrange for lining portions of the AAC and the Coachella Canal. Subsequently, a funding agreement was executed by DWR and MWD for the Coachella Canal Lining Project on May 9, 2001.

The CWC 12560 *et seq.*, specifies that expenditures of Project funding are contingent upon a statement of certification from the Secretary that measures for the replacement of incidental fish and wildlife values adjacent to the canal foregone as a result of the lining of the canal, or mitigation of resulting impacts on fish and wildlife resources from the construction of a new canal, or a portion thereof, meet the statutory requirements of Section 203(a)(2) of the Act. To this end, this ROD provides certification that such measures, which would be implemented concurrent with construction of the works, do meet the statutory requirements based on ecological equivalency on an acre-for-acre basis (see Section XI).

Environmental Commitments

In the FEIS/EIR, potential impacts on 34 resource issues/areas from construction activities associated with the Preferred Alternative were analyzed. The resource issues included: Aesthetics; Agricultural Resources; Air Quality (CEQA); Geographic Setting; Geologic Resources and Seismicity; Geology and Soils; Hazards and Hazardous Materials; Surface Water; Ground Water, Water Quality; Hydrology and Water Quality; Marsh/Aquatic and Desert Riparian Habitat Along the Coachella Canal; Marsh/Aquatic and Desert Riparian Habitat Along the Colorado River; Terrestrial Habitat; Special Status/Endangered Species; Large Mammal Escape; Canal Fishery; Cultural Resources; Indian Trust Assets; Recreation; Land Ownership and Use; Noise; Public Services; Sand and Gravel Supplies; Transportation; Air Quality; Hydroelectric Power; Public Safety; Socioeconomic Aspects; Environmental Justice; Growth Inducement; and Utilities and Service Systems. A summary of potential impacts on these resource issues is provided in Table 2-7 and Attachment C of the FEIS/EIR and summarized below.

No significant impacts were identified for the following resource issue/areas, and no mitigation measures are necessary: Aesthetics; Agricultural Resources; Air Quality (CEQA); Geographic Setting; Geologic Resources and Seismicity; Geology and Soils; Hazards and Hazardous Materials; Surface Water; Ground Water; Hydrology and Water Quality; Marsh/Aquatic and Desert Riparian Habitat along the Colorado River; Indian Trust Assets; Land Ownership and Use; Noise; Public Services; Sand and Gravel Supplies; Transportation;

Hydroelectric Power; Public Safety; Socioeconomic Aspects and Environmental Justice; Growth Inducement; and Utilities and Service Systems.

Potentially significant impacts were identified for the following resource issue/areas: Marsh/Aquatic and Desert Riparian Habitat Along The Coachella Canal; Terrestrial Habitat; Special Status/Endangered Species; Large Mammal Escape; Canal Fishery; Cultural Resources; and Recreation. These impacts would be mitigated to a not significant level by the implementation of recommended environmental commitments/mitigation measures identified in the FEIS/EIR and this ROD.

Air Quality is the sole resource issue where impacts may remain significant despite implementation of mitigation measures and implementation of environmental commitments. The unlined Canal is located in the Salton Sea Air Basin, a non-attainment area with regard to the National Ambient Air Quality Standards for particulate matter less than 10 microns in diameter (PM-10) and ozone. Construction-related emissions would exacerbate PM-10 concentrations in the Project area. Implementation of proposed mitigation measures would reduce PM-10 emissions below Federal Clean Air Act *de minimis* thresholds, but not below California's South Coast Air Quality Management District (SCAQMD) significance thresholds, so the effects are considered significant. Effects on human health and the environment, however, would not be expected to be significant, because PM-10 emissions would affect air quality downwind (east) of the Project area, which is sparsely populated desert. As part of the Project plan, the construction contractor will be required to obtain any applicable permits to ensure that fugitive dust impacts are below the Federal Clean Air Act General Conformity *de minimis* thresholds, but not to less than SCAQMD significance thresholds.

In accordance with the Mitigation Monitoring and Reporting Program SCH Number 1990020408, dated May 16, 2001, specific monitoring and evaluation procedures would be implemented by CVWD and MWD with Reclamation's approval, to track the effectiveness of mitigation of fish and wildlife habitat and to serve as the basis to assess the need for any remedial mitigation measures required to satisfy environmental commitments should they be required.

This ROD incorporates by reference the **Environmental Commitments** made in the following documents: FEIS/EIR, Chapter 7, Environmental Commitments (April 2001); Reclamation's Informal Section 7 consultation memorandum and Biological Evaluation of November 2, 2001; Reclamation's Memorandum of March 1, 2002 addressing a Mitigation Proposal for Impacts to Salt Cedar/Native, Native Plant Communities, and Monotypic Salt Cedar-Coachella Canal Lining Project, California; and cultural resources Programmatic Agreement dated March 15, 2002. The environmental commitments listed below for Cultural Resources and Listed Species are the result of subsequent agency consultation. Implementation of all of these environmental commitments for the Preferred Alternative will minimize and/or avoid adverse impacts to the identified resource issue/areas.

1. Cultural Resources: Reclamation shall assure the stipulations in the Cultural Resources Programmatic Agreement among the signatory parties are implemented to satisfy Reclamation's Section 106 responsibilities pursuant to the NHPA for the Coachella Canal Lining Project.

2. Listed Species: In addition to the planned surveys and avoidance measures described in Reclamation's informal consultation letter and Biological Evaluation with attachments dated November 1, 2001, the Service requested Reclamation implement the following commitments to ensure a finding of "may affect, but is not likely to adversely affect:"

- a. Tortoise exclusion fencing is required in areas along the canal where the berm is inadequate to function as a barrier or is not present;
- b. If planned surveys for either the tortoise or razorback sucker indicate that the avoidance measures described may not be adequate to maintain the likelihood of take at a discountable level, Reclamation shall initiate formal consultation with the Service to address this take. The consultation process shall be completed prior to the start of construction activities;
- c. If either a tortoise or razorback sucker are found during the course of construction activities, all construction activities that could affect these species shall cease until Reclamation has completed the formal consultation process; and
- d. The Service's analysis for tortoise was conducted based on the fact that construction activities will take place within the area bounded by the waste berm(s) and/or the outside edge of the existing canal roads, and that staging areas and access routes would not be located in desert tortoise habitat. If it proves to be infeasible to limit construction activities to these areas, no construction activities shall occur until the Service and Reclamation have re-evaluated the impacts of the proposed project.

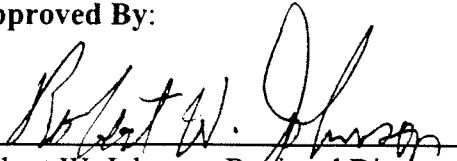
XI. Certification of Ecological Equivalency

The following statement is provided to satisfy a requirement in CWC 12565 (c), that must be satisfied before the State of California can release funding for the lining of the Coachella Canal:

"The Secretary certifies that measures for the replacement of incidental fish and wildlife values adjacent to the Coachella Branch of the AAC foregone as a result of the lining of the Canal, or the mitigation of resulting impacts on fish and wildlife resources from the construction of a new Canal or portion thereof, meet the statutory requirements of Section 203(a)(2) of Public Law 100-675. These mitigation measures are on an acre-for-acre basis, based on ecological equivalency and shall be implemented concurrent with the construction of the Project."

XII. Signatures

Approved By:


Robert W. Johnson, Regional Director
Lower Colorado Regional Office

Date 3/27/22

XIII. Attachments

1. Programmatic Agreement Among The United States Department of the Interior, Bureau of Reclamation, The California State Historic Preservation Officer, and The Coachella Valley Water District, Regarding The Construction Of The Coachella Canal Lining Project, Pursuant To Title II Of Public Law 100-675.
2. Reclamation Memorandum of November 2, 2001; To Ms. Nancy Gilbert, Assistant Field Supervisor for San Diego, Imperial, and Eastern Riverside Counties, U.S. Fish and Wildlife Service, Ecological Services; Subject, Informal Section 7, Endangered Species Act (ESA) Consultation - Coachella Canal (Canal) Lining Project (Project), Riverside and Imperial Counties, California; with Biological Evaluation and attachments.
3. Reclamation Memorandum of March 1, 2002; To Jim A. Bartel, Field Supervisor, U.S. Fish and Wildlife Service; Subject, Mitigation Proposal for Impacts to Salt Cedar/Native Plant Communities, and Monotypic Salt Cedar - Coachella Canal Lining Project, California.
4. Service Memorandum of March 13, 2002; To Assistant Manager, Yuma Area Office; Subject, Informal Section 7 Endangered Species Act (ESA) Consultation for the Coachella Canal Lining Project (Project), Riverside and Imperial Counties, California.
5. Chapter 7, Environmental Commitments, pages 7-1 through 7-14, FEIS/EIR for Coachella Canal Lining Project, April 2001.

**PROGRAMMATIC AGREEMENT
AMONG
THE UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION,
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER,
AND THE COACHELLA VALLEY WATER DISTRICT**

REGARDING

**THE CONSTRUCTION OF
THE COACHELLA CANAL LINING PROJECT
PURSUANT TO TITLE II OF PUBLIC LAW 100-675**

WHEREAS, the Secretary of the Interior (Secretary) was authorized by Public Law 100-675, on November 17, 1988; to line the unlined sections of the All-American and Coachella Canals or to pursue other means of recovering water lost from the Canals owing to seepage; and

WHEREAS, funds for the Coachella Canal Lining Project (Undertaking) were authorized by California Senate Bill (S.B.) 1765 during the 1998 legislative session, which amended the California Water Code and appropriated State funding for the Undertaking; and

WHEREAS, the United States Department of the Interior Bureau of Reclamation (Reclamation) is the lead federal agency for compliance with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966, as amended (NHPA), and is the owner of the Coachella Canal, and will issue a right-of-use permit for construction and a construction agreement; and

WHEREAS, the Coachella Valley Water District (CVWD), a county water district organized and existing under and by virtue of the County Water District Act of the State of California and acts amendatory thereof or supplementary thereto, shall line or cause the Undertaking to be designed and constructed and shall be reimbursed for eligible Undertaking cost in accordance with the June 1, 2001 "Agreement for the Funding Coachella Canal Lining Project", No. 46400001474 between Metropolitan Water District (MWD) of Southern California and the California Department of Water Resources, and is acting as lead state agency for the California Environmental Quality Act review of the Undertaking; and

WHEREAS, Reclamation and the CVWD jointly released the Final Environmental Impact Statement/Environmental Impact Report for the Undertaking on April 27, 2001, and

Reclamation will issue a Record of Decision, and CVWD has issued a Notice of Determination for the Undertaking; and

WHEREAS, this Programmatic Agreement (PA) shall upon execution become an environmental commitment in Reclamation's Record of Decision and the Construction Agreement between Reclamation and CVWD; and

WHEREAS, owing to the scope and complexity of the Undertaking, identification of historic properties that are eligible for inclusion in the National Register of Historic Places (NRHP) cannot proceed effectively, and the Undertaking's effects to historic properties cannot be fully determined, prior to a construction design for the preferred alternative, Reclamation has therefore elected to pursue compliance with Section 106 of the NHPA, through a phased identification and evaluation process as provided for at 36 CFR Part 800.4(b)(2) (designated as §800.4(b)(2)), and through phased application of the criteria of adverse effect as provided for at §800.5(a)(3), and to execute this PA pursuant to §800.14(b); and

WHEREAS, Reclamation's Lower Colorado Regional Office has consulted with the California State Historic Preservation Officer (SHPO) pursuant to §800.6(a)(1), and has notified the Advisory Council on Historic Preservation (Council) of its intention to prepare a PA pursuant to §800.6(a)(1)(i)(C), and will execute this PA pursuant to §800.6(b)(1) because Council has informed Reclamation pursuant to §800.6(a)(1)(iii), that it declines to participate in this consultation; and

WHEREAS, the Agua Caliente Tribe of Cahuilla Indians, the Cabazon Band of Mission Indians, the Cahuilla Band of Mission Indians, the Torres-Martinez Band of Cahuilla Indians, the Campo Band of Mission Indians, the Augustine Indians, the Barona Indians, the Viejas Tribe, the Twentynine Palms Band of Mission Indians, the Cuyapaipe General Council, and the Quechan Indian Nation have been notified regarding the preparation of this PA, and these and other Tribes will be consulted throughout the implementation of this PA, pursuant to §800.3(f)(2) and §800.14(f)(1);

NOW, THEREFORE, Reclamation, the SHPO, and CVWD agree that, upon Reclamation's decision to proceed with the Undertaking, the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties.

STIPULATIONS

Reclamation, in cooperation with CVWD, shall ensure that the following stipulations are implemented:

I. DESCRIPTION AND SCOPE OF THE UNDERTAKING

A. The unlined portions of the Coachella Canal (CC), located several miles east of the Salton Sea, will be lined between siphons 7 and 14 and siphons 15 and 32 (see attached Figure 1; the reach between siphons 14 and 15 was previously lined). This area comprises 33.2 miles of unlined canal in segments between the siphons. Water conveyed by the CC is diverted from the All-American Canal which originates at Imperial Dam on the lower Colorado River.

B. A concrete lining will be installed in place incrementally in segments of the CC between existing siphons. CC water will be diverted around each section through the use of coffer dam/sheet-piling segregation of canal water or a temporary bypass pipeline/channel, or some combination of the two methods, while the lining is installed. With the possible exception of sand and gravel quarry operations and material and equipment staging areas, construction of the Undertaking, including, but not limited to, construction vehicles and heavy equipment traffic and temporary bypass pipelines/channels will be restricted to the CC itself and its existing right-of-way. This right-of-way varies between 360 and 610 feet in width.

II. AREA OF POTENTIAL EFFECTS OF THE UNDERTAKING

A. All project activities, with the possible exception of sand and gravel quarry operations and material and equipment staging areas, that have the potential to affect historic properties, will be confined to the CC itself and its existing right-of-way. For the purpose of this PA the Undertaking's Area of Potential Effects (APE) consists of the length of the CC between siphons 7 and 32, by approximately 1,000 feet (i.e. 500 feet from the centerline on both sides of the canal) in addition to sand and gravel quarry operations and material and equipment staging areas.

B. As project design progresses (within 12-18 months after State funding is available for the Undertaking), it may become necessary to amend the APE based on the 50% project design or no later than one year into this planning window. Reclamation will amend the APE in consultation with the SHPO and CVWD. The consultation period shall not exceed seven days. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below.

C. Reclamation may amend the APE at any time during the Undertaking in consultation with CVWD and the SHPO. The consultation period shall not exceed seven days.

Reclamation, CVWD, and the SHPO agree that the APE may be amended without amending this PA.

III. IDENTIFICATION OF HISTORIC PROPERTIES

A. Professional Standards

1. Reclamation and CVWD shall ensure that all cultural resource work required by this PA shall be carried out by or under the direct supervision of a person or persons meeting the Secretary of the Interior's Professional Qualifications Standards (PQS) in the appropriate disciplines, outlined in 36 CFR Part 61 Appendix A. However, nothing in this stipulation may be interpreted to preclude Reclamation, CVWD, or any agent or contractor thereof, from using services of persons who do not meet the PQS, provided such persons are directly supervised by individuals who meet the PQS.

B. Class I Literature Review, Historic Context, and Research Design

1. Following execution of this PA, the CVWD, or its designee, shall conduct a historic/records review for an area one mile to each side of the CC, in the area of the Undertaking, to identify known historic properties within the APE and to facilitate preparation of the historic context and research design to be included in the Class I report for the Undertaking. The Class I Report shall, at a minimum, provide information about the environmental setting, culture history, previous investigations, pertinent research themes, research questions and data requirements. The Class I Report shall be completed within six months following the release of project funds to CVWD. The Class I report shall be used by CVWD, or its designee, as a general guidance document during preparation of any subsequent reports, treatment plans, and other work needed for any phase of the Undertaking.

2. Reclamation shall submit the Class I Report to the SHPO for a 30 day review period prior to beginning any on the ground cultural resource inventories. Absent SHPO comment within this time frame, Reclamation may assume SHPO concurrence that the Class I Report is acceptable and proceed with the inventory. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below.

3. Reclamation may propose that the Class I Report be amended depending upon the nature and type of the prehistoric and historic properties identified during the intensive Class III inventory(ies). Any such amendment will be done in consultation with the SHPO. Such consultation shall not exceed 15 days. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below. Reclamation, CVWD, and the SHPO agree that the Class I Report may be amended without amending this PA.

C. Coachella Canal

1. CVWD, or its designee, shall develop a historic context for the CC. CVWD shall provide the documentation needed by Reclamation to evaluate the CC's National Register eligibility in consultation with the SHPO. Reclamation and CVWD shall make this stipulation a priority and shall begin the development of the historic context for the CC as expeditiously as possible following execution of this PA.
2. Development of the CC historic context shall follow the guidance found in the following documents: "Water Conveyance Systems in California - Historic Context Development and Evaluation Procedures," California Department of Transportation (December, 2000); National Register Bulletin 15, "How to Apply the National Register Criteria for Evaluation" (National Park Service); and "The Historic Yuma Project: History, Resources Overview, and Assessment" by Christine Pfaff, Rolla L. Queen, and David Clark (1999).
3. CVWD, or its designee, shall submit a draft of the CC historic context report to Reclamation. Reclamation shall submit the report to the SHPO for a 30 day review period. Absent SHPO comments within this time frame, Reclamation may assume the draft CC historic context report contains adequate and sufficient information to make a final determination with respect to the National Register eligibility of the CC. Reclamation shall combine all comments and submit them to CVWD, or its designee, for inclusion in a revised report. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below.
4. Reclamation shall submit the revised CC historic context report to the SHPO and shall consult with the SHPO to determine whether the CC is eligible for listing on the NRHP, pursuant to §800.4(c)(2). This consultation shall not exceed 30 days. Such consultation will address the applicable NRHP criteria and the level of significance (national, state, or local) that may apply if the CC is found to be eligible for listing in the NRHP.
5. If Reclamation determines the CC is not eligible for listing in the NRHP, and SHPO concurs, then the CC shall receive no further consideration under this PA.
6. If Reclamation determines that the CC is eligible for listing in the NRHP, and the SHPO concurs, Reclamation shall submit a finding of adverse effect on this historic property from the Undertaking to the SHPO, with a request for concurrence. The SHPO shall have 30 days to respond. Absent SHPO response within this time frame, Reclamation may assume SHPO concurrence with the adverse effect determination and proceed to subsection 7., below, of this stipulation.
7. If Reclamation and SHPO concur in a finding of adverse effect on the CC, and the CC is found significant at the state or local level, Reclamation shall consult with the SHPO to determine how the adverse effect of the Undertaking on the CC should be taken into account. Such consultation shall not exceed 30 days. If Reclamation and SHPO agree on

how the adverse effect will be taken into account, Reclamation will submit this agreement to CVWD, or its designee. Thereupon, CVWD shall ensure that a treatment plan consistent with the agreement between Reclamation and the SHPO is prepared and submitted to Reclamation and the SHPO for a 30 day review period. Upon acceptance by Reclamation and the SHPO, CVWD, or its designee, shall implement the treatment plan. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below.

8. If Reclamation and the SHPO concur that the CC is significant on a national level, Reclamation shall consult with the SHPO and the Historic American Building Survey (HABS) and the Historic American Engineering Record (HAER) Program to determine the appropriate level of documentation that will take the adverse effects of the Undertaking on the CC into account. Reclamation shall provide this information to CVWD, or its designee, for inclusion in the CC treatment plan specified in subsection 7., above, of this stipulation. Upon acceptance of the CC treatment plan by Reclamation, the SHPO, and HABS/HAER, CVWD, or its designee, shall implement the plan. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below.

D. Identification of Other Historic Properties

1. Reclamation and CVWD shall ensure that the Undertaking's APE, defined as amended after the 50% project design, if so amended, is inventoried at a Class III intensive survey level for historic properties pursuant to §800.4(b)(1). This survey, as well as all NRHP evaluations and other conditions of this PA shall be completed prior to issuance of the authorization for construction to proceed in any portion of the APE, pursuant to Stipulation VII, below.

2. All prehistoric and historic sites identified during inventory will be recorded on new or updated California Department of Parks and Recreation Form DPR 523 (Series 1/95), using the "Instructions for Recording Historical Resources" (Office of Historic Preservation, March 1995). CVWD, or its designee, shall obtain permanent site numbers from the appropriate Information Center of the California Historical Resources Information System (CHRIS) and shall submit the final, approved, site forms to the appropriate CHRIS. Permanent site numbers shall be used in all final reports submitted to Reclamation.

3. Traditional cultural properties identified during inventory and/or through consultations with Native Americans may be recorded on the DPR Form 523, unless a Tribe or another Native American organization or individual objects. If such objection arises, the properties may be recorded on a form and in a manner that is in accordance with the recommendations of the Tribe or of other Native American organizations or individuals, subject to the confidentiality requirements set forth in Stipulation XI of this PA.

4. The NRHP eligibility of all identified prehistoric and historic sites shall be addressed by Reclamation, in consultation with the SHPO, if Reclamation, in consultation with the SHPO, finds that effects to such sites cannot be avoided. NRHP evaluations, if deemed necessary, will use the Secretary of the Interior's (Secretary) criteria for evaluation as found in 36 CFR Part 60.4, and the historic themes, research questions, and data requirements identified in the Class I report. Native American Tribes shall be consulted and their comments and concerns shall be addressed throughout the identification and evaluation process.

5. Reclamation and SHPO here agree that all isolated artifacts shall be categorically not eligible for listing on the NRHP.

6. Properties identified during the Class III Inventory that clearly are not eligible for listing in the NRHP, shall be determined to be ineligible by Reclamation in consultation with the SHPO. If the SHPO concurs with Reclamation's determinations, those properties found ineligible shall receive no further review or consideration under this PA. Should the SHPO disagree with Reclamation's determinations, those properties shall continue to be considered as those properties defined in Stipulation III.D.4. above.

7. Reclamation and CVWD, or its designee, shall ensure that all plans, reports, and other documents completed pursuant to this PA are consistent with the Secretary's "Standards and Guidelines" (48 FR 44716-44740). All inventory reports shall generally conform to the guidance contained in Preservation Planning Bulletin Number 4(a), "Archaeological Resources Management Reports (ARMR): Recommended Contents and Format" (CA SHPO, February 1990). Inventory reports shall include, at a minimum, a description of the identification efforts; a description of identified sites; a general assessment of potential site eligibility through the application of the National Register criteria pursuant to §800.4(c), if it is apparent that effects to an identified property cannot be avoided; an assessment of effects of the Undertaking on properties as defined at §800.16(1); recommendations for avoidance or, where avoidance is not possible, of treatment for properties deemed by Reclamation, in consultation with the SHPO, to be historic properties. Upon completion, final copies of these reports shall be distributed pursuant to Stipulation X of this PA.

8. Upon completion of the Class III Inventory, Reclamation, CVWD, and its designee, shall consult to avoid identified properties, whenever possible, and amend the APE to reflect these measures. Reclamation shall consult with the SHPO concerning amendments to the APE. The consultation period shall not exceed seven days. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below.

9. Reclamation and CVWD, or its designee, shall ensure that inventory reports and other supplemental evaluation documents provide sufficient information and justifications to support determinations of NRHP eligibility pursuant to §800.11(a), whenever Reclamation in consultation with the SHPO, finds that the Undertaking's effects to inventoried properties cannot be avoided.

10. Reclamation shall apply the National Register criteria, pursuant to §800.4(c), to inventoried properties, and arrive at one of the following outcomes, if Reclamation in consultation with the SHPO, finds that Undertaking effects to such properties cannot be avoided:

- a. If the SHPO agrees with Reclamation that the Criteria are not met, the property shall be considered ineligible for listing on the NRHP. Such properties require no further review or consideration under this PA.
- b. If the SHPO agrees with Reclamation that the property is eligible under any of the criteria, the property shall be considered eligible for listing on the NRHP for purposes of this PA, and shall be included in a Treatment Plan as called for in Stipulation V, if such property will be adversely affected by the Undertaking.
- c. If the SHPO disagrees with Reclamation's determination regarding the eligibility of a property, Reclamation shall consult further with the SHPO to reach agreement. The time frame for such consultation shall be established by mutual agreement between the parties. If agreement cannot be reached within this time frame, Reclamation shall obtain a determination of eligibility from the Keeper of the National Register, who acts as the Secretary's representative in these matters, pursuant to §800.4(c)(2) and 36 CFR Part 63.

IV. ASSESSMENT OF EFFECTS ON CULTURAL RESOURCES

A. If Reclamation, in consultation with the SHPO, finds that there are no historic properties within the APE, or finds that when effects to all unevaluated properties and historic properties (here defined as properties previously determined to be eligible for listing on or listed on the NRHP) will be avoided, Reclamation may find that there will be no historic properties affected and proceed with the Undertaking without further SHPO consultation. CVWD, or its designee, shall provide adequate and sufficient documentation for Reclamation to make this determination. The following protection measures shall be implemented as appropriate for avoidance of properties:

1. Avoidance means that no activities associated with the Undertaking that may effect identified properties shall occur within a property's delineated site boundaries, including any defined buffer zones.
2. Buffer zones may be established to ensure added protection and shall be defined by Reclamation on a case-by-case basis. When the use or size of protective buffers for Native American traditional cultural properties needs to be determined, Reclamation shall consult with knowledgeable Native Americans and consider their views in the buffer size determination.

3. All properties to be avoided within the APE shall be clearly delineated prior to implementation of the Undertaking. Delineated boundaries shall include any defined buffer zones per Stipulation IV.A.2. Flagging and other markings shall be removed as soon as possible to avoid calling undue attention to the nature and location of identified properties.

4. CVWD, or its designee, shall be responsible for delineating and marking property boundaries in consultation with Reclamation.

5. CVWD, or its designee, in consultation with Reclamation, shall provide monitoring, as necessary, to enhance the effectiveness of these avoidance measures. Monitoring reports shall be prepared by CVWD, or its designee, and submitted to Reclamation within seven days of completion of the monitoring. Reclamation shall submit the monitoring reports to SHPO for concurrent reviews. If any reviewing party fails to object or submit comments within a 30 calendar day period, Reclamation may assume concurrence. Disagreements about the monitoring reports will be resolved through consultation among the parties. If Reclamation is unable to resolve objections or conflicting comments through such consultation, Reclamation shall follow Stipulation XIV of this PA. Upon completion, Reclamation shall distribute final copies of the monitoring reports pursuant to Stipulation X, below.

B. If Reclamation finds that the Undertaking may affect an unevaluated property, Reclamation will determine if the property is eligible for inclusion in the NRHP pursuant to Stipulation III.D.4., above, and arrive at one of the outcomes in Stipulation III.D.10, above. If it is determined not to be eligible for inclusion in the NRHP, the property will not be given further consideration under this PA. If the property is determined to be eligible for inclusion in the NRHP, Reclamation shall apply the Criteria of Effect and Adverse Effect found at §800.5(a) and (b), in consultation with the SHPO. CVWD, or its designee, shall provide Reclamation with adequate and sufficient documentation necessary to make this determination.

1. When activities from the Undertaking are planned such that effects to identified properties will be avoided by using the protection measures as defined in Stipulation IV.A.1-5, that aspect of the Undertaking will be considered to have "no effect." In these cases, Reclamation need not consult with the SHPO on effect before allowing that phase of the Undertaking to proceed.

2. If an identified property cannot be avoided and the property is determined, in accordance with Stipulation III.D.4. above, to qualify for inclusion in the NRHP, Reclamation, in consultation with the SHPO shall follow §800.5 to find if the Undertaking's effects on the historic property will be adverse. If such consultation results in a finding that the effect on the historic property is not adverse, then Reclamation shall conclude the consultation by complying with

§800.5(d)(1), and following such compliance, may proceed with the proposed activity.

3. If the consultation results in a finding that the effect on a historic property is adverse, then Reclamation shall proceed in accordance with Stipulation V., below.

V. TREATMENT PLANS

A. Reclamation, in consultation with the SHPO and CVWD, shall ensure that CVWD, or its designee, develops and implements a Treatment Plan(s) that takes into account the adverse effects to historic properties resulting from the Undertaking.

B. The Treatment Plan(s) shall be consistent with the Secretary of the Interior's Standards and Guidelines (48 FR 44716-44742), and take into account the Council's publication, Treatment of Archaeological Properties (1980), the Class I Report, and the guidance, standards, and requirements offered or established by the SHPO. At a minimum, a Treatment Plan shall include: a research design with historic themes; research questions and data requirements to answer them; a data recovery plan; proposed disposition of recovered materials and records; proposed methods for involving Native Americans and the interested public; and a proposed schedule for implementation of the plan.

C. CVWD, or its designee, shall submit a draft Treatment Plan to Reclamation for distribution to SHPO, CVWD, and Tribes for a 30 calendar day review period commencing on the date of its receipt by the reviewing party. The review by all parties may be concurrent, at Reclamation's discretion. If any reviewing party fails to object or submit comments within the 30 calendar day period, Reclamation may assume that party's concurrence. Disagreements about draft Treatment Plans will be resolved through consultation among the parties. If Reclamation is unable to resolve objections or conflicting comments through such consultation, Reclamation shall comply with Stipulation XIV, Dispute Resolution, of this PA.

D. Reclamation shall consolidate all review comments and provide them to CVWD, or its designee, for incorporation into a final Treatment Plan. Upon acceptance by Reclamation and distribution to the SHPO, Tribes and interested parties, CVWD, or its designee, shall implement the Treatment Plan.

E. Upon completion of the field work associated with implementation of the Treatment Plan, CVWD, or its designee, shall notify Reclamation of the completed work. Reclamation may then issue a notice to proceed to CVWD and concurrently notify all parties that commented on the Treatment Plan of such notice.

F. CVWD, or its designee, shall ensure that a report is prepared for each data recovery project covered in the Treatment Plan. Unless otherwise negotiated, CVWD, or its

designee, shall submit a draft data recovery report to Reclamation within 6 months after the completion of the treatment measures. Reclamation shall provide the SHPO, Tribes, and interested parties with an opportunity to review each draft data recovery report and submit comments back to Reclamation within 30 calendar days of receipt of the report. Reclamation shall review each draft treatment report and provide consolidated review comments to CVWD, or its designee, for incorporation into a final report. Unless otherwise negotiated, CVWD, or its designee, shall submit the final report to Reclamation within 30 calendar days after receipt of the comments.

VI. INADVERTENT OR UNANTICIPATED DISCOVERIES

A. In the event that the identification efforts in the Class I report and Class III inventories indicate that historic properties or human remains are likely to be discovered during implementation of the Undertaking, CVWD, or its designee, shall prepare a Discovery Plan. The Discovery Plan shall include a plan of action that conforms with 36 CFR Part 800, the Native American Graves Protection and Repatriation Act (NAGPRA), and applicable State of California laws. CVWD, or its designee, shall submit a draft of the Discovery Plan to Reclamation. Reclamation shall submit the draft plan to the SHPO and Tribes. SHPO and the Tribes shall review the plan and provide comments to Reclamation within 30 calendar days from receipt of the draft. Reclamation shall combine comments on the draft plan and submit them to CVWD, or its designee, for inclusion in a revised plan. If SHPO does not respond within 30 calendar days, Reclamation may assume the Discovery Plan is sufficient. Disputes arising under this provision shall be addressed pursuant to Stipulation XIV, below.

B. If a previously undiscovered or undocumented cultural resource is encountered during implementation of the Undertaking, all work in the immediate vicinity of the resource, except that necessary to secure and protect the resource, shall cease and CVWD, or its designee, shall immediately inform Reclamation. Reclamation shall ensure that the notifications and procedures identified in the Discovery Plan are carried out.

C. CVWD, or its designee, shall immediately provide an oral notification to Reclamation of the inadvertent discovery of human remains during implementation of the Undertaking and shall forward a written report of their findings to Reclamation within 48 hours by certified mail. CVWD, or its designee, shall cease all activity in the immediate vicinity of the discovery, except that necessary to stabilize, and protect such discoveries until authorized to proceed by Reclamation. Reclamation shall ensure that the notifications and procedures identified in the Discovery Plan are carried out.

VII. AUTHORIZATION TO PROCEED WITH CONSTRUCTION

A. Reclamation may authorize CVWD to begin construction of each phase of the Undertaking, provided, that the requirements of this PA have been completed for the phase(s):

1. If the Undertaking phase(s) has been inventoried in accordance with this PA and the inventory report submitted to Reclamation documents that no historic properties are present and Reclamation concurs with that determination; or
2. If after Reclamation has consulted with the SHPO, cultural resources located in the Undertaking phase(s) are determined to be not eligible to the NRHP; or
3. If avoidance measures outlined in Stipulations IV.A. and IV.B.1. are implemented; or
4. If the Undertaking phase(s) contains historic properties and field work as specified in the accepted Treatment Plan has been completed to Reclamation's satisfaction; or
5. If Undertaking activities were halted due to an inadvertent or unplanned discovery, and the actions defined in Stipulation VI have been completed.

B. In the event that a portion of the Undertaking phase(s) is redesigned, rerouted, or otherwise relocated after Reclamation has authorized construction, CVWD will promptly notify Reclamation of the proposed alterations and comply with the terms of this PA. Upon completion of all activities related to identification, evaluation, and treatment, Reclamation may re-authorize the construction of that portion of the Undertaking phase(s).

VIII. TREATMENT OF HUMAN REMAINS

A. Reclamation and CVWD shall ensure that all human remains encountered during the course of this Undertaking are treated in a respectful manner and in accordance with applicable Federal and State laws. No construction activities shall be allowed in the vicinity of the encountered human remains until a notice to proceed is provided by Reclamation.

B. If human remains are encountered on Federal lands, CVWD, or its designee, shall immediately provide an oral notification to Reclamation and shall forward a written report of their findings to Reclamation within 48 hours by certified mail. CVWD, or its designee, shall cease all activity in the immediate vicinity of the discovery, except that necessary to stabilize, and protect such discoveries until authorized to proceed by Reclamation. Reclamation shall ensure that the procedures and notifications identified in the Discovery Plan, if prepared, are carried out. In the event that a Discovery Plan is not prepared, Reclamation shall comply with the inadvertent discovery and disposition procedures outlined in 43 CFR Parts 10.4 and 10.6.

C. If human remains are encountered on State or private lands, CVWD, or its designee, shall immediately notify Reclamation. CVWD, or its designee, shall cease all activity in the immediate vicinity of the discovery, except that necessary to stabilize, and protect

such discoveries until authorized to proceed by Reclamation. Reclamation shall ensure that the procedures and notifications identified in the Discovery Plan, if prepared, are carried out. In the event that a Discovery Plan is not prepared, Reclamation shall comply with the applicable provisions of State of California law, including Public Resources Code Section 5097.98 and 5097.991.

IX. CURATION OF MATERIALS AND DATA

A. Reclamation and CVWD shall ensure that all records and materials resulting from activities carried out pursuant to this PA are curated in a facility meeting the standards set forth in 36 CFR Part 79.

B. Reclamation and CVWD shall ensure that all records and materials are maintained in accordance with 36 CFR Part 79 from the time of collection until they are turned over to the facility stated in Stipulation IX.A.

X. REPORT DISSEMINATION

A. Reclamation and CVWD, or its designee, shall ensure that all plans, reports, and other documents completed pursuant to this PA are consistent with the Secretary of the Interior's "Standards and Guidelines" (48 FR 44716-44740). Reclamation shall be responsible for their distribution and shall ensure that all parties to this PA receive copies of all final documents produced pursuant to this PA. Reclamation shall also ensure that final documents are provided to Tribes and other interested persons, as appropriate and subject to Stipulation XI, Confidentiality, of this PA. The number of copies of all plans, reports, and other documents shall be determined by Reclamation in consultation with the parties to this PA.

XI. CONFIDENTIALITY

A. The signatories to this PA acknowledge that all cultural resources covered herein or in subsequent documentation prepared as a result of this PA shall be subject to confidentiality per §800.11(c). Reclamation and CVWD shall ensure that such information is maintained on a need-to-know basis that is limited to Reclamation, CVWD, or its designee, and SHPO staff involved in planning, reviewing, and implementing the Undertaking.

XII. FUNDING

A. CVWD shall bear the expense of identification, evaluation, and treatment of all historic properties directly or indirectly affected by the Undertaking, provided that such expense is reimbursed to CVWD from MWD in accordance with the June 1, 2001 "Agreement for the Funding Coachella Canal Lining Project", No. 46400001474 between Metropolitan Water District of Southern California and the California Department of

Water Resources. Such costs are: preparation of the Class I Literature Review, Historic Context and Research Design report; preparation of the Coachella Canal historic context; pre-field work planning; preparation of a Treatment Plan(s); preparation of an Inadvertent Discovery Plan, if needed; inventory and data recovery/treatment; post-field work analysis; research and report preparation; report production; and costs associated with the curation of materials and data.

XIII. ANNUAL REPORTS

A. No later than January 30, 2003, and annually thereafter, Reclamation shall provide an annual report to the signatories to this PA that describes the actions Reclamation has taken to fulfill the terms of this PA, problems encountered in fulfilling its terms, and suggestions for amendments to the PA. Also, Reclamation shall describe work proposed for the upcoming year to fulfill the PA. Finally, Reclamation shall provide to the SHPO documentation of historic properties identified in the conduct of this PA, including negative survey data. A summary of this documentation shall be provided to the other signatories to this PA.

XIV. DISPUTE RESOLUTION

A. Should any signatory to this PA object in writing to Reclamation regarding the manner in which the terms of this PA are carried out, or to any documentation or plan prepared in accordance with and subject to this PA, Reclamation shall consult with the objecting party to address the objection. If resolution is not reached, Reclamation shall forward documentation relevant to the objection to the Council, including Reclamation's proposed response to the objection. Within 30 calendar days after receipt of all pertinent documentation, the Council shall exercise one of the following options:

1. Concur with Reclamation's proposed response to the objection, whereupon Reclamation may proceed with its action in accordance with the agreed-upon response; or
2. Provide Reclamation with recommendations, which Reclamation shall take into account in reaching a final decision regarding its response to the objection. Upon reaching its final decision, Reclamation will notify the objecting party and Council of its final decision and proceed with its action; or
3. Notify Reclamation that the objection will be referred for comment pursuant to §800.7(a)(4), and proceed to refer the objection and comment. In this event, the agency head shall take the resulting comment into account in accordance with §800.7(c)(4) and Section 110(l) of the NHPA. Thereafter, Reclamation shall notify the objecting party and the Council of its final decision, regarding the objection and may thereafter proceed with its action. Thereafter, the Council shall comment and Reclamation shall respond in accordance with §800.7(c).

B. Should the Council not exercise one of the foregoing options within 30 days of receipt of all pertinent documentation, Reclamation may assume that the Council concurs with its proposed response to the objection, advise the objecting party of that response, and proceed with its action in a manner consistent with that response.

C. At any time during the implementation of this PA, should an objection be raised by a member of the public, Reclamation shall immediately notify the other signatories in writing of the objection and take the objection into account. Reclamation shall render a decision regarding the objection, taking into account the views of the signatories to the PA.

D. Reclamation's responsibility to carry out all other actions under this PA that are not the subject of the objection will remain unchanged.

XV. AMENDMENTS AND TERMINATION

A. If any signatory believes that this PA should be amended, that signatory may at any time propose amendments, whereupon the signatories will consult to consider the amendment pursuant to §800.6(c)(7) and §800.6(c)(8). This PA may be amended only upon the written concurrence of the signatory parties.

B. Any signatory party may terminate this PA. Termination of this PA shall proceed in accordance with the applicable provisions of 36 CFR Part 800.

C. If this PA is terminated and Reclamation elects to proceed with the Undertaking, Reclamation shall comply with §800.14(b)(2)(v).

XVI. EFFECTIVE DATE

A. This PA shall take effect on the date that it has been fully executed by Reclamation, CVWD, and the SHPO.

EXECUTION of this PA by Reclamation, the SHPO, and CVWD, and implementation of its terms, evidence that Reclamation has afforded the Council a reasonable opportunity to comment on the Undertaking and its effects on historic properties, and that Reclamation has taken into account the effects of all aspects of the Undertaking on historic properties.

SIGNATORY PARTIES:

U.S. DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION

By: Robert W. Johnson Date: 3/15/02

Title: Regional Director

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By: Stephen D. Mikesell Date: 3/15/02

Title: Deputy SHPO

COACHELLA VALLEY WATER DISTRICT

By: Jan Levy Date: 3/15/02

Title: GM-CE

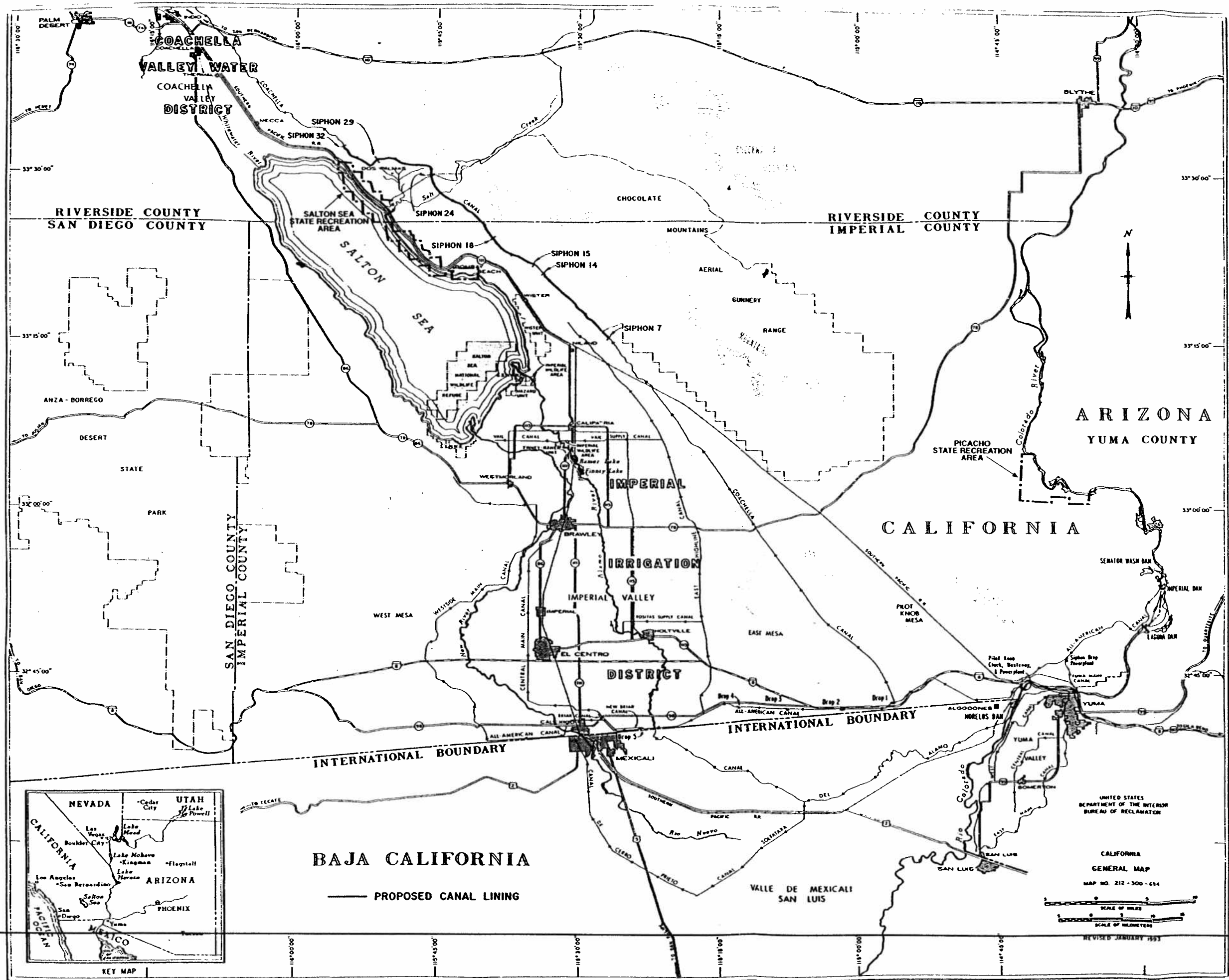


Figure 1-1
Project Location Map
Coachella Canal Lining Project
Final EIS/EIR

DATE	SURNAME	CODE
11/1/01	7010	Dy
11/1/01	7000	ATC
11/1/01	1000	JC
Classification		
Project		
Control No.	1003517	
Folder ID	2942	

ENV-6.00-EIS Coachella Canal

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ENV-7.00

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MEMORANDUM

To: Ms. Nancy Gilbert, Assistant Field Supervisor
San Diego, Imperial, and Eastern Riverside Counties
U.S. Fish and Wildlife Service, Ecological Services,
2730 Loker Avenue West, Carlsbad, California 92008

From: Jim Cherry
Area Manager

Subject: Informal Section 7, Endangered Species Act (ESA),
Consultation - Coachella Canal (Canal) Lining Project
(Project), Riverside and Imperial Counties, California

This Memorandum documents the process of Informal Section 7, ESA, Consultation for the Project and requests concurrence by the U.S. Fish and Wildlife Service (Service) with the determination made by Reclamation that the Project "may affect, but is not likely to adversely affect" federally listed threatened and endangered species.

Background

Under the authorization of Public Law 100-675 (November 1988), Reclamation and the Coachella Valley Water District (CVWD) propose to install a concrete lining in approximately 33.2 miles of the Canal, a man-made Federal water conveyance structure in Imperial and Riverside Counties, California. The potential exists for sensitive biological resources to be present within the Project area of effect. To comply with the requirements of Section 7 of the ESA, as amended, Reclamation has analyzed the potential effects that the Project may have on the following federally protected species:

- threatened Desert Tortoise (*Gopherus agassizii*);
- endangered Razorback Sucker (*Xyrauchen texanus*);
- endangered Yuma Clapper Rail (*Rallus longirostris yumanensis*);
- endangered Least Bell's Vireo (*Vireo bellii pusillus*);
- endangered Southwestern Willow Flycatcher (*Empidonax traillii extimus*), and;
- endangered Desert Pupfish (*Cyprinodon macularius macularius*)

This Memorandum and its attachments supplement previous coordination materials provided to you with regard to Section 7 Consultation about the Project. Items already in your possession include a Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR); previous Section 7 Consultation and coordination memoranda discussed below; and correspondence between the agencies, meeting handouts, and meeting and conference call notes.

Attachment 1 is a Biological Evaluation of the potential effects of the Project on the Razorback Sucker and the Desert Tortoise. It includes the best available scientific information and data on these species, some of which was provided to you earlier in correspondence, meetings, and conference calls.

Attachment 2 provides supplemental information on the four remaining species: Least Bell's Vireo, Southwestern Willow Flycatcher, Desert Pupfish, and Yuma Clapper Rail.

Attachment 3 provides a map of the Migrant Flyway in the Project area that is traveled by the Southwestern Willow Flycatcher and Least Bell's Vireo. The map, which is a digitized version of one presented to Service staff in a meeting earlier this year, was prepared in response to a request by the Service for such information.

ESA Coordination and Consultation History

In 1988, at the inception of the proposed Project, Reclamation requested a list of federally protected species from the Service. Because of delays in the Project, the list was updated by the Service in 1991, 1993, and 2000.

Informal Consultation among Reclamation, CVWD, and the Service continued during the National Environmental Policy Act (NEPA) review process for the Project. In 1994, Reclamation issued a Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) for public review. The Service provided comments on the DEIS/DEIR regarding federally protected species that were listed at that time. Subsequently, the Project was temporarily halted by Reclamation, which also postponed completion of the NEPA review process.

In the spring of 2000, Reclamation resumed the NEPA process for the Project. Later, in August 2000, Reclamation reinitiated consultation with the Service, requesting an updated list of threatened and endangered species for the Project area. The 1994 DEIS/DEIR was updated, and a revised DEIS/DEIR was issued in

September 2000. The Service submitted comments on the revised DEIS/DEIR, to which Reclamation responded in the FEIS/FEIR, which was issued for public review in April 2001.

Reclamation resumed Section 7, ESA, Consultation with letters to the Service earlier this year (Mr. Jim Cherry, Area Manager, Yuma Area Office, to Mr. Ken Berg, Service Field Supervisor, Carlsbad, California, February 23, 2001, and Mr. Cherry to Mr. Berg, May 25, 2001). In these letters, concurrence was requested on a determination of "may affect, not likely to adversely affect" for listed species, based on a proposal to undertake the Project by pumping Canal water around individual reaches through temporary above-ground pipelines, as the concrete lining is placed.

Because the Service expressed concerns about the potential for adverse effects to the Desert Tortoise and Razorback Sucker, these species became the subject of meetings with your staff and the California Department of Fish and Game (CDFG) on March 2, May 18, June 8, July 3, and August 7, 2001. During these meetings, details of the proposed action and proposed avoidance, minimization and mitigation were discussed; responses were provided to questions posed by the Service, and guidance was provided by the Service regarding continued consultation.

The Service agreed with Reclamation's verbal determination that Section 7 Consultation was not necessary regarding the special status Flat-Tailed Horned Lizard (FTHL) (*Phrynosoma mcalli*), which is managed in accordance with a multi-agency conservation strategy (Interagency Coordinating Committee 1997), and the Palm Springs Round-Tailed Ground Squirrel (*Spermophilus tereticaudus chlorus*), which is a candidate for Federal listing. However, should either of these species be encountered during Project implementation, Reclamation would immediately contact the Service for guidance, in accordance with the FTHL conservation strategy. Clearance surveys for the FTHL would be completed prior to temporary construction activities occurring in potential FTHL Habitat.

Also, the Service advised Reclamation that Informal Section 7 Consultation may suffice for the Project, based on avoidance and minimization measures to (1) ensure the continued survival of desert riparian and marsh/aquatic habitat in the Project area; (2) avoid terrestrial Desert Tortoise Habitat during construction; and (3) include design of construction techniques to preclude potential take of the Razorback Sucker during pumping operations and partial de-watering of the Canal.

With regard to the informal consultation concerning potential effects to the Southwestern Willow Flycatcher, Least Bell's Vireo, Yuma Clapper Rail, and Desert Pupfish, Reclamation believes that potential impacts to these four species have been thoroughly discussed with the Service. The following text summarizes those discussions, and reports the conclusions reached regarding each species. Also, mitigation measures described below are extrapolated from the Project FEIS. Attachment 2 provides additional information for these species.

Southwestern Willow Flycatcher (SWF); Least Bell's Vireo (LBV)

Habitat in the Project Area

Field surveys were conducted in spring 2000 to evaluate the extent of SWF and LBV habitat (including seepage-dependent vegetation) in the Project area. It was concluded that desert riparian habitat in the Dos Palmas Area of Critical Environmental Concern (ACEC) may be used by the SWF and LBV for migratory foraging and resting, but is unsuitable for breeding habitat because of its linear nature, the lack of saturated soil, and a paucity of dense vegetation with associated or underlying surface water or saturated substrate (McKernan 2000). About 2,000 acres of desert riparian vegetation are dispersed along the reaches of the Canal to be lined. They provide flyway resting sites for occasional transient and migrant SWF and LBVs, but no suitable breeding habitat. See Attachment 3.

Critical Habitat

The Service has identified critical habitat for both species. There is no critical habitat in the Project area.

Potential Effects

The proposed action would result in a change in the availability of seepage water that sustains desert riparian habitat in the Project area, particularly at the Dos Palmas ACEC. Without mitigation, up to 1,354 acres of desert riparian habitat could be affected and may become unavailable for potential use by migratory SWF and LBV.

Nevertheless, even without the proposed mitigation described in the FEIS, the occasional migrating SWF and LBV is capable of flying the entire length of the Project area (33.2 miles) without a stopover, as its estimated maximum flight distance without stopover is approximately 90 miles. Therefore, the Project is

not likely to affect the SWF or LBV. Additional stopover habitat exists outside of the Project area up slope of the Canal in the desert washes and to the north and south of the Project area (see Attachment 3).

Minimization and/or Mitigation Measures

Because post-lining conditions do not reduce resting habitat to the point that an adverse affect to these species would occur, no mitigation measures are required. However, as part of general Project mitigation for desert riparian habitat, 352 acres of mesquite would be planted and maintained. For these two species, this would represent an improvement over existing, and post-Canal lining conditions.

Yuma Clapper Rail (YCR); Desert Pupfish (DP)

Habitat in the Project Area

Surveys conducted during the spring (Reclamation 2000) found the YCR occupying marsh/aquatic habitat in the Dos Palmas ACEC, including the Upper and Lower ponds and associated flowing channels; the flowing reach of Salt Creek, from Highway 111 to the mouth of the Salton Sea, and in the vicinity of Frink Springs. A Clapper Rail chick was observed within the ACEC, indicating that breeding was successful at the site (Reclamation 2000). Approximately 456 acres of marsh/aquatic habitat is available for YCR use within the Project area. The Canal does not provide suitable habitat for the YCR.

The Canal does not provide suitable habitat for the DP, given its depth of several feet and moderate flow velocity. There have been no documented findings of DP in the Canal.

At the Dos Palmas ACEC, the DP occupies aquatic habitat in one of the Upper Ponds, reaches of perennial flow in the north fork tributary to Salt Creek, and in Salt Creek itself. Pupfish are also present in a CDFG aquatic refuge at Oasis Springs, which is within the ACEC. Oasis Springs is sustained by artesian flows independent of seepage from the Canal, and as a result, DP habitat at this site would not be affected by the Project.

A study of DP activity at the ACEC and in the vicinity of the Salton Sea was conducted from June through September 1999. Observations confirmed that the DP was present in the lower reach of Salt Creek (Reclamation 1999). Further, over the period, the

density of DP in this reach declined as fish moved to a shoreline pool connecting it and the Salton Sea. This decline was attributed to hot weather, which caused deterioration of habitat in Salt Creek and loss of aquatic vegetation as a food source.

Critical Habitat

The Service has not designated critical habitat for the YCR. Pupfish-occupied sites at the Dos Palmas ACEC have not been designated as critical habitat.

Potential Effects

The Project would have an indirect effect on YCR habitat as a result of the decreased availability of Canal seepage water that partially sustains marsh/aquatic habitat in the area. Without the implementation of minimization and mitigation measures, changes in available Canal seepage water in the ACEC and at the Frink Springs/Hot Mineral Spa could affect approximately 122 acres of marsh/aquatic habitat that is presently sustained by this flow.

With regard to the DP and without the implementation of minimization and mitigation measures, the Project would result in a decrease in seepage water that sustains marsh/aquatic habitat in the Dos Palmas ACEC watershed. The unmitigated loss of Canal seepage has the potential to adversely affect the quality and quantity of aquatic habitat available to the DP at the ACEC and in Salt Creek.

Minimization and/or Mitigation Measures

In the Dos Palmas ACEC, particularly in the Dos Palmas Preserve, the impacts to marsh/aquatic habitat would be minimized and mitigated. To accomplish this, water will be supplied up slope of the existing marsh/aquatic habitat areas and allowed to flow downstream through the marshes and ponds, where it will be collected into the mainstream of Salt Creek to maintain desert Pupfish habitat. This plan minimizes impacts to 105 acres of marsh/aquatic habitat.

Seventeen acres of marsh would be constructed in the ACEC to mitigate those areas that would be permanently lost in the ACEC (13 acres), near Frink Springs (2 acres) and near Hot Mineral Spa (2 acres). These marsh areas that would be lost in the Frink

Springs and Hot Mineral Spa area have been identified as unsuitable for the YCR (See Attachment 2). Thus the mitigation for the Project represents an improvement over existing conditions.

The flow regime in Salt Creek at USGS Stream Gauge 10254050, near the mouth of Salt Creek near the Salton Sea will be maintained. Based on measured stream flows from 1996 through 1999, the mean flow at the USGS gauge is approximately 623 acre-feet per year. Attachment 2 describes how the Project proposes to maintain the existing hydrologic regime in Salt Creek, from the upper ponds and marsh to the stream gauge.

Prior to Project implementation, a source(s) of water would be identified and a delivery system would be designed and constructed within the Dos Palmas ACEC. Potential sources of supply may include any or all of the following: (1) Canal water diverted to the ACEC; (2) water supplied from existing wells and springs; and (3) water from new non-potable wells in the local artesian aquifer. The potential water source(s) would be sustainable to ensure the long-term success of the avoidance, minimization, and mitigation measures.

Vegetation management in the Dos Palmas ACEC is a future action subject to a future decision regarding whether or not it is feasible. Thus, it is not part of this consultation, and it will be addressed in future section 7 consultation with the Service.

Additional Commitments

On October 15, 2001, Messrs. Bill Rinne, Don Young, and Bruce Ellis of Reclamation discussed with you and Ms. Carol Roberts the advantage of conducting surveys for the Desert Tortoise and Razorback Sucker during final design to support our determination of "not likely to adversely affect" these two species. Based on this discussion, the following commitments are made:

Desert Tortoise:

- Overland pipelines will be confined to the Canal cross-section, its embankments, operation and maintenance roads, and waste embankments. However, based on future surveys, we request approval to use any land that is not Desert Tortoise Habitat.
- Service-protocol Desert Tortoise Habitat and occupancy surveys will be conducted during the Spring of 2002. Concrete batch plants and construction staging/lay-down

areas would be subsequently sited in areas that are not occupied and are not potential Desert Tortoise Habitat, or are considered to be unoccupied Desert Tortoise Habitat of low value. Prior to occupation of selected sites, clearance surveys will be conducted, and tortoise fencing would be erected to prevent future tortoise access. Tortoise fencing would also be provided across washes after clearance surveys have been conducted.

- A Desert Tortoise Awareness Program will be mandatory for all employees having the potential to be present in the Project area. Employees will be instructed in how to identify the species and sign and how to react should a transient individual or burrow be unexpectedly encountered during construction. If an individual or burrow is found during construction, all activity will halt, and Reclamation would immediately contact the Service for guidance. Note: Additional information on the Desert Tortoise is provided in Attachment 1.

Razorback Sucker:

Attachment 1 reports the best available scientific information regarding the presence of the Razorback Sucker in the Canal. Based on this information, we believe it is extremely unlikely that Razorback Suckers are at risk of being affected by the Project. Nevertheless, the following commitments are made with regard to the Razorback Sucker:

- During the winter of 2001/2002, reaches of Canal proposed to be lined will be sampled to determine whether or not the Razorback Sucker is present (see Attachment 4). Sampling methods will be subject to the Service and CDFG approval and permit processes. If the species is found, Reclamation will immediately halt work and seek guidance from the Service.
- We will develop an alternate construction method that would use sheet piling and cofferdams for de-watering one side of the Canal during construction and allowing uninterrupted flow in the other side of the Canal, in order to accommodate potential Razorback Sucker presence. A decision on whether such a technique will be necessary would be made during final design and after fish sampling has concluded. This Proposal offers an opportunity to minimize impacts to the Razorback Sucker should sampling results indicate the species' presence in the Canal.

- In lieu of fish salvage, which would be necessary during de-watering, we propose to direct all fish that occupy a specific reach to nearby aerated, existing siphons, where they would be maintained until construction in that reach is completed and flows have resumed. This Proposal offers an option for sustaining individuals of non-listed species as well as Razorback Suckers that might be present.

Determination

We conclude, based on the best available scientific information regarding the presence of listed species in the Project area of effect and the measures to be incorporated into Project design to avoid, minimize, and/or mitigate potential effects, that adverse impacts are extremely improbable. Thus, we request your concurrence on our determination that the Project "may affect, but is not likely to adversely affect" the species identified earlier in this Memorandum.

Reclamation would like to issue a Record of Decision (ROD) to conclude the NEPA review process for the Project in November 2001. Your concurrence on our determination will be referenced in the ROD. Because of this, we request your review and response as soon as possible. We appreciate the continued assistance and cooperation of you and your staff in this endeavor.

If you have additional questions, please contact Mr. Don Young of my office at 928-343-8159 or email, dyoung@lc.usbr.gov.

Jim Cherry

Attachments

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Area Manager, Boulder Canyon Operations Office
Boulder City NV, Attention: BCOO-1000 (Rinne) (w/atts)

Area Manager, Phoenix AZ
Attention: PXAO-1500 (Ellis) (w/atts)

1400 (w/atts)
7000 (w/atts)
7001
7210 (w/atts) (Campbell)

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Biological Evaluation

1. Introduction

This Biological Evaluation (BE) presents data, information, and analyses that supplement that which has been previously provided to the Service in correspondence dated February 23 and May 25, 2001; meetings and informal discussions between March and early August 2001; and conference calls concerning the Section 7, Endangered Species Act (ESA) consultation for the Coachella Canal (Canal) Lining Project (Project).

In consultation meetings with the Service, concerns were raised about the potential for Incidental Take of the desert tortoise if construction activities extend beyond the Canal, its embankments, operation and maintenance roads, and waste embankments; and the potential for Incidental Take of the razorback sucker because of entrainment in pumps or de-watering of portions of the Canal.

This report presents alternative options for Project construction, a revised impacts analysis for the desert tortoise and razorback sucker, measures designed specifically to avoid and minimize potential effects to the fullest extent practicable, and information needed by the Service to concur with Reclamation's determination of **"may affect, not likely to adversely affect" these species.**

2. Revised Project Description

Reclamation and the Coachella Valley Water District (CVWD) propose to line the earthen reaches of the Coachella Canal, between siphons 7 and 14 and siphons 15 and 32 with concrete. This action would conserve approximately 30,850 acre-feet of water lost annually from the Canal as seepage. A specific quantity of the conserved water would be utilized by the Department of the Interior to facilitate implementation of the San Luis Rey Indian Water Rights Settlement Act (Public Law 100-675, November 17, 1988, as amended). Remaining quantities of water equal to the remaining amount of water conserved would be utilized in southern California to meet present water demand and to assist the State in attaining the goals of California's draft Colorado River Water Use Plan.

The National Environmental Policy Act (NEPA) review of this Project will conclude with a Record of Decision (ROD) regarding implementation of the Project. Construction would be expected to begin prior to the end of calendar year 2002, approximately a year following initiation of design, and continue through 2004.

2.1 Area of Potential Effect and Alternatives Evaluated

The Canal lies on the eastern edge of the Salton Trough, a topographic and structural depression about 130 miles long and up to 70 miles wide. The Trough is a landward extension of the Gulf of California, from which it is separated by the broad fan delta of the Colorado River (Loeltz et al. 1975). In the Project area, the Canal traverses sloping desert land between the bases of the Chocolate and Orocopia Mountains and the Salton Sea. See Figure 1-1 in the Final EIS/EIR for the Coachella Canal Lining Project. For the purposes of this analysis the area of potential effect with regard to these two species includes: the existing Canal cross-section and its embankments, operation and maintenance roads, and waste embankments (Canal) .

The proposed locations of concrete batch plants and staging areas have not yet been identified. Therefore, mitigation measures described below are commitments to prevent impacts to the Desert Tortoise. As part of the joint NEPA/California Environmental Quality Act (CEQA) review process, Reclamation and CVWD examined the potential for impacts from four alternatives: *Conventional Lining* (the preferred alternative), *Underwater Lining*, *Construction of a Parallel Canal*, and *No Action*.

For each alternative, measures were identified to compensate for potential impacts to fish and wildlife habitat. This BE describes potential effects to the desert tortoise and razorback sucker from implementation of either of two methods to construct the Conventional Lining Alternative, which was the preferred alternative in the Draft Environmental Impact Statement/ Environmental Impact Report (DEIS/DEIR), and Final EIS/EIR (FEIS/FEIR).

Conventional Lining would require either 1) diversion of Canal water through temporary bypass pipelines or channels around each earthen section that would be drained, permitting concrete lining of the earthen sections to take place under dry conditions (pump-around), or 2) redirection of Canal water in each reach through temporary cofferdams installed between siphons, thus, permitting work to take place under dry conditions (cofferdam).

In the latter case, the Canal water would be confined to one side, and construction would occur on the dry side of each earthen reach. Specific conduit/channel separation mechanisms, such as vinyl or metal sheet piling, would be used to divert water around the work area between each Canal reach and permit installation of the concrete lining under dry conditions without interrupting water service to the CVWD service area. The use of the "pump-around" or "cofferdam" variations may depend on the particular

reach being lined. Most importantly, construction work would take place within the Canal embankments, operation and maintenance roads, and waste embankments.

2.2 Pump-Around Method

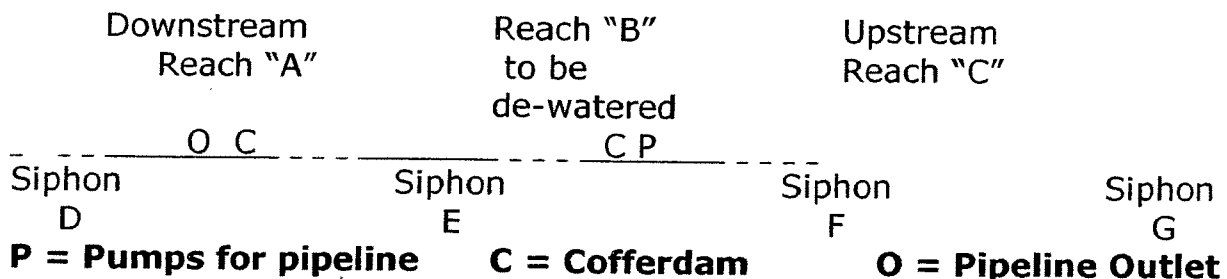
Because of concerns about encroachment on terrestrial habitat, the pump-around construction method described here differs from that which was described in the FEIS. The objective of the modification is to clarify procedures to ensure that no fish are stranded in a Canal reach to be de-watered, and to create more distance between the fish in the Canal and the bypass pumps, therefore minimizing any chance for entrainment and allowing for the preservation of the fish in the Canal.

Although there is no scientific evidence to support the presence of razorback suckers in the reaches of the Canal that will be lined, the pump-around method described below would minimize the potential for impacts to the razorback sucker in the unlikely event that one should be present.

A reach of Canal is defined as a linear area that extends between an upstream siphon and a downstream siphon. A specific reach to be de-watered for lining lies between an upstream reach and a downstream reach, which may or may not be lined. To de-water a reach, water flowing there would be pumped through a temporary bypass conveyance facility from upstream of the reach to a location downstream of the reach. It is estimated that construction of lining in each reach between the siphons will be a 30-day effort.

See the diagram and description of the pump-around method that follows.

<<<<<< Flow Direction



Prior to the start of pumping to de-water a Canal reach, fish will be directed out of the area and prevented from re-entering the reach during de-watering. The following sequence of events describes the process to ensure that no fish, including razorback suckers, are stranded in the

de-watered portion of the Canal. This process moves fish away from the construction area in both upstream and downstream directions to minimize the number of fish that may be concentrated in the siphons during construction.

Details of the construction process are described below:

- a. Place fish screen over the Siphon opening at the upstream or inlet end of Siphon F.
- b. Direct all fish, using approved techniques, from the upstream end of siphon F through Reach "C" into the downstream or outlet end of siphon G, and place a fish screen over the outlet of Siphon G.
- c. Direct as many fish as possible from siphon F into downstream Reach "B" using approved procedures.
- d. Place a fish screen over the outlet or downstream end of siphon "F".
- e. Direct fish, using approved procedures, to move from the outlet of siphon F through Reach "B" into the inlet of siphon E and place a fish screen over the inlet of siphon E.
- f. Direct as many fish as possible, using approved procedures, out of Siphon E into reach "A", and place a fish screen over the outlet of siphon E.
- g. Direct the fish, using approved procedures, to move from the outlet of siphon E through Reach "A" and into the inlet of Siphon D. Place a fish screen over the inlet to siphon D.
- h. Pumps would then be installed just upstream of the inlet of siphon F, leaving enough room for installation of a cofferdam once pumping has started. A temporary bypass conveyance facility or pipeline would be installed around reach "B" and continue to a location just downstream of a cofferdam installed just below the outlet for Siphon E.
- i. Once the lining has been completed, cofferdams would be removed and the newly lined reach filled with water.
- j. Repeat the above steps for each subsequent reach of canal to be lined, taking full advantage of the appropriate fish screens already in place and removing the fish screens in the reach that is not being de-watered or is not adjacent to the reach being de-watered.

Siphons will not be de-watered; water in the siphons will be aerated to

ensure adequate levels of dissolved oxygen for the benefit of any fish that remain in those siphons where water is not flowing. Additional means of freshening the water in the siphon may be employed if necessary.

2.3 Sheet Piling Method

Instead of constructing a temporary bypass conveyance facility, the existing Canal could be separated into two sections with the installation of sheet piles. Canal flows could be directed into one side of the bifurcated Canal while the other side is isolated with installation of a plug or cofferdam at each end of the sheet piling. There may be some excavation into the Canal embankments to prepare the dried out portion of the bifurcated Canal for lining, and or to increase flow capacity through one side of the bifurcated canal so flows can continue while the other section of the Canal is lined. The limited excavation would be temporarily placed on the existing Canal berms. Flow through the siphons would not be affected. Once de-watered, the dried out portion of the bifurcated Canal would be lined while flows are bypassed along the other side of the sheet piling.

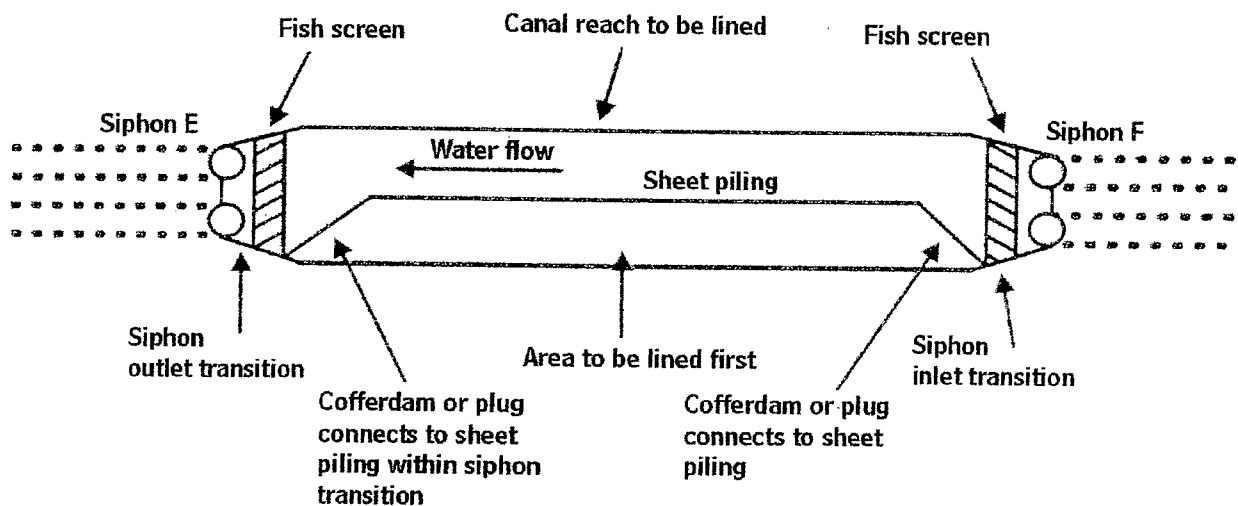
During construction, water would remain flowing in the Canal reaches and siphons, thereby continuing to provide habitat for aquatic species. The reach of Canal to be de-watered for construction would be plugged at the upstream end and downstream end of the sheet piling, away from the siphon inlet and outlet, to permit continued flow through both siphon barrels. Once plugging is accomplished the isolated portion of the Canal would be de-watered by pumping water into the flowing portion of the Canal. When construction of the de-watered portion of the Canal reach is finished, the upstream and downstream plugs for the newly lined section of the Canal reach would be removed simultaneously with the installation of plugs on the bypass side of the Canal, thus reintroducing water to the newly lined Canal section while de-watering the temporary bypass channel. The area that served as the bypass channel would then be filled with previously excavated excess earthen material as necessary to form the final canal prism. During these operations the water flow would be controlled using a plug, cofferdam, or other flow control device.

The following sequence of events describes the process to ensure that fish are not present in the portion of the Canal reach to be de-watered. The construction process would minimize the potential for impacts to razorback suckers in the unlikely event that one is present in a reach of Canal being lined.

Refer to the drawing on the following page when reviewing the procedure for protecting all fish in the Canal when using the Sheet Piling Canal Lining Construction Process.

- a. Fix fish screen over siphon F outlet at upstream end of the Canal Reach to be lined.
- b. Direct fish to move from the siphon F outlet at the upstream end of the Canal reach to be lined, downstream and into the siphon E inlet.
- c. Fix fish screen over siphon E inlet. All fish in the Canal Reach to be lined will have been relocated at this time.
- d. Install sheet piling to bifurcate the Canal from the edge of the siphon transition structure at the upstream and downstream end of the Canal Reach to be lined.
- e. Install plugs or cofferdams within the siphon transitions for siphons E and F, such that flow into both siphon barrels is unimpeded.
- f. De-water the portion of the Canal to be lined by pumping water into the flowing portion of the bifurcated Canal.
- g. Construct newly lined section of the Canal.
- h. Remove plugs or cofferdams blocking the newly lined section of the Canal and install plugs on the opposite side of the bifurcated canal to allow de-watering of the unlined portion of the Canal Reach.
- i. De-water the unlined portion of the Canal Reach formerly used as a bypass channel by pumping water into the newly lined Canal section.
- j. Fill the abandoned bypass channel, if necessary to form the final portion of the new canal prism, with material from existing spoil piles.
- k. Remove sheet piling (optional).
- l. Remove fish screens previously installed at the openings of each siphon.
- m. Repeat the above steps for each reach to be constructed.

Sheet Piling Canal Lining Construction Process



A temporary 10-acre concrete batch plant and a temporary 5-acre staging area would be required in support of construction activities. To the extent practical, these would be sited in areas that are already disturbed. Potential sites for these areas would be surveyed for desert tortoise in the Spring of 2002, and any sites with tortoise burrows or sign would be eliminated from further consideration. The final locations of the batch plant and staging areas would be in areas where no tortoises or sign are found and the Desert Tortoise Habitat is of poor quality. In addition, pre-construction surveys would be carried out to insure no tortoises are present in the area prior to construction. Exclusion fencing would be erected around the batch plant and staging area sites and maintained for the duration of the construction activities. Similarly, preconstruction surveys and tortoise barriers would be used in the areas of siphon crossings to prevent desert tortoise access. For

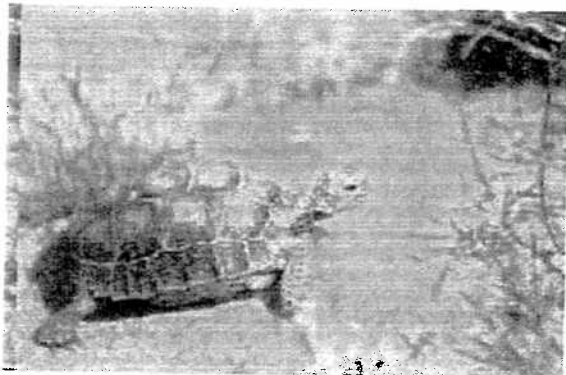
both construction options, the construction area would be accessed by existing paved and unpaved maintenance and local roads along the reaches to be lined.

3. EFFECTS ON LISTED SPECIES

3.1. Threatened Desert Tortoise

Species Description

The desert tortoise (DT) (*Gopherus agassizii*) is a large, herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts, and in the states of Sonora and Sinaloa, Mexico.



In a final rule issued on April 2, 1990 (55 Federal Register 12178), the Service listed the Mojave population of the DT as "threatened." The Mojave population is found in California, Nevada, and north of the Colorado River in northwestern Arizona and southwestern Utah.

Adult DTs average about 15 inches long (measured in a straight line across the shell), and they can weigh up to 15 pounds. Desert tortoises can live to at least 80 and perhaps well over 100 years. Desert tortoises spend over 90 percent of their lives underground. They hibernate from October or November until February or March, usually in separate burrows. In the summer, they use their burrows to escape the extreme conditions of the desert. The DT is most active in California during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rainstorms. They generally seek food during the day, feeding primarily on annual wild flowers, cacti (where available), herbaceous perennials (shrubs), and legumes like lupines, lotus, and milkvetch. DTs get water from the plants they eat, but they also need to drink free-standing water to hydrate themselves. Within a few hours or minutes of rainfall, they will dig water catchments or go to natural places where water collects in boulders to drink.

The DT populations have declined considerably during recent years throughout most of its range. The decline is probably due to a number of

reasons, including a disease condition exacerbated by the stress of several drought seasons, loss of habitat, predation by common ravens (*Corvus corax*), and direct disturbance by humans.

Habitat and Range

The Service has stated that, for the purpose of the ESA, the DT habitat is defined as (1) areas with the presence of DT or DT "sign" (scat, tracks, burrows, courtship rings, drinking sites, mineral licks, carcasses, or bone fragments, eggs, or eggshell fragments, etc.) that are likely to be at least portions of home ranges, (2) dispersal corridors, or (3) habitat identified in a recovery document (USFWS 1990).

The extent of the home range (total habitat area used to fulfill life functions) of the DT depends upon various factors such as the densities of food plants, and the age, size, and gender of the DT. These factors and presumably the size of the home range vary throughout the species' range. There is some evidence that DT utilize their feces in making home ranges, dens and burrows, perhaps detecting secretions from cloacal glands. It has been suggested that DT rarely move more than two miles from their natal nest in their entire lives. DT occur in the California desert from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet

The Mojave population of the DT is widely distributed throughout the Mojave and Colorado deserts from below sea level to elevations of over 4000 feet. It is most common in desert scrub [creosote bush (*Larrea tridentata*) burro bush (*Ambrosia dumosa*), cactus and saltbush (*Atriplex spp.*)], desert wash, and Joshua tree (*Yucca brevifolia*) but occurs in almost every desert habitat except on the most precipitous slopes. Highest DT densities are achieved in creosote bush communities having extensive annual wildflower blooms.

Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from two to eight inches, diversity of perennial plants is relatively high, and production of ephemerals is high. Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. In California, DT are typically associated with gravelly flats or sandy loams, but are occasionally found in windblown sand or in rocky terrain. (http://ventura.fws.gov/speciesaccount/reptiles/des_tort.htm).

Habitat in Project Area

Information on the extent of potential DT habitat in the Project area is scant. In the 1994 Draft EIS for the Project, Reclamation reported that the Project area was marginally suitable habitat for the DT, based on the results of a Service survey (USFWS 1988), which noted the presence of a sandy loam substrate between siphons 22 and 23 and 29 and 31 (see Attachment 3). Windshield surveys of the reaches potentially affected by the Project indicate that only a few areas appear to be potential DT habitat (Reclamation 2000; CVWD 2001).

Reclamation reviewed a BLM DT habitat map and the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) distribution model map (USFWS 2001a) to obtain a perspective on the extent of suitable habitat in the Project area. The BLM map categorizes the entire area of potential effect assumed for analysis in this report as Category 3 habitat, where the probability of encountering DTs or DT sign is low. According to the Service (1990), Category 3 areas lie within the historical range of the DT, but because of habitat modification or other factors, DT populations have declined and may no longer be present.

The map derived from the HCP model indicates the potential for DT habitat on only the north side of the Canal. According to the map, the nearest confirmed DT occupation was observed 9 miles due north of siphon 29. The most heavily occupied locations were approximately 24 miles due north of the Project area. Sign was reported 12 miles northeast and 12 miles northwest of the Canal. Also, another report of a DT burrow and a pallet immediately adjacent to the north side of the Canal along the railroad alignment was documented in a Draft EIS for the Eagle Mountain Landfill Project (Recon 1990a).

To determine the extent of occupied and potential DT habitat in the Project area, Reclamation commits to the following prior to implementation of construction:

1. During the winter of 2001/2002, a Service-approved, qualified biologist will screen the Project area with the objective of determining the extent of potential DT habitat.
2. Potential habitat will be surveyed by a Service-approved, qualified biologist for DT occupation and sign during the spring of 2002, in accordance with Service protocols. Survey results and maps will be

submitted for FWS and CDFG review and comment. Concrete batch plants and staging/lay-down areas would be sited at locations along the Canal that are low potential and/or poor quality DT unoccupied habitat and are acceptable to the Service and CDFG.

Critical Habitat

Critical habitat is defined in section 3(5)(A) of the ESA as the specific areas within the geographical area currently occupied by a species on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection. Provisions also are included for designating critical habitat outside areas currently occupied. Designations of critical habitat must be based on the best scientific data available and must take into consideration the economic and other relevant impacts of specifying any particular area as critical habitat [Section 4(b)(2)].

The Service designated critical habitat for the DT on February 8, 1994 (59 Federal Register 5820). The designated area is defined in 50 CFR 17.95(c) and includes specific portions of lands in Imperial, Riverside, and San Bernardino Counties in California. None of the Project area is within the designated area of critical habitat.

Potential Effects

Implementation of the proposed Project could directly impact the DT by (1) physical harm to individual DT, with potential mortality, (2) temporary disturbance of habitat, and (3) loss or displacement of habitat features, such as burrows. The following activities have the potential to directly affect the DT:

- vehicle operation and traffic, which may harm individuals unable to avoid vehicles and/or cause burrow collapse;
- batch plant and staging area occupation, which would remove vegetation available for foraging and displace residents, if any, and;
- human presence.

Indirect effects to the DT may result from the increased noise from vehicle traffic and human presence associated with construction activities. These may stress the DT, and in turn, may affect subsequent foraging and breeding behaviors.

Because of occupational health and safety concerns, construction could occur during very early morning or late evening hours during the hottest months of the year. Lighting used at such times would be directed primarily on the itself, and adjacent DT habitat, if any, would not be expected to be affected.

Avoidance and Minimization Measures

The following measures will be implemented to prevent impacts to the DT:

- Construction, including placement of overland pipelines, would be confined to the Canal and its embankments, operation and maintenance roads, and waste embankments. These constraints would prevent encroachment in DT habitat and reduce chance encounters with transient individuals.
- DT habitat and occupancy surveys will be conducted using Service protocol during the spring of 2002. Concrete batch plants and staging/lay-down areas would be sited at locations along the Canal that are low potential and/or poor quality DT unoccupied habitat that are acceptable to the Service and CDFG. Tortoise-proof fence will be installed at batch plant and staging/lay-down sites and at washes along the Canal to prevent DT access.
- A Desert Tortoise Awareness Program will be mandatory for all employees having the potential to be present in the Project Area. Employees will be instructed in how to identify the species and sign and how to react should a transient individual or burrow be unexpectedly encountered during construction. If an individual or burrow is found during construction, all activity will halt, and Reclamation would engage in formal consultation with the Service to accommodate potential incidental take of the species.
- Clearance surveys for DT would be conducted by a Service-authorized biologist immediately prior to occupation of batch plant sites, staging/lay-down areas, and siphon crossing set-up sites.
- Burrows and occupied habitat beyond the limits of the work area would be flagged for easy recognition by all who occupy the area.

3.2 Endangered Razorback Sucker (RZB)

Species Description

The RZB (*Xyrauchen texanus*) is a medium-sized freshwater fish, endemic to the upper and lower Colorado River basins from Wyoming to Mexico, that was listed by the Service as an endangered species on October 23, 1991 (56 Federal Register 54927), following over 10 years of research and

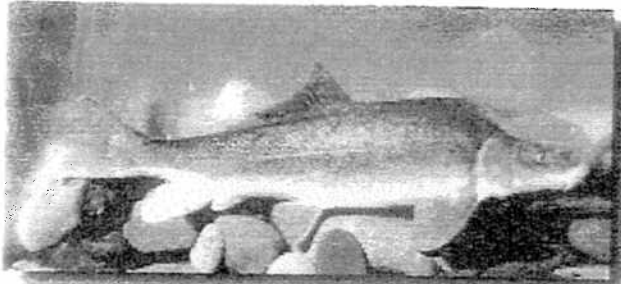


Photo courtesy of Colorado Division of Wildlife

Razorback suckers evolved an estimated 4 million years ago.

studies. The RZB was historically distributed throughout the mainstream of the river and along its major tributaries.

At present, the species is found in isolated segments of the Green and Colorado Rivers in the upper Colorado River basin, and in portions of Lakes Mead, Mojave, and Havasu; and Senator Wash Reservoir in the lower

Colorado River basin (Minckley, et. al, 1983).

One of the largest suckers in North America, the RZB can weigh up to 13 pounds and grow to lengths exceeding 3 feet. The RZB is brownish-green with a yellow to white-colored belly and has an abrupt, bony hump on its back shaped like an upside-down boat keel.

The RZB population has declined substantially over its range in the past 80 years because of major alterations in its habitat, fragmentation of the river system with dams, and the introduction of non-native predator species to the ecosystem.

Habitat and Range

Except during breeding season, adult RZB may be found widely dispersed throughout the Colorado River and its lakes and backwaters. A wide range of movements has been recorded in various radiotelemetry studies in both the upper and lower Colorado River basins. However, some individuals were relatively sedentary and over the course of a year strayed no more than a few miles from their original point of capture (Minckley et al. 1991).

Lake Mohave has the largest single population, currently estimated to contain less than 25,000 adults. For the entire reach of the Colorado River downstream of Lake Mohave, including associated backwaters and side channel habitats (except Senator Wash Reservoir), confirmed records exist for capture of only 42 adult RZB between 1962 and 1988 (Marsh and Minckley 1989).

Habitat in Project Area

There is no scientific evidence that the RZB is present in the reach of Canal that is proposed to be lined.

Aquatic inventories of the Canal in 1980 and 1984 revealed the presence of a total of 16 species of fishes in the Canal (Mueller et al. 1984). The RZB was not found in either of these surveys. Intensive sampling of the fish population in the first 49 miles of the Canal also reported no observations of the RZB (CDFG 1974).

The RZB has been observed infrequently during outages for maintenance in both the Coachella and All-American Canals in California and in a small regulatory storage reservoir near Lake Cahuilla, though none have been identified during electro-shocking surveys (personal communication, Paul Beatty, former CVWD Biologist, with Don Mitchell, Coachella Valley Water District, July 18, 2001). There were no observations of the RZB during a 1-mile underwater-lining demonstration project between siphons 14 and 15 from 1989 to 1991. Also, no RZB were reported as observed during construction of another 49 miles of parallel in the late 1970's. The chances of finding a RZB in the Canal is extremely remote. However, there is the possibility that the Canal may provide aquatic habitat for transitory RZBs based upon its connectivity to the Colorado River, where RZBs are known to occur.

Critical Habitat

The Service has defined critical habitat for the RZB sucker in 50 CFR 17.95(e). The Canal is not critical habitat for the RZB.

Potential Effects

By implementing the proposed Project construction methods, direct impacts to the RZB, such as entrainment in pumps or stranding due to de-watering earthen Canal sections, would not be expected. An unknown degree of stress

may be experienced by individual suckers, if any are present, because their downstream movement would be temporarily (approximately 30 days) halted by confronting a fish screen in the Canal while the downstream reach is being lined. The siphons will be aerated to maintain dissolved oxygen concentrations suitable for the survival of fish species. Additional means of freshening the water in the Siphons may be employed if deemed necessary.

There are no apparent sources of indirect effects to the RZB. After the Canal is lined with concrete, the continued survival of the species, if any are present, would not be compromised by a lack of foraging area (i.e., the presence of concrete) because of the installation of the artificial reefs (such as tires) as part of the mitigation for effects to the general fishery.

Avoidance and Minimization Measures

The following measures will be implemented to prevent impacts to the RZB:

- Prior to construction, all project personnel will be required to complete a Service-approved Razorback Sucker Awareness program that addresses identification of the RZB and potential effects of construction.
- Construction would be carried out within the Canal and its embankments, operation and maintenance roads, and waste embankments. Either a pump-around or sheet-piling and cofferdam method would be used; the latter would allow a continuous flow of water to sustain aquatic species while the lining is being placed, thus, ensuring that fish would not be stranded.
- Fish screens will be inserted into the Canal one reach upstream of the reach to be lined, and one reach downstream of the reach to be lined to ensure that RZB are not entrained in pumps, should the pump-around method be used. The purpose of these screens would be to prevent fish from re-entering the reach of Canal to be lined.
- Under either construction option, as fish screens are inserted into the Canal and fish in each Canal reach to be lined are directed out of the reach by approved procedures prior to lining, a Service-approved biologist would be present. If a RZB is found, work would immediately cease, and the Service would be contacted for guidance before any work related to lining the Canal reach could continue.

- The construction of artificial reefs would benefit the Canal fishery and would ensure that suitable forage areas are available for the RZB, if any are present.

Survey Commitments

In order to further support Reclamation's conclusion of "not likely to adversely affect", fish sampling will be carried out in the fall/winter of 2001/2002. The proposed sampling plan is described below.

PROPOSAL TO SAMPLE COACHELLA CANAL LINING PROJECT AREA TO DETERMINE PRESENCE OF RAZORBACK SUCKER (*Xyrauchen texanus*)

Assumptions:

1. Negative capture of razorback sucker will **not** confirm the species is absent, but will provide additional information in support of Reclamation's conclusion with respect to potential adverse effects from the Project.
2. Appropriate Federal and State collecting permits will be procured in advance of sampling to allow potential vouchering of endangered razorback suckers.

Sampling stations:

Four stations will be located approximately equidistant along the reach if access points and in-structure (e.g. bridges, turnouts, etc.) are randomly available. If access and structure is highly clumped, sampling stations will be concentrated in those areas. Depending upon distribution of in-structures, sampling stations will be a minimum of 1 km and a maximum of 10 km in length (sampling will be dispersed over longer station lengths if structure is minimal). If it is determined that additional sampling coverage is needed, an additional 4 stations may be established, which would double the sampling effort (see sampling duration, below).

Sampling equipment:

Assuming boat access at each station, primary sampling will be by boat electro-fishing using either a Smith-Root DC single anode unit or a Coffelt AC electric seine. If water is not highly turbid, most electro-fishing will be

conducted at night. Between 1000-2000 seconds of electrified sampling will be conducted at each station. Depending upon availability of in-structure, up to six 60-ft, 1-in mesh trammel nets, and four 1-in mesh hoop nets will be set overnight at each station. Depending upon substrate uniformity, daylight sampling with a 3/4-in mesh bag seine will also be attempted at each station.

Sampling duration:

Each station will be sampled over the course of a single 24-hour period. Nets will be set in the afternoon and run and pulled the following morning. Electro-fishing will occur primarily during evening hours. Seining will occur either during afternoon or morning hours. In this manner, the four stations will be sampled consecutively over one 5-day work week (1st station sampling will begin Monday afternoon and last station sampling will end Friday morning). If it is essential that additional sampling effort be applied, a second 5-day sampling period will be scheduled.

Voucher specimens:

A small series (<30) of smaller specimens of each species encountered will be preserved on-site in 10 percent formalin to be deposited at the Arizona State University Collection of Fishes or another institution designated for curation of biological samples. Numbers of razorback sucker vouchers, if collected, will depend upon terms of Federal and State collecting permits. If razorback suckers are found during the sampling of the Canal, Reclamation would immediately contact the Service for further consultation.

4. CUMULATIVE EFFECTS

With regard to species listed under the ESA, cumulative effects are those expected to result from the incremental contribution of concurrent activities within an area of potential effect (Service 1990; 50 CFR 402.02). Within the Project area, there are no other known federal, state, local, or private actions planned within the foreseeable future whose effects might be additive to effects from the Project.

Desert Tortoise

Disturbance and/or destruction of habitat and direct mortality could be sources of adverse effects to the DT in the Project area.

To avoid impacting individual DTs and potential habitat on each side of the Canal, Reclamation plans to conduct construction of the Project within the existing canal, its embankments, operation and maintenance roads and waste embankments. However, some land areas adjacent to the Canal will be temporarily occupied by materials lay-down sites (staging areas), a concrete-batch plant site, and vehicle traffic. These sites will be located in unoccupied non Desert Tortoise Habitat areas or unoccupied Desert Tortoise Habitat of low value. Lay-down and concrete batch sites would be fenced to prevent DT access. Vehicles would travel on existing roads and within the levees and rights of way, and clearance surveys at these sites would be performed prior to their use (see Section 3.1).

In summary, after the surveys and identification of occupied habitat, disturbance of potential DT habitat would be minimized by the confinement of construction to the Canal, operation and maintenance roads, and waste embankments, implementation of mitigation measures, and the conduct of clearance surveys during construction. With this in mind, and because there are no other ongoing or planned actions to be implemented within the Project area that could also affect the species, cumulative effects would not be anticipated.

Razorback Sucker

Adverse effects to RZB are attributed primarily to loss of habitat due to impoundment and predation by non-native species. None of these sources of adverse effects are part of the proposed Project, and no activities of this kind are known to be proposed in the Project area by other entities concurrently with Project implementation. More importantly, there is no scientific evidence to demonstrate that the RZB exists within the reaches of canal in the Project area.

Because there would not be disturbance of potential RZB habitat, minimization measures would be implemented to prevent stranding and entrainment, and a Service-approved biologist would monitor construction activity within the Canal, there is a very low probability of adverse effects to the RZB. With this in mind, and because there are no other ongoing or planned actions to be implemented within the Project area that could also affect the species, cumulative effects would not be anticipated.

5. CONCLUSIONS

Desert Tortoise

The proposed Project **"may affect", but is not likely to adversely affect"** the continued existence of the DT in the Project area. This conclusion is based on the following observations:

- the Project area of effect comprises BLM Category III DT habitat, which is defined as "low density";
- previous surveys in the area have reported few observations of DT, burrows, and sign in the area of effect (see Section 3.1);
- protocol surveys in spring 2002 will confirm whether or not the DT is present in the area of potential affect;
- construction equipment and vehicles will operate on existing roads that have been surveyed immediately preceding use for presence of individuals and sign;
- construction will be confined to the Canal, its embankments, operating and maintenance roads and waste embankments, thereby avoiding encroachment in occupied or potential DT habitat; and
- measures (see Section 3.1) will be implemented and their effectiveness monitored to minimize the potential for effects on the DT and its habitat.

Razorback Sucker

The proposed Project **"may affect", but is not likely to adversely affect"** the continued existence of the RZB in the Project area. This conclusion is based on the following observations:

- there is no scientific evidence that demonstrates the RZB is present in the reaches to be lined (see Section 3.2);
- no RZB were observed or reported in fish census counts between siphons 14 and 15 during an underwater-lining demonstration project from 1989-91 and during construction of a parallel canal along a 49-mile reach of the original canal in the late 1970's;

- a fish-sampling survey conducted in winter 2001-2002 will indicate whether or not the RZB is present in the reaches of Canal to be lined;
- the proposed construction methods have been carefully designed to prevent stranding of the RZB;
- siphons that may be temporarily removed from service would be aerated to maintain dissolved oxygen concentrations to support the fish population, and other means of freshening the water may be implemented if deemed necessary;
- the installation of artificial (tire) reefs in the newly lined Canal would provide forage for aquatic species, including the RZB, if present;
- fish screens would be added at sufficient distances so as not to allow pumps to entrain or stress fish in each reach; and
- measures (see Section 3.2) would be implemented and their effectiveness monitored to minimize the potential for impacts to the RZB.

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Species Descriptions

1.0 Species Descriptions

1.1 Endangered Southwestern Willow Flycatcher (SWF)

Species Description

The Southwestern Willow Flycatcher (*Empidonax traillii*) measures about 5.75 inches (15 cm.) in length, and weighs only about 0.4 ounces (12 g.). Overall, it is roughly the size of a small sparrow. Both sexes look alike. The flycatcher's appearance is overall greenish or brownish gray above, with a white throat that contrasts with a pale olive breast. The belly is pale yellow. Two white wing bars are visible, but the eye ring is faint or absent. The upper mandible is dark, and the lower mandible light.

The SWF is an insectivore that forages within and occasionally above dense riparian vegetation, taking insects on the wing and gleaning them from foliage. The species has become endangered because of the extensive loss of its nesting habitat, and it is now extirpated across much of its former breeding range. A neo-tropical migratory bird, the SWF occupies breeding habitat from late April until August or September. It then migrates to wintering grounds in Mexico, Central America, and perhaps northern South America. Little is known about threats that exist in its wintering grounds.

The SWF was listed as endangered by the Service on July 22, 1997 (62 Federal Register 39129-39147). Changes in riparian plant communities have reduced, degraded and eliminated nesting habitat as a consequence of urban, recreational and agricultural development, fires, water diversion, and impoundment, channelization, livestock grazing, and replacement of native habitats by introduced plant species (58 Federal Register 39495). Brood parasitism by the brown-headed cowbird (*Molothrus ater*) is another significant and widespread threat to the SWF.



Habitat and Range

The SWF favors riparian habitat characterized by dense stands of intermediate-sized shrubs or trees, such as willow [especially Goodding's black willow (*Salix gooddingii*)], mule fat (*Baccharis salicifolia*), or arrowweed (*Pluchea sericea*), and having an over-story of scattered larger trees, such as cottonwood (*Populus fremontii*). Nesting habitat almost always contains or is adjacent to water or saturated soil. With the loss of such preferred habitat within its range, SWFs have been observed along the Colorado River utilizing salt cedar (*Tamarix* sp.) thickets with adjacent or subtending inundated and saturated soils for nesting.

(<http://bluegoose.arw.r9.fws.gov/birds/SWWillowFlycatcher/background.html>).

The SWF's breeding range includes southern California (from the Santa Ynez River south), Arizona, New Mexico, extreme southern portions of Nevada and Utah, extreme southwest Colorado, and western Texas. Records of probable breeding Southwestern Willow Flycatchers in Mexico are rare, and restricted to extreme northern Baja California del Norte and Sonora.

Habitat in the Project Area (Project)

Field surveys were conducted in spring 2000 to evaluate the extent of SWF habitat (including seepage-dependent vegetation) in the Project. About 2,000 acres of desert riparian **vegetation**¹ are dispersed along the reaches of the Canal to be lined. This vegetation provides flyway resting sites for transient and migrant flycatchers, but no suitable breeding habitat because of its linear nature, the lack of saturated soil, and a paucity of dense vegetation with associated or underlying surface water (McKernan 2000). Migration habitats for the SWF (and least Bell's vireo [LBV], see Section 1.2) are not well understood. However, existing information indicates that these species are capable of utilizing a variety of habitat to support themselves during migratory periods. Because the LBV is relatively more tolerant to a broader range of habitat variables than the SWF, the following evaluation of the suitability of migration habitat in the Project area focuses on the SWF. The evaluation is assumed to be valid for the LBV as well.

Observations have indicated that SWF migration habitat includes both riparian and non-riparian vegetation that is not suitable for nesting, including open

¹ This includes salt cedar/palm, salt cedar/arrow weed, salt cedar/honey mesquite, salt cedar/honey mesquite/palm, honey mesquite, screwbean mesquite, arrow weed, scrub screwbean mesquite/palm, cottonwood/willow, palm, and pampas grass/palm associations.

areas interspersed with shrubs, pastures, and woodlands near water (USFWS 2001b). Additionally, the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) recognizes several vegetation communities as potentially suitable migratory habitat for the SWF and the LBV, including desert dry wash woodland, mesquite hummocks, mesquite bosque, arrow weed scrub, and desert fan palm oasis woodland.

The areas down-gradient of siphons between each reach along the Canal currently support desert dry-wash woodland. It is unlikely that their value to migrant SWF or other birds would be adversely affected by the Project because the existing hydrology over and through the siphons would remain relatively unchanged following implementation of the Project.

Although the Project would lower the groundwater table adjacent to the desert wash habitat, the effects would likely be a slight reduction in habitat that may potentially result in site conditions similar to what was present prior to construction of the existing Canal. The most likely scenario is that the post-project surface and subsurface hydrology would continue to support the desert wash habitat along these areas as it has in the past.

Even at siphon 31, which is highly degraded from off-highway vehicle use, there is enough vegetative cover and structure to provide both shelter and a sufficient insect prey base for migrant SWF and LBV. All other desert washes down-slope of the siphons have similar, and often higher, wildlife habitat quality. Each of these washes is capable of providing migration stepping stones through the region as the birds seek suitable nesting areas. Note that the surveys focused on the potential for breeding habitat. Since breeding habitat was not identified, further attempts to locate individuals were not made.

Recently, the Service provided information that, according to studies of the Pacific slope flycatcher and other neo-tropical migrant bird species, it is estimated that migrating birds are capable of traveling about 91 miles (145 kilometers) on normal fat reserves. The birds typically stop to rebuild their fat reserves in suitable habitat having sufficient insect populations (e.g., desert riparian habitat, desert dry wash habitat, marsh habitat, etc.) and then continue with their migration (USFWS 2001c).

The neo-tropical migrants that were studied made ten stops from the San Francisco Bay to Mexico, indicating that one large habitat complex over a 30-mile distance is more than enough habitat for neo-tropical migrants. It was further explained by the Service that a large (i.e., over 300 acres) honey

mesquite habitat restoration effort in the already habitat-rich Dos Palmas ACEC would be a major improvement for migratory bird habitat (i.e., for SWF and LBV) in the Project area versus salt cedar, and that area would provide excellent stopover habitat and food sources for neo-tropical migrant species.

Critical Habitat

The Service designated critical SWF habitat in 50 CFR 17.95(b) (62 Federal Register 39129-39147). None of the Project area of potential effect comprises critical SWF habitat.

Potential Effects

The proposed action would result in a change in the availability of Canal seepage water that sustains desert riparian habitat in the Project area, particularly at the Dos Palmas ACEC. Without mitigation, up to 1,354 acres of desert riparian habitat could be affected and may become unavailable for use by migratory birds.

Nevertheless, even without the proposed mitigation to desert riparian habitat described in the following paragraphs, migrating SWFs are capable of flying the entire length of the Project area (33.2 miles) without a stopover, as their estimated maximum flight distance without stopover is approximately 91 miles. Therefore, the Project is not likely to affect the SWF.

Minimization and Mitigation Measures

Over the entire Canal length to be lined, an estimated 30,850 acre-feet of seepage would be conserved annually. Sufficient conserved Canal water (and up to about 2,000 acre-feet from other sources, e.g., groundwater) would be used to minimize the potential effects of changes in the availability of seepage water and to sustain the desert riparian habitat that the SWF uses for foraging and migratory stopovers. Mitigation to effects to desert riparian vegetation would be concentrated within and near the Bureau of Land Management's Dos Palmas ACEC.

Reclamation is committed to the design and implementation of minimization and mitigation measures to successfully minimize and compensate for the conserved seepage water and the potential for effects on seepage-dependent desert riparian habitat. Prior to construction, a Environmental Commitment Plan will be developed in cooperation with FWS, CDFG, and other resource agencies. The Plan will be based on knowledge and consensus about the

species, and the affected ecosystem. A description of these measures can be found in sections 3.5.4 and 3.8.3 of the April, 2001 Final Environmental Impact Statement/Final Environmental Impact Report for the Project.

Prior to Project implementation, a source(s) of water would be identified and a delivery system would be designed and constructed within the Dos Palmas ACEC. Potential sources of supply may include any or all of the following: (1) Coachella Canal water diverted to the ACEC; (2) water supplied from existing wells and springs; and (3) water supplied from new non-potable wells in the local artesian aquifer. Vegetation management in the Dos Palmas ACEC is a potential future action subject to a future decision. It is not to be considered as part of this consultation, and Reclamation will reconult should it become a foreseeable project.

1.2 Endangered Least Bell's Vireo (LBV)

Species Description

The LBV (*Vireo bellii pusillus*) is a small, olive-grey migratory songbird that nests and forages almost exclusively in riparian woodland habitats. Bell's vireos as a group are highly territorial and are almost exclusively insectivorous (<http://ventura.fws.gov/speciesaccount/birds>). Both high and low shrub layers are used as foraging substrate.

The LBV was listed as endangered by the USFWS on May 2, 1986 (51 Federal Register 16474). LBV historically occurred from the interior of northern California to northwestern Baja California, Mexico. Populations occurring in the Owens Valley, Death Valley, Sacramento-San Joaquin Valleys and Sierra Nevada foothills, and Tehama County have been completely extirpated (USFWS 1998).

Habitat and Range

The LBV is a neo-tropical migrant that breeds in low-elevation riparian habitat, particularly broad cottonwood-willow woodlands and mulefat scrub. It is usually found at less than 2,000 feet in elevation, although individuals have been reported at elevations as high as 4,200 feet, usually in desert areas. Most areas that have vireo populations are in early stages of succession where most woody vegetation is 5 to 10 years old (<http://www.r5.fs.fed.us/cleveland/res/vibepu.htm>).



Recon (1990b) defined the following parameters for LBV habitat: riparian vegetation wider than 30 feet; shrub cover greater than 10 percent; and tree cover greater than 10 percent.

The Service (1998) considers quality LBV habitat to include the following characteristics: dense vegetative cover within 3 to 6 feet of the ground; dense, stratified upper canopy for foraging, usually willow-dominated; and the presence of undisturbed upland habitat adjoining the riparian area, providing an additional area for foraging.

Like the SWF, the LBV favors riparian habitat characterized by dense stands of intermediate sized shrubs or trees, such as willows [especially Goodding's black willow (*Salix gooddingii*)], mule fat (*Baccharis salicifolia*), or arrowweed (*Pluchea sericea*), and having an over-story of scattered larger trees, such as cottonwoods (*Populus fremontii*). Nesting habitat almost always contains or is adjacent to water or saturated soil.

(<http://bluegoose.arw.r9.fws.gov/birds/SWWillowFlycatcher/background.html>)

A low, dense shrub layer is considered essential for LBV nesting, and a large degree of vertical stratification is preferred. Willows are the most commonly used vegetation for this need. Most nest sites are located near the edges of thickets. Nest height on average is 3 feet above the ground. Males are site-tenacious and return to the same site to nest in succeeding years. Average territory size is about 2 acres.

Habitat in the Project Area

Field surveys were conducted in spring 2000 to evaluate the extent of LBV habitat (including seepage-dependent vegetation) in the Project APE. It was concluded that most desert riparian habitat in the ACEC may be used by LBV for migratory foraging and resting, and is unsuitable for breeding habitat because of its linear nature, the lack of saturated soil, and a paucity of dense vegetation with associated or underlying surface water (McKernan 2000). About 2,000 acres of desert riparian **vegetation**² are dispersed along the reaches of the Canal to be lined. They provide flyway resting sites for transient and migrant LBVs, but no suitable breeding habitat. Refer to Section 1.1 for an evaluation of suitable migratory bird habitat for these species.

² This includes salt cedar/palm, salt cedar/arrowweed, salt cedar/honey mesquite, salt cedar/honey mesquite/palm, honey mesquite, screwbean mesquite, arrowweed, scrubscrewbean mesquite/palm, cottonwood/willow, palm, and pampas grass/palm associations.

Critical Habitat

Critical habitat for the LBV was designated by the Service on February 2, 1994, (59 Federal Register 4845). It includes reaches of ten streams in southern California encompassing approximately 38,000 acres (50 CFR 17.95 [b]). The primary constituent elements of critical habitat necessary for the conservation of the LBV are those physical and biological habitat features that support feeding, nesting, roosting, and sheltering. These habitat features can be described as riparian woodland vegetation that generally contains both canopy and shrub layers, and includes some associated upland habitats (59 Federal Register 4845). There is no critical LBV habitat in the Project area.

Potential Effects

The proposed action would result in a change in the availability of seepage water that sustains desert riparian habitat in the Project area, particularly at the Dos Palmas ACEC. Without mitigation, up to 1,354 acres of desert riparian habitat could be affected and may become unavailable for use by migratory LBV.

Nevertheless, even without the proposed minimization and mitigation measures described in the following paragraphs, migrating LBVs are capable of flying the entire length of the Project area (33.2 miles) without a stopover, as their estimated maximum flight distance without stopover is approximately 90 miles (see Section 1.1). Therefore, the Project is not likely to affect the LBV.

Minimization and Mitigation Measures

Mitigation of desert riparian habitat impacts from the Project would be the same as those described in Section 1.1 for the SWF.

1.3 Endangered Yuma Clapper Rail (YCR)



Species Description

The Yuma Clapper Rail (*Rallus longirostris yumanensis*), one of the smaller clapper rail subspecies, is a marsh bird with long legs and a short tail. Males are generally 8 or 9 inches tall, and females are slightly smaller. The YCR has a long, slender beak that is slightly curved downward. Anteriorly, coloration is a mottled brown on a gray background. Its flanks and

underside are dark gray with narrow vertical white stripes that produce a barred effect.

The YCR inhabits freshwater or brackish stream-sides and marshlands. It is typically associated with heavy riparian and marsh vegetation, and it requires a wet substrate, such as mud flats, sandbars, or a slough bottom, covered rather densely, especially at ground level, with mostly mature herbaceous or woody vegetation that exceeds 37.5 cm. (15 in.) in height.

Introduced crayfish have become common food for the YCR. The species also feeds upon fish, frogs, clams, spiders, grasshoppers, crickets, dragonflies, aquatic plant seeds, bird eggs, and crustaceans. Breeding territories are established around March or April.

The YCR was listed as endangered by the Service on March 11, 1967, (32 Federal Register 4001). Habitat destruction, primarily human-related modifications of wetland habitat, such as stream channelization and water impoundments, and the drying and flooding of marshes are causes of the decline in YCR populations. In some areas, food sources of the YCR, such as crayfish, have been contaminated with pesticides and heavy metals, which in turn poisons the YCR.

Habitat and Range

The YCR has historically occurred in the marshes of the Lower Colorado River and its tributaries in Mexico and the United States. There were no records of the YCR occurring north of the Fort Mohave Indian Reservation near Yuma, Arizona, prior to the mid-1970s.

Currently, the YCR is found along the Colorado River, from Lake Mead to Mexico; on the Gila and Salt Rivers upstream to the area of the Verde confluence; at and around the Salton Sea in southeastern California, and at Picacho Reservoir in Arizona.

The YCR prefers emergent wetlands vegetation, such as dense or moderately dense stands of cattails (*Typha latifolia* and *T. domingensis*) and bulrush (*Scirpus californicus*) (Eddleman 1989; Eddleman and Conway 1998; Todd 1986). Rails also occur, in lesser numbers, in sparse cattail-bulrush stands or in dense reed stands (*Phragmites australis*) (Rosenberg et al. 1991). The most productive YCR habitat comprises a mosaic of uneven-aged marsh vegetation interspersed with open water of variable depth. Annual fluctuation in water depth and residual marsh vegetation are important factors in determining habitat use by the YCR (Eddleman 1989).

Habitat in the Project Area

Surveys conducted during the spring (Reclamation 2000) found the YCR occupying marsh/aquatic habitat in the Dos Palmas ACEC, including the Upper

and Lower ponds and associated flowing channels; the flowing reach of Salt Creek, from Highway 111 to the mouth of the Salton Sea, and in the vicinity of Frink Springs. A clapper rail chick was observed within the ACEC, indicating that breeding was successful at the site (Reclamation 2000).

Approximately 456 acres of marsh/aquatic habitat is available for YCR use within the Project area.

Approximately 4 acres of marsh habitat along the canal in the Frink Springs/ Hot Mineral Spa area is derived from seepage areas on a steep slope. Because of this, little standing water is found there, which results in a low potential to support YCR roosting and nesting opportunities as well as poor foraging opportunities (e.g. crawfish and other aquatic invertebrates). The vegetation is dominated by phragmites, not cattail or scirpus, and it is therefore not high quality YCR habitat.

Critical Habitat

The Service has not designated critical habitat for the YCR.

Potential Effects

Areas of known YCR occupation are outside the Canal footprint and would not be directly impacted by the Project.

The Project would have an indirect effect on YCR habitat as a result of the decreased availability of Canal seepage water that partially sustains marsh/aquatic habitat in the area. Without implementing the minimization measure described below, changes in available Canal seepage water in the ACEC and at the Frink Springs/Hot Mineral Spa could affect approximately 130 acres of marsh/aquatic habitat that is presently sustained by this flow.

Minimization and Mitigation Measures

Over the entire Canal length to be lined, an estimated 30,850 acre-feet of seepage would be conserved annually. Developed in cooperation with FWS, CDFG, and other resource agencies, sufficient conserved Canal water (and up to about 2,000 acre-feet from other sources, e.g., groundwater) would be used to mitigate the potential effects of seepage loss, sustain the marsh/aquatic habitat that supports a YCR population at the Dos Palmas ACEC and mimic flows in the ACEC and Salt Creek.

Reclamation is committed to the design and implementation of minimization and mitigation measures to successfully compensate for the loss of seepage water and the potential loss of seepage-dependent marsh/aquatic habitat. Prior to

construction, an Environmental Commitment Plan will be coordinated with the Service, CDFG and BLM. The Plan will be based on knowledge and consensus about the species, and the affected ecosystem.

Prior to Project implementation, a source(s) of water would be identified and a delivery system would be designed and constructed within the Dos Palmas ACEC. Potential sources of supply may include any or all of the following: (1) Coachella Canal water diverted to the ACEC; (2) water supplied from existing wells and springs; and (3) water from new non-potable wells in the local



artesian aquifer. The potential water source(s) would be sustainable to ensure the long-term success of the avoidance, minimization, and mitigation measures. See section 3.8.3 of the April, 2001 Final Environmental Impact Statement/Final Environmental Impact Report for the Project for a description of this measure. Vegetation

management in the Dos Palmas ACEC is a potential future action subject to a future decision. It is not to be considered as part of this consultation, and Reclamation will reconsult should it become a foreseeable project.

Protocol surveys for YCR will be done during the breeding season in the spring of 2002. Field studies will be implemented prior to Project implementation, during construction, and post-construction to monitor the location, frequency, and type of use of desert riparian habitat by the YCR, and surface water elevations in the ACEC. Monitoring protocols, including survey locations, frequency, and duration, and contingency measures would be determined by consensus among FWS, Reclamation, and other resource agencies as the Environmental Commitment Plan is developed.

1.4 Endangered Desert Pupfish (DP)

Species Description

The Desert Pupfish (*Cyprinodon macularius macularius*) (DP) is a small, territorial, silvery-colored fish with 6 to 9 dark bands on its sides. It grows to a full average length of only 2.5 inches. It has a smoothly rounded body shape with narrow, vertical, dark bars on the sides. Breeding males are blue on the top and sides, and have yellow fins. Females and juveniles have tan to olive colored backs and silvery sides. Pupfish develop quickly, sometimes reaching full maturity within 2 to 3 months. Although their average life span is 6 to 9 months, some survive more than one year.

The DP feeds on brown and green algae. During winter months, when the water is cold, DPs become dormant and burrow themselves into the muddy bottom of their habitat. The DP is quite tolerant of environmental extremes; it can survive

in very harsh conditions, such as salinities three times that of sea water and an extreme range of temperature. It also tolerates low dissolved oxygen concentrations and abrupt changes in salinity and temperature.

The DP was listed as endangered by the U.S. Fish and Wildlife Service on March 31, 1986 (51 Federal Register 10842). Two subspecies are recognized: the DP and the Quitobaquito pupfish (*Cyprinodon macularius eremus*).

Habitat and Range

The DP requires habitat consisting of slow, shallow water of not more than 12 inches in depth, and it has a tolerance for a wide range of water temperature fluctuation, low water velocity, and a substratum of sand or silt with an abundance of rooted aquatic plants. It is typically found in shallow water of desert springs, small streams, and marshes below 5,000 feet elevation. It was once common in desert springs, marshes, backwaters, and tributaries of the Rio Sonoyta, lower Gila River, and lower Colorado River drainage areas in Arizona, California, and Mexico.

The Quitobaquito subspecies exists at Quitobaquito Spring in Organ Pipe National Monument, Arizona. Three natural populations of DP exist in Imperial and Riverside Counties, California. Currently in California the *macularius* subspecies is restricted to San Felipe Creek and the adjacent wetland, San Sebastian Marsh, upper Salt Creek, and several irrigation drains and shoreline pools along the Salton Sea. No naturally occurring populations remain in Arizona.

Natural populations survive in four locations in the Colorado River delta, Sonora and Baja California, Mexico, and in the Rio Sonyta in Sonora, Mexico. Introduced populations now exist in small springs, streams, and ponds in Imperial, Riverside, and Butte Counties, California, and in Pima, Pinal, Maricopa, Graham, Cochise, La Paz, and Yavapai Counties, Arizona.

DP populations have declined due to the introduction and spread of exotic predatory and competitive fish species, water impoundment and diversion, water pollution, groundwater pumping, stream channelization, and habitat modification.

Habitat in the Project Area

The Coachella Canal does not provide suitable habitat for the DP, given its depth of several feet and moderate flow velocity. There have been no documented findings of DP in the Canal.

At the Dos Palmas ACEC, the DP occupies aquatic habitat in one of the Upper Ponds, reaches of perennial flow in the north fork tributary to Salt Creek, and in Salt Creek itself. The yearly temperature fluctuation in Salt Creek ranges from 10 to 31 degrees Celsius, which is well within the range of temperature sensitivity of the species. Lowe and Heath (1969) in the laboratory determined the critical thermal maximum of desert pupfish to be 44.6 °C. DP are also present in a CDFG aquatic refuge at Oasis Springs, which is approximately 2 miles from the ACEC. Oasis Springs is sustained by artesian flows independent of seepage from the Canal, and as a result, DP habitat at this site would not be affected by the Project.

A study of DP activity at the ACEC and in the vicinity of the Salton Sea was conducted from June through September 1999. Observations confirmed that the DP was present in the lower reach of Salt Creek (Reclamation 1999). Further, over the period, the density of DP in this reach declined as fish moved to a shoreline pool connecting it and the Salton Sea. This decline was attributed to hot weather, which caused deterioration of habitat in Salt Creek and loss of aquatic vegetation as a food source.

Critical Habitat

The Service designated critical habitat for the DP on March 21, 1986, (51 Federal Register 10842 10851). Pupfish-occupied sites at the Dos Palmas ACEC have not been designated as critical habitat.

Potential Effects

Without mitigation, the Project would result in a decrease in seepage water that sustains marsh/aquatic habitat in the Dos Palmas ACEC watershed. The unmitigated loss of Canal seepage has the potential to adversely affect the quality and quantity of aquatic habitat available to the DP at the ACEC and Salt Creek.

Minimization and Mitigation Measures

Areas of DP occupation are outside the footprint of the Canal, and thus, they would not be impacted by construction.

Reclamation is committed to the design and implementation of minimization and mitigation measures to successfully minimize and compensate for the decrease in seepage water availability and effects on aquatic habitat in the ACEC. Over the entire Canal length to be lined, an estimated 30,850 acre-feet of seepage would be conserved annually. Sufficient conserved Canal water (and up to

about 2,000 acre-feet from other sources, e.g., ground water) would be used to mitigate the potential effects of seepage loss and sustain the aquatic habitat at the Dos Palmas ACEC.

Prior to construction, an Environmental Commitment Plan will be developed in cooperation with FWS, CDFG, and other resource agencies. The Plan will be based on knowledge and consensus about the species, and the affected ecosystem. Sources of water would be identified and a delivery system would be designed and constructed within the Dos Palmas ACEC to mimic flow regimes in the Dos Palmas ACEC and Salt Creek. Potential sources of supply may consist of any or all of the following: (1) diversion of Coachella Canal water to the ACEC; (2) use of water available from existing wells and springs; and (3) development of groundwater sources from non-potable wells in the local artesian aquifer. The potential water source(s) would be sustainable to ensure the long-term success of the avoidance, minimization, and mitigation measures. A description of this measures can be found in section 3.8.3 of the April 2001, Final Environmental Impact Statement/Final Environmental Impact Report for the Project. Vegetation management in the Dos Palmas ACEC is a potential future action subject to a future decision. It is not to be considered as part of this consultation, and Reclamation will re-consult should it become a foreseeable project.

Aquatic habitat and flows at the ACEC and Salt Creek area will be monitored on a regular basis prior to, during, and after Project construction. Monitoring protocols, including survey locations, frequency, and duration, and contingency measures would be determined by consensus among FWS, Reclamation, CVWD, MWD, and other resource agencies as the Environmental Commitment Plan is developed. While it is intended that a team of agencies will cooperate in the development of such a plan, the Service cannot abrogate its responsibility with regard to threatened and endangered species under the Endangered Species Act.

2. Cumulative Effects

Southwestern Willow Flycatcher; Least Bell's Vireo; Yuma Clapper Rail; Desert Pupfish

Loss and/or modification of habitat are known to result in adverse effects to the YCR and DP throughout their geographic range. There would be no direct effects to these species from the Project because there is no suitable habitat for them within the footprint of the Canal, where construction would occur.

Indirect effects to the species could occur in habitat downslope of the Canal (and in the Dos Palmas ACEC and Salt Creek area) because of the change in availability of seepage water after the Canal is lined. Reclamation plans to

minimize the potential for such effects by providing sufficient replacement water to the site to maintain survival of marsh/aquatic vegetation in these habitats.

With minimization that ensures the continued viability of marsh/aquatic habitat in the Project area, the conclusion of may affect, not likely to adversely affect the YCR and DP is appropriate.

Because mitigation for all habitat types potentially impacted by the Project, mitigation shall be acre-for-acre based on ecological equivalency, there will be no net loss of desert riparian and marsh/aquatic habitat values, then adverse effects to the SWF, LBV, YCR, and DP would not be expected. Because there are no other ongoing or planned actions to be implemented within the Project area that could also affect the species, cumulative effects would not be anticipated.

3. Conclusions

Southwestern Willow Flycatcher; Least Bell's Vireo

The proposed Project "may affect", but is "not likely to adversely affect" the continued existence of the SWF and LBV in the Project area. This conclusion is based on the following observations:

- desert riparian habitat in the Project area does not have the necessary components to serve either species' needs for successful breeding;
- desert riparian habitat in the Project area may be used by migrating individuals as foraging and stopover points; however, both species have the capability of successfully migrating distances 3 times the distance of the Project area without ill effects, should any desert riparian habitat be lost or degraded as a result of the Project (see Section 1.2);
- the creation of a large block of high quality desert riparian vegetation in the Dos Palmas ACEC to compensate for the loss of scattered salt cedar has the potential to enhance or increase the potential migration habitat in the region, and;
- sufficient water will be provided to the ACEC to ensure the continued existence of desert riparian habitat used by the SWF and LBV.

Further, the proposed action would not make any irreversible or irretrievable commitments of resources that would foreclose the formulation or implementation of the minimization and mitigation measures to prevent a potential adverse effect to the SWF and LBV.

Yuma Clapper Rail; Desert Pupfish

The proposed Project "may affect", but is "not likely to adversely affect" the continued existence of the YCR and the DP in the Project area. This conclusion is based on the following plans:

- sufficient water will be provided to the ACEC to sustain marsh/aquatic and aquatic habitat used by the YCR and DP, respectively and mimic flows in the ACEC and Salt Creek;
- the creation of 4 acres of higher quality YCR habitat in Dos Palmas to compensate for loss of 4 acres of poorer quality habitat in the Frink Springs/ Hot Mineral Spa area is an improvement over existing conditions, and;
- DP and YCR populations will be monitored according to protocols developed in consultation with the Service and CDFG with the objective of establishing baseline population data for the YCR and DP and detecting variations that may occur once the Project is complete.

Further, the proposed action would not make any irreversible or irretrievable commitments of resources that would foreclose the formulation or implementation of minimization and mitigation measures to prevent a potential adverse effect to the YCR and DP.

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United States Department of the Interior

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Lower Colorado Regional Office
P.O. Box 61470
Boulder City, NV 89006-1470

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MAR 01 2002

MEMORANDUM

To: Jim A. Bartel, Field Supervisor
Fish and Wildlife Service, 2730 Loker Avenue W., Carlsbad, California 92008

From: **ACTING FOR** Robert W. Johnson
Regional Director **WILLIAM E. RINNE**

Subject: Mitigation Proposal for Impacts to Salt Cedar/Native, Native Plant Communities, and Monotypic Salt Cedar (*Tamarix ramosissima*) - Coachella Canal Lining Project, California

Lining of a 33.2 mile reach of the Coachella Canal is authorized in Section 203 of Public Law 100-675. This legislation includes authorization for the Secretary of the Interior to take actions to implement measures for the replacement of incidental fish and wildlife values adjacent to the Coachella Canal that are lost because of the lining action.

As you are aware, Reclamation, Coachella Valley Water District, and The Metropolitan Water District of Southern California have been working with your office over the past several months to finalize mitigation for impacts to stands of monotypic Salt Cedar (*Tamarix ramosissima*). One of the key challenges during these discussions was establishing a mitigation ratio to be used for replacement of affected monotypic salt cedar. After much analysis and discussion, agreement was reached to use a 1:7 ratio for replacement, i.e. 1 acre of honey mesquite (*Prosopis glandulosa* var. *torreyana*) restored for every 7 acres of salt cedar affected. The attached mitigation proposal was then developed to provide an additional increment of mitigation for impacts to salt cedar/native, native plant communities, and monotypic salt cedar.

This proposal, along with earlier mitigation commitments in the FEIS/EIR for lining the Coachella Canal, will satisfy the requirements of P.L. 100-675 to mitigate on an acre-for-acre basis, based on ecological equivalency. This additional mitigation commitment will also be included in the Record of Decision for the Final Environmental Impact Statement on the subject Coachella Canal Lining Project.

We request a letter from your office as soon as possible concurring with this mitigation proposal. It is also our understanding that your letter will provide concurrence on our finding of may, but not likely to, adversely affect under the separate informal Section 7 consultation process for endangered species in the project area. It is our intent to move quickly to finalize the Record of Decision documenting our proposed action and these commitments. We look forward to your response as soon as possible so that we may complete these actions, obtain release of funds from the State of California, begin initial design for construction, and complete endangered species surveys this spring.

Please contact Mr. William Rinne, Deputy Regional Director, at 702-293-8411 if you have any questions.

Enclosure

cc: Mr. Tom Levy
General Manager-Chief Engineer
Coachella Valley Water District
PO Box 1058
Coachella CA 92236-1058
(w/enc)

Mr. Dennis Underwood
Executive Assistant to the General Manager
The Metropolitan Water District of
Southern California
PO Box 54153
Los Angeles CA 90054-0153
(w/enc)

bc: Regional Director, Boulder City NV
Attention: LC-2506
Area Manager, Yuma AZ
Attention: YAO-1000
(w/enc to each)

Coachella Canal Lining Project Mitigation

Background

Legislation (P.L. 100-675), in part, authorizes lining of the Coachella Canal. In addition, it authorizes (Section 203 (a)(2)), the Secretary of the Interior (Secretary) to "implement measures for the replacement of incidental fish and wildlife values adjacent to the canals foregone as a result of the lining of the canal or mitigation of resulting impacts on fish and wildlife resources from construction of a new canal, or a portion thereof. Such measures shall be on an acre-for-acre basis, based on ecological equivalency, and shall be implemented concurrent with construction of the works." The State of California Water Code §12565(c), in part, includes a requirement that the Secretary provide a statement certifying that measures for the replacement of incidental fish and wildlife values adjacent to the canals foregone as a result of the lining of the canal meet the statutory requirement of Section 203 (a)(2) of Public Law 100-675. This certification along with other requirements are necessary for the State of California to release funds for lining portions of the All American and Coachella Canals.

Mitigation Proposal

The quantity of mitigation and mitigation ratios were calculated under the assumption that honey mesquite would be the replacement species for all monotypic salt cedar lost due to this project. Monotypic salt cedar stands that will be affected by the lining of the Coachella Canal are located on dry, upland sites downslope from the canal. They are typically sparse, dry stands with little or no understory vegetation or structural diversity (Figure 1). They are, at best, the biological equivalent of the dry, upland salt cedar types found within the Lower Colorado River floodplain (Figures 2& 3).

The following actions will be taken to mitigate for impacts to mixed salt cedar/native, native plant communities, and monotypic salt cedar (Table 3-6 in the FEIS/EIR) in the Coachella Canal lining project area:

1. Acquire and transfer to Bureau of Land Management (BLM) 575 acres of habitat (at a biological equivalency value of 15 points per acre), as identified in the April, 2001 FEIS/EIR
2. Restore on BLM or Center for Natural Lands Management lands, 352.5 acres of habitat (at a biological equivalency value of 21 points per acre) with honey mesquite, as identified in the April, 2001 FEIS/EIR.
3. Acquire an additional 300 acres of low-value upland desert habitat (at a biological equivalency value of 15 points per acre) in the Dos Palmas area (Figure 4).

Implementation Concepts:

1. Acquisition of lands will occur through purchase, exchange, long-term lease, or other arrangements that result in dedication and management of lands exclusively for mitigation use.
2. Acquisition will begin within 2 years of initiation of lining of the Coachella Canal and will be completed by the completion of construction.
3. Lands will be selected from within the Dos Palmas Area designated on the attached map (Figure 4).
4. Management of acquired or restored lands will be accomplished through an agreement with a private (e.g. Center for Natural Lands Management), State (e.g. CDFG), or Federal agency.
5. A detailed Revegetation Plan (Plan) for restoration and management of 352.5 acres of honey mesquite will be developed by a multiagency mitigation team comprised of CVWD, MWD, FWS, CDFG, BLM and Reclamation). This Plan will be a component of the Environmental Commitment and Mitigation Plan Agreement developed for the Project. The Plan will be developed within 2 years of the initiation of lining of the Coachella Canal.



Figure 1. Monotypic Saltcedar stand found along the Coachella Canal.



Figure 2. Upland Saltcedar Type IV stand found along the lower Colorado River.

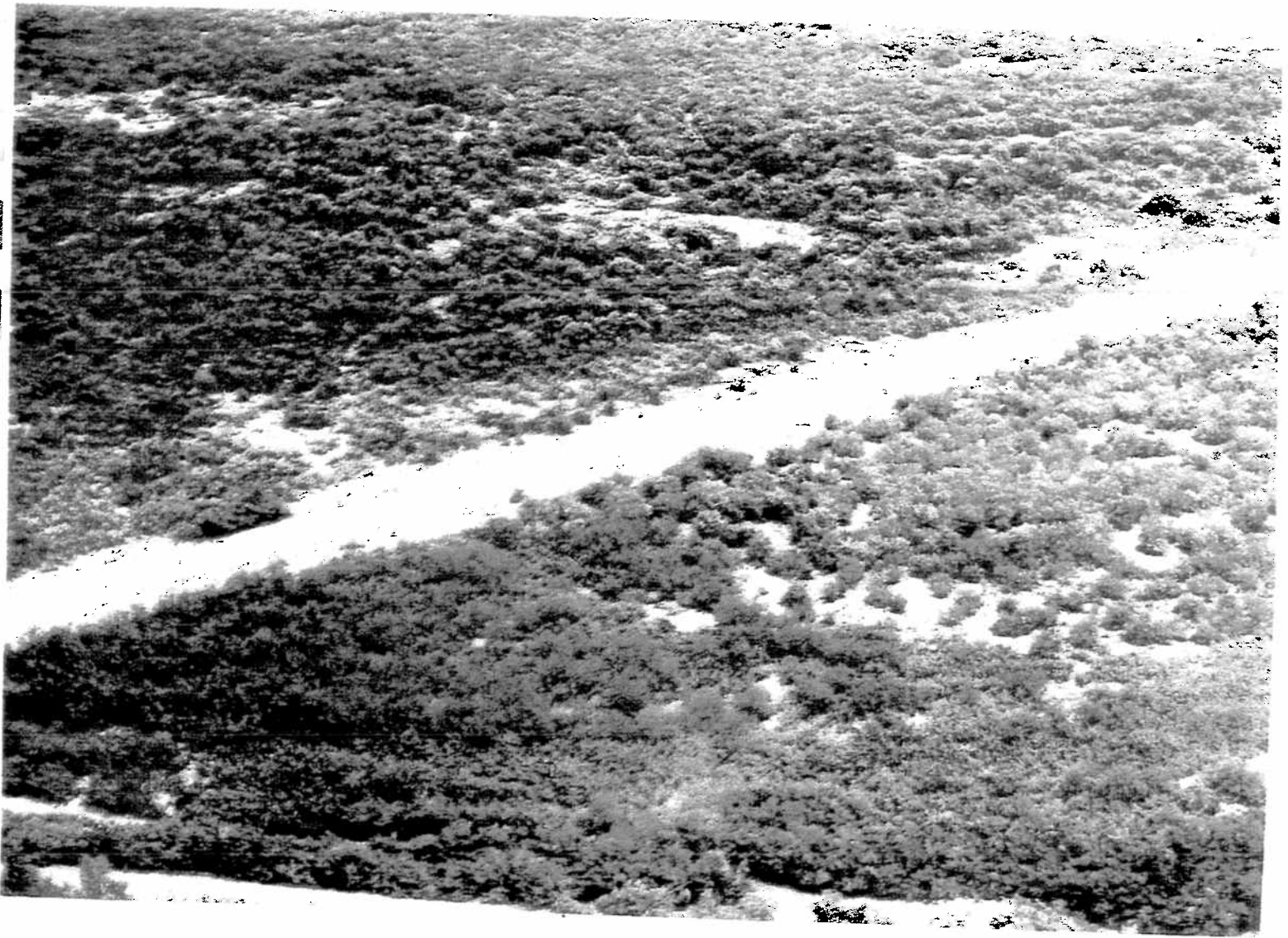


Figure 3. Aerial view of upland Saltcedar Type IV stand along the lower Colorado River.

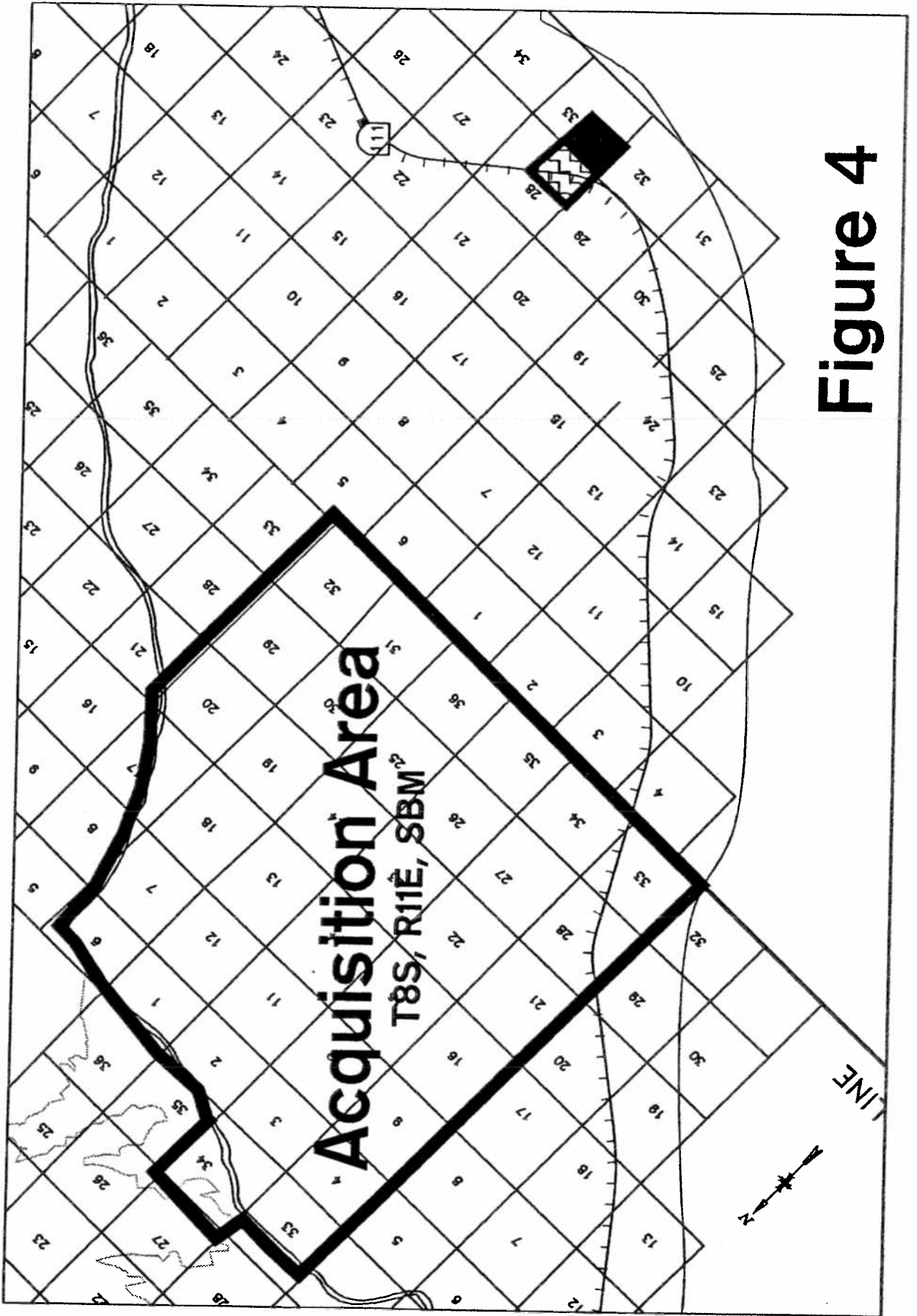
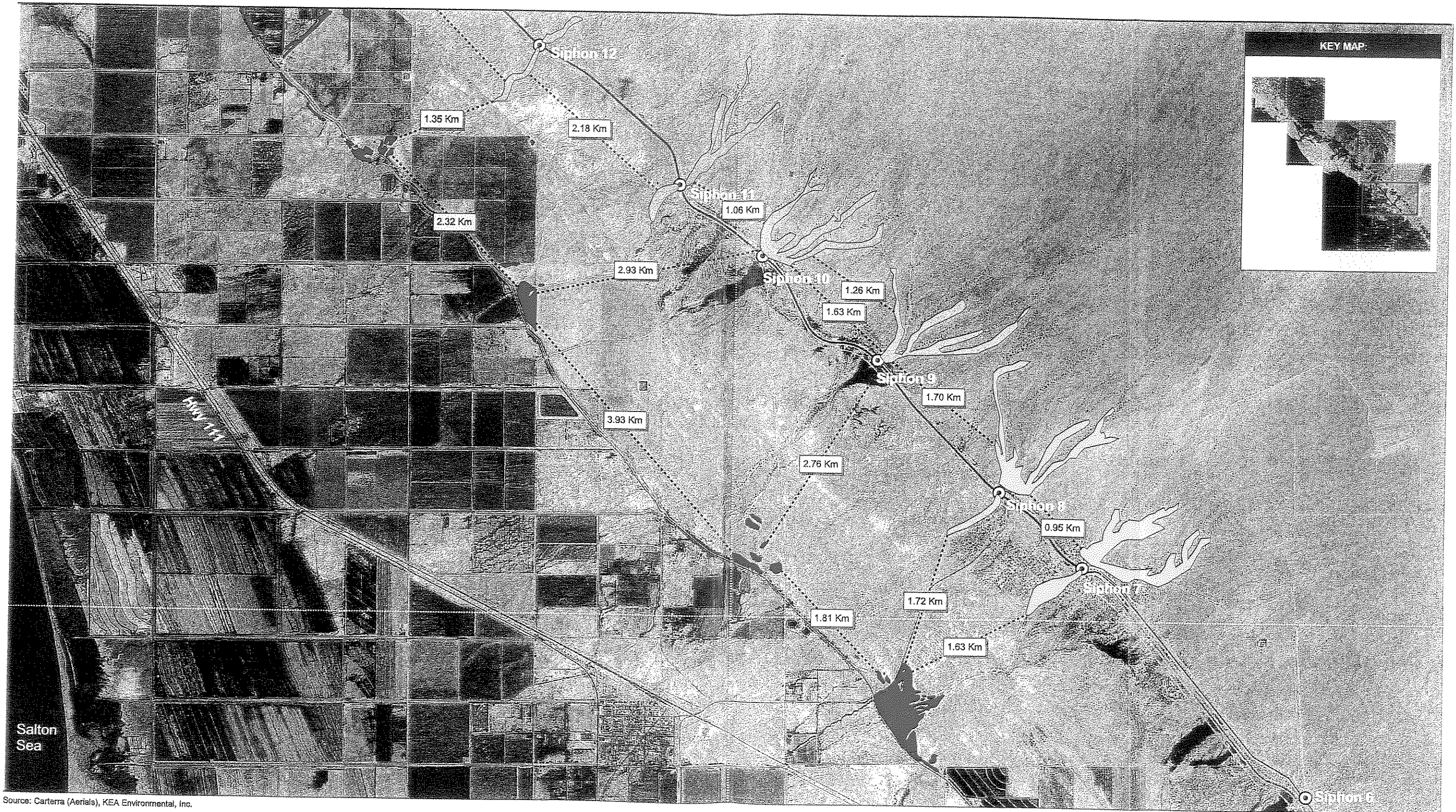
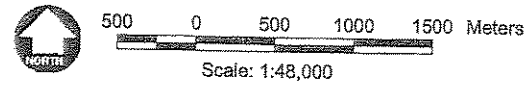


Figure 4

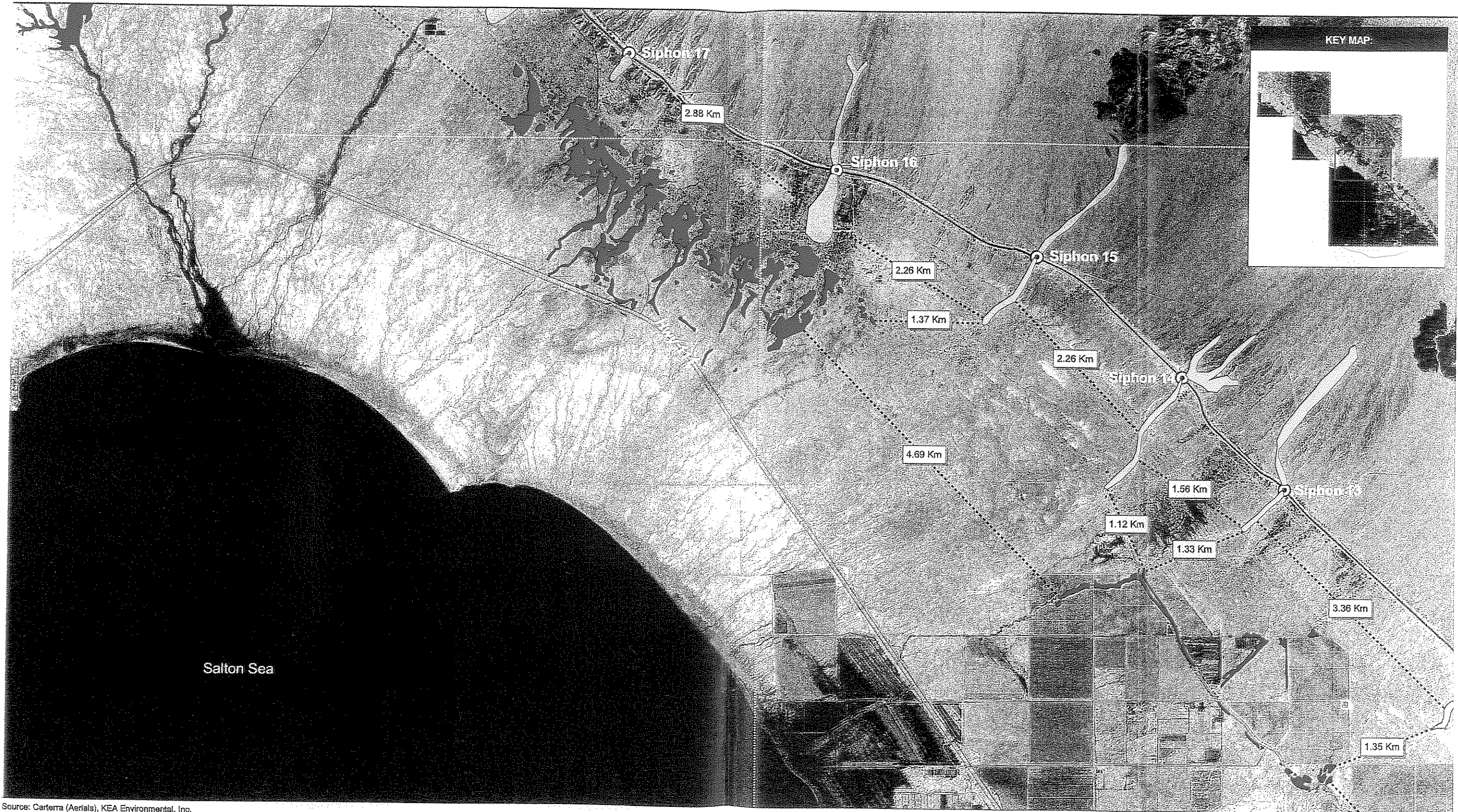


Source: Carterra (Aerials), KEA Environmental, Inc.

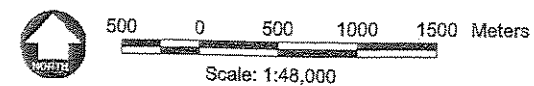


- Siphon
- ▨ Dry Desert Wash Habitat - Palo Verde/Ironwood
- Desert Riparian and Marsh/Aquatic Habitat
- ▧ USGS 7.5 Minute Topographical Quad

**Coachella Canal
Migratory Bird Habitat to Remain**



Source: Carterra (Aerials), KEA Environmental, Inc.



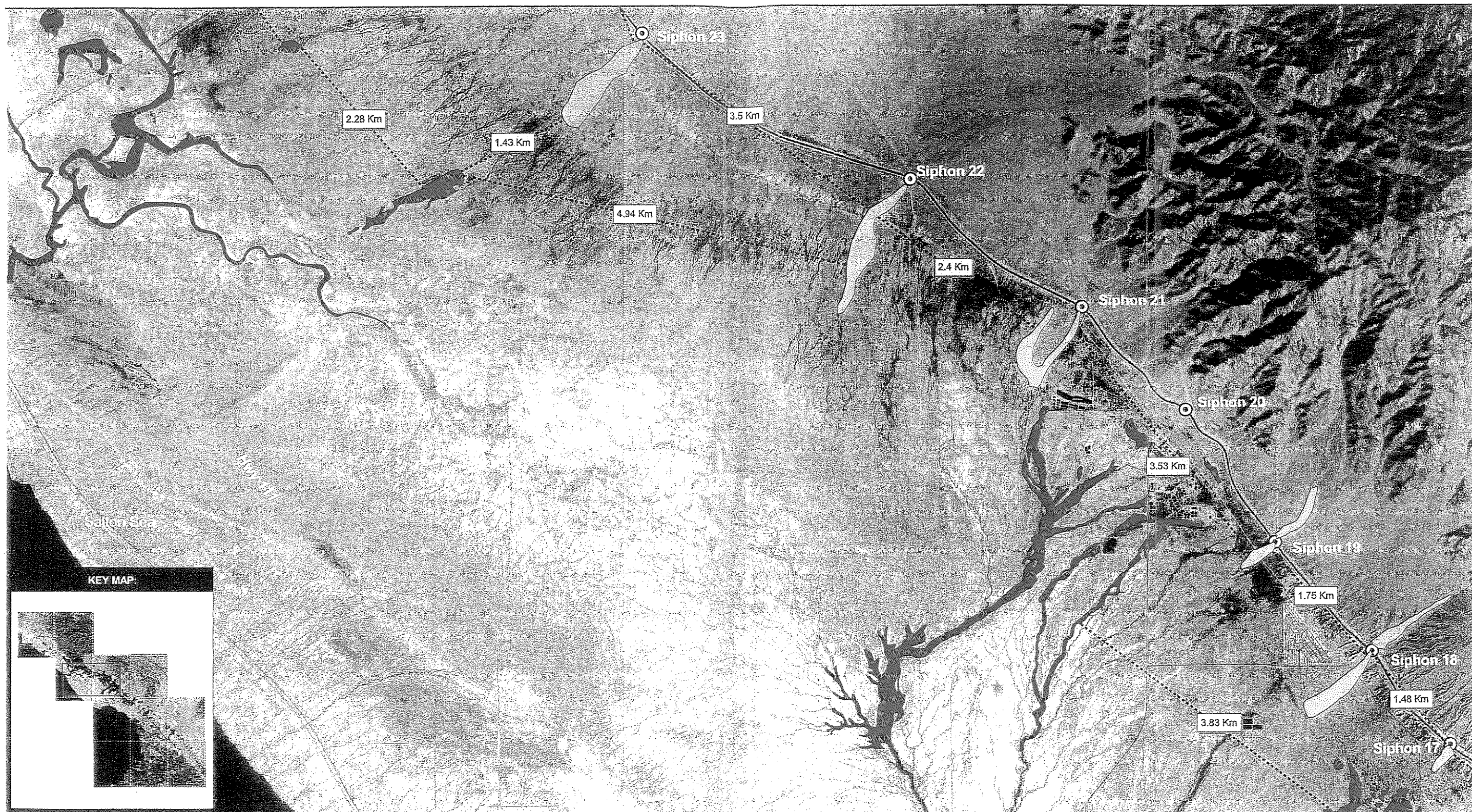
⊙ Siphon

USGS 7.5 Minute Topographical Quad

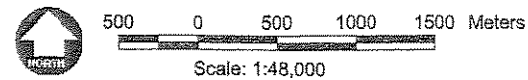
Dry Desert Wash Habitat - Palo Verde/Ironwood

Desert Riparian and Marsh/Aquatic Habitat

**Coachella Canal
Migratory Bird Habitat to Remain**



Source: Carterra (Aerials), KEA Environmental, Inc.



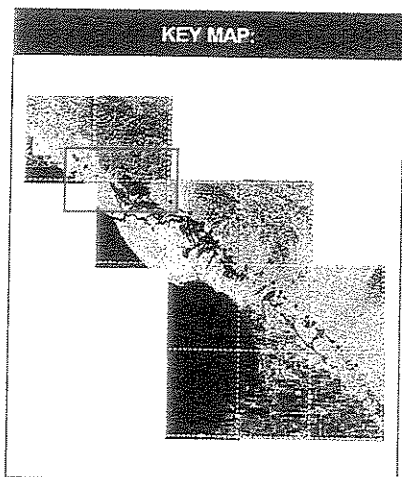
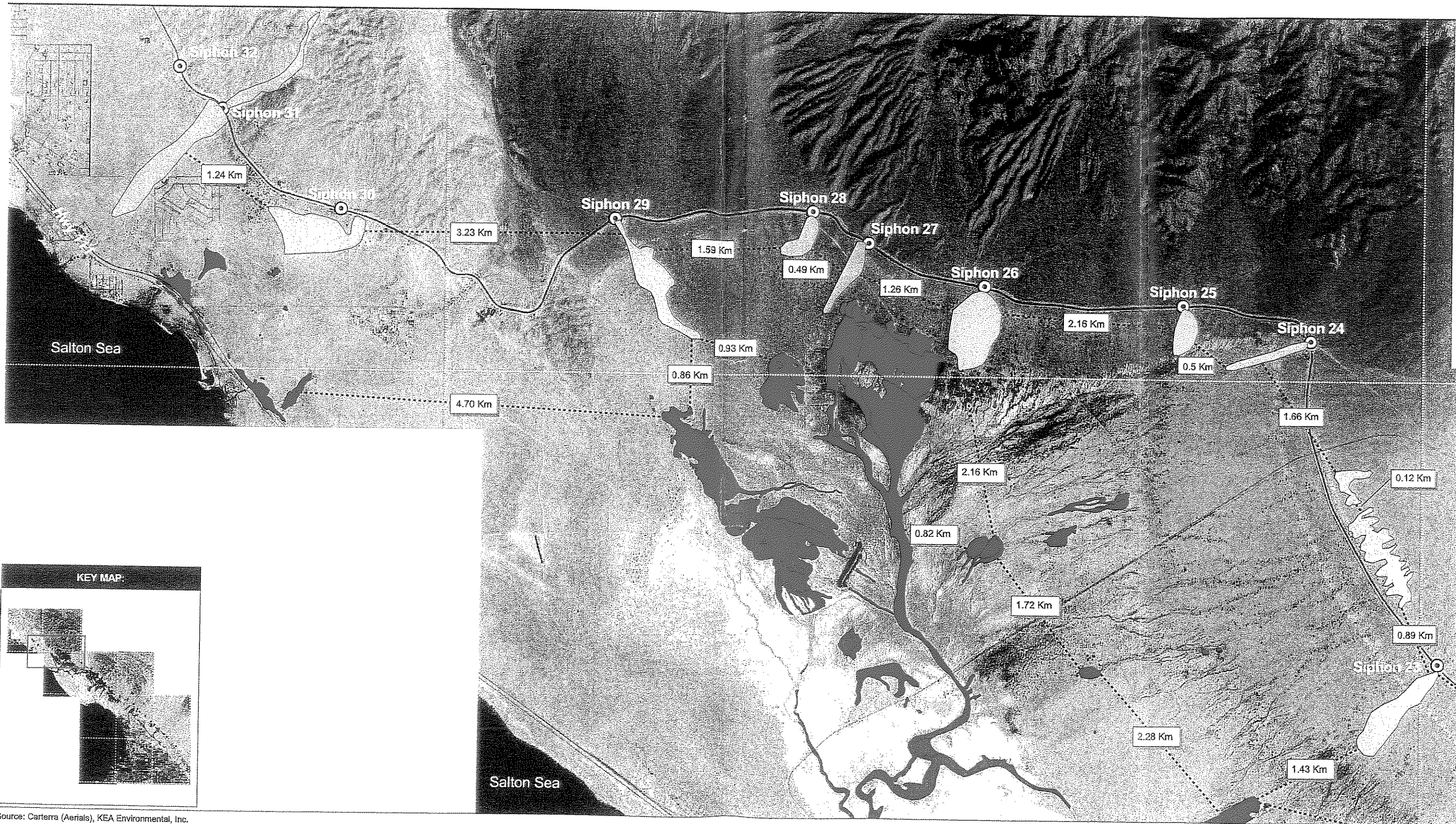
⊙ Siphon

USGS 7.5 Minute Topographical Quad

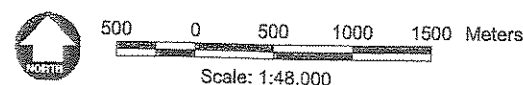
□ Dry Desert Wash Habitat - Palo Verde/Ironwood

■ Desert Riparian and Marsh/Aquatic Habitat

**Coachella Canal
Migratory Bird Habitat to Remain**



Source: Carterra (Aerials), KEA Environmental, Inc.



- ⊙ Siphon
- ▭ Dry Desert Wash Habitat - Palo Verde/Ironwood
- ▭ USGS 7.5 Minute Topographical Quad
- ▭ Desert Riparian and Marsh/Aquatic Habitat

**Coachella Canal
Migratory Bird Habitat to Remain**



United States Department of the Interior
 Fish and Wildlife Service
 Ecological Services
 Carlsbad Fish and Wildlife Office
 2730 Loker Avenue West
 Carlsbad, California 92008

MR	OFFICIAL OFFICE COPY	3/18/02
REC		
REPLY		
	INITIALS	CODE
3/19/02	WJH	2000
3/19/02	JW	2500
3/19/02	JPGreen	1300
MAR 13 2002		
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		
KEYWORD		

In Reply Refer To: FWS-RIV-7I-939.3

MEMORANDUM

To: Assistant Manager, Yuma Area Office
 Bureau of Reclamation, Yuma, Arizona

From: Assistant Field Supervisor, Carlsbad Fish and Wildlife Office
 Fish and Wildlife Service, Carlsbad, California

Nancy Gilbert

Subject: Informal Section 7 Endangered Species Act (ESA) Consultation for the Coachella Canal Lining Project (Project), Riverside and Imperial Counties, California

The Fish and Wildlife Service (Service) has received the Bureau of Reclamation's (Bureau) mitigation proposal (dated March 1, 2002), informal consultation letter (dated November 1, 2001), Biological Evaluation (BE), and attachments. We have reviewed these materials and have the following comments and conclusions to offer. No critical habitat for any federally listed species occurs within the project area so no adverse modification of critical habitat is possible.

Desert Tortoise

The Service has one point of clarification on the avoidance measures in the BE for the desert tortoise (*Gopherus agassizii*). The tortoise exclusion fencing is also required in areas along the canal where the berm is inadequate to function as a barrier or is not present. This, in combination with the other avoidance measures described, should reduce the likelihood of take of the desert tortoise to a discountable level. Given the information available at this time, the Service concurs with the Bureau's determination that the project may affect, but is not likely to adversely affect this species. Our analysis was conducted based on the fact that construction activities will take place within the area bounded by the waste berm(s) and/or the outside edge of the existing canal roads, and that staging areas and access routes would not be located in desert tortoise habitat. If it proves to be infeasible to limit construction activities to these areas, no construction activities shall occur until the Service and the Bureau have re-evaluated the impacts of the proposed project. If the results of the planned surveys indicate that the avoidance measures described may not be adequate to maintain the likelihood of take at a discountable level, the Bureau shall initiate formal consultation with the Service to address this take. If a tortoise is found within the project area during construction activities, all construction activities that could affect the desert tortoise shall cease until the Bureau has completed the formal consultation process. The key to this

approach is timely reporting of survey results to the Service and having an on-site biomonitor who has the authority to stop activities that may result in take of the tortoise should one be found within the construction area, staging areas, or required routes of travel.

Razorback Sucker

Given the available information on the razorback sucker's (*Xyrauchen texanus*) presence in the canal, the likelihood of directly impacting a razorback sucker during the course of project activities is considered to be discountable. Based on the information currently available, the Service concurs with the Bureau's determination that the project may affect, but is not likely to adversely affect this species. Should the planned surveys indicate that the likelihood of impacts is not discountable, the Bureau shall initiate formal consultation with the Service. The consultation process shall be completed prior to the start of construction activities. If a razorback sucker is found during the course of construction activities, all construction activities that could affect the razorback sucker shall cease until the Bureau has completed the formal consultation process. The key to this approach is timely reporting of survey results to the Service and having an on-site biomonitor who has the authority to stop activities that may result in take of the razorback sucker should one be found within the canal during lining activities.

Southwestern Willow Flycatcher and Least Bell's Vireo

Given that no suitable breeding habitat occurs within the project's area of impacts and the transient use of the project area by the southwestern willow flycatcher (*Empidonax traillii extimus*) and the least Bell's vireo (*Vireo bellii pusillus*), the Service concurs with the Bureau's determination that the project may affect, but is not likely to adversely affect these species.

Yuma Clapper Rail and Desert Pupfish

The project includes measures that are designed to maintain flows in the marsh/aquatic habitats of the Dos Palmas Area of Critical Environmental Concern (ACEC) and Salt Creek. Given that impacts to the Yuma clapper rail (*Rallus longirostris yumanensis*) and the desert pupfish (*Cyprinodon macularius*) habitat are going to be avoided, the Service concurs with the Bureau's determination that the project may affect, but is not likely to adversely affect these species. Should monitoring indicate that the avoidance measures (providing supplemental flows in these areas) are not adequately preventing degradation of these habitats such that take of these species could occur, the Bureau shall initiate formal consultation with the Service to address these impacts.

Salt Cedar Mitigation

One issue remains outstanding relative to the Coachella Canal Lining project. The Service does not concur with the ratio of 1:10 (natives for pure salt cedar stands) as described in the 2000 draft Environmental Impact Statement (EIS) and the "white paper" provided to the Service by the project consultant (EDAW 2001). The white paper outlined two primary reasons for the change

in replacement ratio: 1) the Anderson and Ohmart system used in the original draft EIS in 1993 overestimates habitat value for salt cedar when applied to stands along the Coachella Canal, and 2) there was an error in developing the Anderson and Ohmart system in the 1993 draft EIS that over-valued salt cedar V and that salt cedar IV and V should be lumped under a single habitat value. Our responses to these two issues are summarized below.

The 2000 draft EIS proposed revisions to the 1993 Draft EIS habitat replacement values based on claimed physical and functional differences between the salt cedar habitats along the Coachella Canal versus the Lower Colorado River. The Service concurs that native species located in and adjacent to salt cedar along the Lower Colorado River will enhance its value for wildlife. However, the Anderson and Ohmart system accounts for this in that they did evaluate wildlife use of pure stands of salt cedar (with values ranging from 3 to 8). Mixed native and salt cedar stands had higher wildlife use as reflected in their higher assigned values (7.5 - 12.5 depending on the combination). While pure stands of salt cedar are not expected to support the same habitat values as pure cottonwood/willow habitat (as reflected in the different values assigned by the Anderson and Ohmart system), our review of the literature does indicate that even pure stands of salt cedar have value for migratory and breeding birds and other wildlife species. The informal surveys and observations completed to date along the Coachella Canal do not provide a quantitative basis against which to evaluate the use of the Anderson and Ohmart values. In the absence of the completion of at least a subset of the surveys used by Anderson and Ohmart in developing their habitat values in the areas to be impacted along the Coachella Canal, the Service finds it inappropriate to modify the values assigned by that study to pure stands of salt cedar.

In regards to the value assigned to the salt cedar V category in the Anderson and Ohmart study, the Service has investigated the inconsistency between the values assigned in a table in the report and the appendix. The Service concurs that an error was made in the assignment of a value of 5 to salt cedar V habitat. This would result in both salt cedar IV and salt cedar V habitat types being assigned a value of 3 in the habitat valuation. For replacement with honey mesquite, the resulting ratio for all pure salt cedar stands would then become 1:7. Based on a recent conference call on the topic (December 13, 2001), the Service and the Bureau are in agreement that a value of 3 is appropriate for all pure salt cedar stands. This would result in a mitigation requirement in addition to the 575 acres of acquisition and 352 acres of honey mesquite creation proposed in the 2000 draft EIS. Given that the 2000 draft EIS devalued 4,402 acres of pure salt cedar by 1 point, the additional mitigation requirement needs to be equivalent to 4,402 points.

We concur with the approach identified in the Bureau's March 1, 2002, letter for acquisition of an additional 300 acres in the Dos Palmas Area of Critical Environmental Concern based on an acquisition point value of 15. However, rather than seeking to acquire "low-value upland desert habitat", acquisition decisions should be based on the fact that the properties considered either provide additional advantages over existing preserved lands in terms of potential for successful creation of honey mesquite habitat or the properties have habitat characteristics that will enhance the overall ecological values of the Dos Palmas area through their preservation and management. The Dos Palmas Management Committee (a multi-agency planning entity including representatives from the Service, the Bureau of Land Management, the California Department of

Fish and Game, the Coachella Valley Water District, and the Center for Natural Lands Management) can provide assistance in identifying priorities for land acquisition. Given the permanent nature of the project impacts, the mechanism for preservation should provide for permanent dedication of the lands for mitigation purposes only. Long-term leases do not provide for preservation in perpetuity. Land exchanges have the potential to provide benefits, but this must be weighed against the loss of values associated with the lands that will be turned over to an outside entity. Land acquisition and management in perpetuity for mitigation purposes provides for all of the requirements to replace ecological values lost as a result of the project. The Record of Decision (ROD) should provide a thorough description of the intent of the proposed mitigation and how the species, configuration and success criteria for the revegetation will contribute to achieving the goal of ecological equivalency. We would like to offer our assistance in developing this language in order to facilitate the completion of the ROD. The Environmental Commitment and Mitigation Plan should develop the honey mesquite revegetation component more fully through the Revegetation Plan and provide for the long-term management and monitoring of all lands acquired as part of the mitigation including a description of the funding mechanism to be used.

We appreciate the opportunity to complete the informal consultation process on the Coachella Canal Lining Project. We look forward to working with the Bureau on the development of the Environmental Commitment and Mitigation Plan which will identify the specific requirements of the mitigation activities. Please contact Carol Roberts of my staff at (760) 431-9440 if you have any questions regarding our comments.

cc: William Rinne, Bureau of Reclamation, Boulder City
Elena Misquez, Bureau of Land Management, Palm Springs
Kim Nicol, California Department of Fish and Game
Jim Dice, California Department of Parks and Recreation
Steve Robbins, Coachella Valley Water District
Tom Ryan, Metropolitan Water District

References Cited

- Anderson, B.W. and R. Ohmart. 1984. Vegetation Management Study for the Enhancement of Wildlife Along the Lower Colorado River. Bureau of Reclamation Contract No. 7-07-30-V0009. Arizona State University, Arizona.
- EDAW. 2001. Salt Cedar Habitat Values for the Coachella Canal Lining Project EIS/EIR. EDAW Inc. San Diego, California.

7.0 ENVIRONMENTAL COMMITMENTS

This chapter summarizes the environmental commitments made in this Final EIS/EIR for the Conventional Lining Alternative (preferred alternative). These include (1) project design features and other commitments that would avoid or minimize impacts, and (2) mitigation measures. The mitigation measures component of this chapter has been used as the basis for the Mitigation Monitoring and Reporting Program, pursuant to CEQA requirements.

7.1 **PROJECT DESIGN FEATURES AND OTHER COMMITMENTS THAT WOULD MINIMIZE OR AVOID IMPACTS**

7.1.1 Surface Water

- Large-capacity portable pumps would be positioned in the canal during dewatering activities. Since pumping operations usually require fuel storage, the selected contractor will be required to develop and implement a spill prevention and response plan.

7.1.2 Terrestrial Habitat

- The bypass pipe corridor would be cleared and graded only as much as needed to lay the pipe. Topsoil will be removed only where abrupt changes in the ground would require cutting a more gradual slope with a bulldozer. Elsewhere, construction would simply bend or crush vegetation above ground, which would allow regrowth. During periods of low water demand in the Coachella Canal service area, the width of the corridor required for the bypass pipelines would be reduced from the maximum of 65 feet, when less than five pipelines can bypass the flow.

7.1.3 Large Mammal Escape

- Large mammal entry and escape ridges and escape ramps at areas of high wildlife visitation would be incorporated into project design, including:
 - Escape ridges would be placed at 18-inch intervals on both sides of the canal, beginning 9 inches from the top edge of the lining and ending below the low operating level. The ridges would have a rough finish and be at least 1.5 inches high.
 - Escape ramps would be installed at high visitation wildlife watering sites, such as siphon 20.

- Deflector cables with buoys and booms would be installed and maintained on the upstream side of all siphons to direct large mammals to escape mechanisms.

7.1.4 Cultural Resources

- All cultural resource activities will be conducted in accordance with 36 CFR 800 and in consultation with the California State Historic Preservation Officer (SHPO), Bureau of Land Management (BLM) for public domain land, and, as appropriate, the Federal Advisory Council on Historic Preservation.
- Should any burial sites be encountered during construction, they will be treated pursuant to the procedures outlined in the Native American Graves Protection and Repatriation Act (NAGPRA).
- Prior to construction, a detailed construction plan will be developed. To minimize impacts, existing roads and staging areas will be used wherever possible. New borrow areas and access roads on undisturbed land will require a Class III survey. Existing borrow areas (other than the canal-bank spoil piles) and access roads will require a Class III survey unless the compliance process was completed within the past five years. All areas potentially affected, as well as areas to be disturbed for new habitat planting, will also have Class III surveys.
- Avoidance would be utilized to the extent possible.

7.1.5 Recreation and Canal Fishery

- Reclamation and CVWD anticipate that following the completion of the canal-lining project, legal fishing may be established between siphons 7 and 14 and siphons 15 and 32 if liability issues can be resolved.

7.1.6 Land Ownership and Use

- Privately owned land may be acquired (purchased) and transferred to federal or State agency ownership as part of project mitigation. Property owners would be compensated for the fair market value of their property in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. § 4601(1996)) and applicable state law (California Government code chapter 16 § 7260 et seq.).

7.1.7 Sand and Gravel

- During the project design phase, samples of sand and gravel from potential sources would be tested for suitability for project concrete. On the basis of such tests, a variety of sources would be certified for use on the project.
- During the design phase, an assessment would be made of the cultural and biological resources that may be affected by quarry activities at each certified site. Based on this assessment, potential disturbance of sensitive areas would be avoided by excluding the source, or impacts would be mitigated in conjunction with mitigation for canal construction. Environmental restrictions associated with certified sand and gravel sources would be included in the construction specifications. The construction specifications would allow the contractor to use one or more of the certified sources or request certification of another source of its choosing. If the contractor were to request using a source not previously certified and assessed environmentally, it would be required to comply with applicable requirements.
- Site reclamation plans will be prepared for surface mining operations on federal land, as well as Riverside County and Imperial County lands. These plans will be submitted to and approved by the affected agencies.

7.1.8 Transportation

- To minimize impacts, off-highway traffic hazards to the public will be addressed by implementation of a traffic control plan. The traffic control plan will be prepared by the construction contractor prior to the commencement of any construction or hauling activities. At minimum, the plan will address and outline appropriate vehicular speeds in construction areas; travel routes, detours, or lane closures; flag-person requirements; appropriate signage and safety reflectors; coordination with Imperial County Department of Public Works, and the California Department of Transportation (Caltrans); the location of staging areas; safety procedures to reduce hazards to motorists, bicyclists, and pedestrians; and emergency information. The traffic control plan will also address Border Patrol access in the area.
- Permits from Caltrans will be obtained, as necessary, for hauling material on State roads. Consultation with Caltrans regarding construction equipment use of State Highway 111 will also be conducted.

7.1.9 Public Safety

- Standard construction safety procedures will be incorporated into the plans and specifications for the canal lining project (restricting public access, safety fencing, worker safety policies, etc.) as well as a requirement for the contractor to develop and implement a traffic control plan.

7.2 MITIGATION MEASURES

7.2.1 Surface Water

No mitigation for surface water resources is required; however, flows in Salt Creek will be maintained at recent mean annual levels as mitigation for impacts to biological resources (see Section 7.2.4, “Marsh/Aquatic and Desert Riparian Habitat Along the Coachella Canal”).

7.2.2 Groundwater

No mitigation measures for impacts to groundwater are required (see Section 3.3).

7.2.3 Water Quality

No mitigation for water quality is required (see Section 3.4).

7.2.4 Marsh/Aquatic and Desert Riparian Habitat Along The Coachella Canal

- The flow regime in Salt Creek at USGS Stream Gauge 10254050 (near the mouth of Salt Creek at the Salton Sea) will be maintained. This assumes vegetation management along Salt Creek to ensure that consumptive use does not decrease water flow. Based on measured streamflows from 1996 through 1999, the mean annual flow at the USGS gauge is approximately 623 acre-feet per year (USGS 1996, 1997, 1998, 1999). The sources of water to be used are described in the following measure.
- Mitigation actions for impacts to marsh/aquatic and desert riparian habitat will be on an acre-for-acre basis based on ecological equivalency. The requirement for mitigation of unavoidable impacts to these habitat types are projected to be met through the following measures:

Maintain existing marsh/aquatic habitat	105	acres
Create additional marsh/aquatic habitat	17	acres
Restore/create additional desert riparian habitat	327	acres
Acquire private land and transfer title to BLM	575	acres

The proposed acreages for restoration/creation of additional desert riparian habitat and the acquisition of private land and subsequent transfer to the BLM may be changed in consultation with resource agencies, provided that these actions still provide mitigation on an acre-for-acre basis, based on ecological equivalency.

In the Dos Palmas ACEC, particularly in the Dos Palmas Preserve, located in hydrologic unit D between siphon 23 and siphon 29, much of the impacts to marsh/aquatic and some of the impacts to desert riparian habitat will be avoided. To accomplish this, water will be supplied upslope from the existing marsh/aquatic habitat areas and allowed to flow downstream through the marshes and ponds, where it will be collected into the mainstream of the north branch of Salt Creek. The water will then continue downstream to the mainstem of Salt Creek to maintain desert pupfish habitat and flow to the Salton Sea. This plan avoids impacts to 105 acres of marsh/aquatic habitat and 142 acres of desert riparian habitat. This assumes that there will be regular exotic species management along Salt Creek consistent with the *Dos Palmas Area of Critical Environmental Concern Management Plan*.

Any California fan palm, honey mesquite, screwbean mesquite, or cottonwood/willow community will be replaced, on an acre-for-acre basis, with like species or other suitable desert riparian/desert wash species such as smoke tree, palo verde, desert willow, and desert ironwood. Quailbush, suda, or wolfberry may be used to mitigate impacts to salt cedar, pampas grass, and sawgrass areas. Plantings of desert riparian shrubs (e.g., mesquite, indigo bush, desert senna, cat's claw acacia, cheese bush) will be interspersed with riparian tree species, whenever possible.

Specific planting sites will be selected based on physical and biological suitability criteria (e.g. soil electroconductivity and texture, depth to groundwater, topography, presence or absence of other vegetation) and avoidance of disruption of existing desert riparian and marsh/aquatic vegetation. Exact acreage, species composition, and location of the plantings will depend on the results of this site suitability analysis, but habitat created by the planted riparian vegetation will provide ecological equivalency of habitat lost or degraded due to the project. Where habitat restoration/creation occurs, plantings will be made to achieve a density of about 100 mature trees per acre.

In order of descending preference, the locations where marsh/aquatic and desert riparian mitigation measures will be implemented is as follows:

1. Dos Palmas ACEC.
 - a. BLM's Dos Palmas Preserve.
 - b. Areas adjacent to the Preserve.
 - c. Areas adjacent to other lands managed for wildlife.
2. Areas downslope from the canal on federal or state land with favorable soil electroconductivity and texture and other conditions (e.g., Frink Springs area).
3. Salton Sea shoreline areas including the marsh/aquatic habitat at the mouth of the Coachella Valley Stormwater Channel and within the Sonny Bono Salton Sea National Wildlife Refuge.

Mitigation at the Dos Palmas ACEC (preference 1) will follow the guidelines contained in the *Dos Palmas Area of Critical Environmental Concern Management Plan* (BLM 1998). Habitat restoration objectives contained in the management plan in Subsections B(2)(a) and (b) will be supported. Mitigation efforts on BLM property will be conducted under the direction of the BLM. It is probable that once specific mitigation actions for BLM property are identified, a trust fund will be established to allow the BLM to implement those measures directly, provided that the mitigation activities meet the performance standards described in this Final EIS/EIR.

Purchase of private land to be transferred to a resource agency (such as the BLM or State agency) for habitat management may also be included in the mitigation plan. This ratio of purchased land to revegetation was established by a biological work group during the initial project evaluation in the 1994 Draft EIS/EIR. Based on revised habitat boundaries and new figures, the basic mitigation plan currently envisions approximately 575 acres of land purchase and 327 acres of desert riparian revegetation on federal land. Land purchase will be consistent with Section III.A(1) of the *Dos Palmas Area of Critical Environmental Concern Management Plan*, which calls for the BLM to continue acquisition efforts within the ACEC.

Consideration will be given to a pilot revegetation program to test planting techniques in the sites selected for replacement vegetation. The initiation and scope of a pilot program would depend on the nature of the horticultural issues that would need to be resolved before the replacement vegetation is planted. This pilot revegetation program is considered to be consistent with Section

203(a)(2) of P.L. 100-675 which states that mitigation shall be implemented concurrent with construction of the works.

Operation and maintenance (O&M) activities for the replacement vegetation and the marsh/aquatic habitat to be preserved may be provided by one or more federal and State resource entities under an O&M plan to be developed during the design phase of the project. CVWD will manage water supplies provided from the canal for mitigation purposes. The O&M plan will be combined with existing resource management programs in the Dos Palmas ACEC, for efficiency and consistency. Land acquired for mitigation purpose may be transferred to a federal or State resource management entity.

The marsh/aquatic and desert riparian habitat mitigation plan will require additional sources of water; the specific quantity of water required will depend on the locations selected for development of new marsh/aquatic habitat and underlying soil types. Water requirements include water needed to maintain desert riparian and live stream conditions in certain reaches of Salt Creek and its north tributary for the benefit of the desert pupfish. Generally, the mitigation water operations will be arranged so that runoff from the marsh/aquatic habitat will supply the water requirements for pupfish habitat, which is currently the case. Water for mitigation will come from one or more of the following sources:

- Salt Cedar Removal. An acre of salt cedar in the project area consumes approximately 4.0 to 4.8 acre-feet of water per year depending on the density of the habitat (based on a Reclamation study of salt cedar and other desert riparian habitat water use from 1995 through 1998). To put this in context with regard to the project area, the salt cedar present in hydrologic unit D (which encompasses the Dos Palmas ACEC) consumes roughly 8,716 to 10,460 acre-feet of water per year. This is more than 13 times as much water as flows from Salt Creek into the Salton Sea (based on mean annual flows measured over the last four years). The *Dos Palmas Area of Critical Environmental Concern Management Plan* identifies salt cedar as, "One of the most prodigious water users in the Dos Palmas basin" (BLM 1998). The management plan further states that, "Control of tamarisk [salt cedar] may also offset the loss of water to native vegetation once the [Coachella] canal is cement-lined." Accordingly, by removing salt cedar from the ACEC, the amount of water that needs to be supplied to this area to support mitigation could be reduced.

- Existing Discharges. For marsh/aquatic habitat and desert riparian habitat mitigation in the Dos Palmas Spring area, the discharge of existing wells and springs on BLM and the Center

for Natural Lands Management land that remains after the canal is lined would be available for this purpose, to the extent that there is water available over existing uses that are to continue. The use of this water would be arranged under a cooperative agreement with the Center for Natural Lands Management and BLM, who currently use water from these sources to supply ponds and marsh habitat in the Dos Palmas Spring area.

- New Wells. Additional water for mitigation could be obtained by drilling additional wells to develop non-potable aquifer water in the vicinity of the canal. Based on available geohydrologic information, it is estimated that up to 2,000 acre-feet of water would be available from this source annually. Congress authorized the development of groundwater from federal land for mitigation use in P.L. 100-675, which stipulated that priority be given to non-potable sources.

- Canal Diversion. Water diverted from the Coachella Canal would also be used for mitigation. Use of water from the canal for mitigation would reduce the net amount of conserved water available for conservation uses allowable under P.L. 100-675. Accordingly, although lining the canal would annually reduce seepage by approximately 30,850 acre-feet, because it is anticipated that up to 4,850 acre-feet per year of canal water would be managed by CVWD to support mitigation, the net (post-mitigation) yield of the proposed project is projected to be 26,000 acre-feet of conserved water per year.

A monitoring plan will be implemented by the project proponents to ensure the success of the mitigation effort. For mitigation in the Dos Palmas ACEC, monitoring would be consistent with management objectives stated in the *Dos Palmas Area of Critical Environmental Concern Management Plan*. A monitoring budget would be allocated from a trust fund established as part of this mitigation effort. For mitigation sites located outside the Dos Palmas ACEC, monitoring would be conducted monthly during the first and second year growing season, twice annually during years 3 through 5, and annually for years 6 through 10. The sites would then be monitored in post-planting years 15, 20 and 25. The mitigation plan would be reviewed after each survey year to determine if modifications to the plan or corrective actions would be required.

Criteria for survival of planted desert riparian trees or shrubs will be related to the natural survival rate of adjacent and similar stands of native desert riparian vegetation to account for natural soil conditions, including the gradual buildup of salt in the soil. Specific criteria will be developed during the design phase of the project.

- Mitigation for the Coachella Canal Lining Project's incremental contribution to cumulative marsh/aquatic and desert riparian habitat impacts along the lower Colorado River will include the following components:
 - creation or restoration of 2.9 acres of backwaters along the lower Colorado River
 - creation of 24 to 73 acres of willow flycatcher habitat along the lower Colorado River, with the specific amount of creation to be determined based on the monitoring results and the guidance provided in the "Biological Opinion for Interim Surplus Criteria, Secretarial Implementation Agreements, Water Administration, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary, Arizona, California and Nevada" (FWS 2001).

In addition, mitigation for the proposed project's incremental contribution to cumulative impacts along the lower Colorado River will include providing an incremental portion (6.5 percent) of the funds necessary to monitor 372 acres of currently saturated willow flycatcher habitat along the river that may be cumulatively affected by the water conservation and transfer projects. This mitigation is consistent with the conservation measures identified in the above-referenced Biological Opinion, and it would offset the Coachella Canal Lining Project's incremental contribution to cumulative marsh/aquatic and desert riparian habitat along the Colorado River.

7.2.5 Terrestrial Habitat

The locations of the bypass pipelines will be flexible and will avoid valuable habitat, particularly established trees and areas with relatively healthy stands of desert shrubs. The alignment of the temporary bypass pipelines shall be based on the following criteria:

- Use terrain with the least amount of surface irregularity to minimize surface disturbance and topsoil disturbance.
- Minimize risk of flash flood disturbance to bypass facilities.
- Use existing roads or trails to the extent practicable.
- Minimize disturbance of vegetation that would not otherwise be adversely affected by the project. Limit disturbance to crushing rather than clearing, where possible.
- Minimize disturbance to private and public improvements along the canal, including flood control dikes.

- Upslope from the canal, keep bypass pipes as close to the canal as possible but avoid the band of desert wash vegetation that tends to lie close to the upstream edge of the spoil bank from original construction.
- Downslope from the canal, where a choice must be made, disturb seepage-dependent vegetation rather than more xerically adapted desert wash vegetation. The seepage-dependent vegetation lost would be compensated as described in the mitigation plan for desert riparian habitat. Non-seepage-dependent vegetation that is crushed by construction activities would regenerate naturally.

Pipe placement will take into consideration the presence of any sensitive archaeological resources encountered during pre-construction surveys.

The loss of mature trees of ironwood, palo verde, and mesquite that cannot be avoided will be mitigated by replanting two trees for every one tree destroyed. Tree survival will be monitored for five years, and those which do not survive planting will be replaced to ensure that the 2:1 ratio is achieved. Similarly, replacement trees will be planted for trees that, after five years, do not meet standard mitigation success criteria for the individual species (e.g., tree height, diameter at breast height). Where desert washes are disturbed, the ground surface will be recontoured to approximate pre-construction conditions.

7.2.6 Special Status Species

Measures developed during previous and ongoing consultation with FWS are expected to avoid impacts to Yuma clapper rail, southwestern willow flycatcher, least Bell's vireo, desert pupfish, desert tortoise, and California black rail.

Habitat for the Yuma clapper rail and California black rail would be maintained through the preservation or replacement of marsh/aquatic areas as described in Section 7.2.4. The measures described in Section 7.2.4 would also mitigate for the loss of potential migration habitat for the southwestern willow flycatcher and least Bell's vireo.

Impacts to desert pupfish will be mitigated by maintaining the flow of water in the Dos Palmas upper and lower ponds and in the north branch of Salt Creek. This will be achieved by maintaining flows of water for that purpose from sources described in Section 7.2.4. Based on measured streamflows from 1996 through 1999, the mean annual surface flow at USGS gauge number 10254050 is approximately 623 acre-feet per year (USGS 1996, 1997, 1998, 1999).

The desert tortoise has a slight potential to occur in the affected environment. Impacts are possible, but unlikely. If encountered during preconstruction surveys and during construction monitoring, desert tortoises would be relocated as prescribed by the FWS to avoid impacts. Any burrows, if present, would be reconstructed outside of the construction footprint.

Impacts to the razorback sucker are not expected to occur in the canal. As a precautionary measure, basket strainers would be used at bypass system pump intakes to avoid incidental take of razorback sucker. The basket strainers will be designed such that intake flow velocities at the periphery of the strainer mesh will be low enough to allow razorbacks to escape, and with a mesh size small enough to restrict uptake of juvenile through adult size classes. Razorbacks will be recovered in cooperation with DFG during the draining of each canal section in conjunction with the canal fishery and grass carp recovery effort described in Section 3.11.3.

Where blading is required, topsoil would be stockpiled and redistributed upon completion of construction to promote revegetation.

The Coachella Canal Lining Project's incremental contribution to cumulative special status species impacts along the lower Colorado River would be offset by the measures described in Section 7.2.4 and through two additional measures which address cumulative impacts to the razorback sucker and the bonytail chub, respectively. Potential incremental contributions to cumulative razorback sucker impacts will be offset by stocking 1,300 razorback suckers at least 25 centimeters (approximately 10 inches) or greater in length in the Colorado River between Parker Dam and Imperial Dam. Mitigation for impacts to bonytail chubs will be to provide \$3,250 (of a \$50,000 total) to the bonytail hatchery program described in the "Biological Opinion for Interim Surplus Criteria, Secretarial Implementation Agreements, Water Administration, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary, Arizona, California and Nevada" (FWS 2001).

7.2.7 Large Mammal Escape

A monitoring program to document the effectiveness of the entry/escape ridges and other escape mechanisms, such as the escape ramps in the area of high wildlife visitation (such as siphon 20), will be conducted on the lined Coachella Canal. Monitoring will be completed during the first summer following construction. If the first season's observations conclusively reconfirm the effectiveness of the entry/escape ridges and strategically placed escape ramps, the monitoring program will be concluded. If not, monitoring will continue for a second season. If the monitoring program indicates

that the ridges and escape ramps are insufficient, additional conventional escape ramps as described in Section 3.10.3 or other escape mechanisms will be added to the lined canal.

7.2.8 Canal Fishery

Construction (temporary) impacts to canal fisheries would be mitigated through the following measure:

- When construction activities are complete, channel catfish will be stocked (one time only) at rates of up to 105 pounds per mile to compensate for losses during construction.

Mitigation for permanent impacts to the canal fishery would be as follows:

- Eighty-two 16- by 50-foot artificial reefs will be installed and maintained in the newly lined portion of the Coachella Canal. The reefs will be made of tires bound together into mats and anchored to the canal side at a level to ensure submergence.
- Reclamation, in cooperation with FWS, DFG, and CVWD, would determine the location of the reefs in the canal.

If the artificial reefs are not as effective as expected, a one-time stocking of channel catfish at a maximum rate of 105 pounds per canal mile will be implemented. Reclamation and CVWD may elect alternative means to increase the ability of the lined canal to support an equivalent level of fish as would be provided by the artificial tire reefs.

7.2.9 Cultural Resources

The following mitigation measures will reduce impacts to cultural resources a less than significant level:

- Continuation of consultations with the Cahuilla Indian community and other area Native American tribal organizations should serve to recognize their interests and develop appropriate solutions to any issues. If impacts occur, mitigation would consist of professional recovery of cultural resources or development, where possible, of means to avoid impacts.
- Based on the canal's age and its importance to the development of the Coachella Valley, the canal may be eligible for (and is therefore assumed to be eligible for) the National Register of

Historic Places; therefore, the effects of lining the canal may be considered a significant historical resource impact. These impacts would be mitigated through appropriate documentation of pertinent information about the canal, such as a Historic American Engineering Record. The extent to which additional measures may be required for compliance with Section 106 of the National Historic Preservation Act will be determined in consultation with the State Historic Preservation Officer.

7.2.10 Recreation

Potentially significant impacts to recreation will be avoided through incorporation of the following mitigation measure:

- Off-highway vehicle access along the Bradshaw Trail will be maintained during construction (for example, by posting signs directing visitors to alternate locations where they may cross the Coachella Canal when siphon 24 is blocked by construction activity).

7.2.11 Air Quality

The following mitigation measures will mitigate fugitive dust impacts during project construction to below federal Clean Air Act General Conformity *de minimis* thresholds, but not to less than South Coast Air Quality Management District (SCAQMD) significance thresholds.

- Contractors will perform excavation, grading, materials handling, and hauling of materials in compliance with SCAQMD Rule 403, Fugitive Dust and ICAPCD Rule 800, Fugitive Dust Requirements for Control of Fine Particulate Matter (PM-10). Specific measures to be included in construction specifications will address the maintenance of adequate moisture content in soils to be excavated and transported; the stabilization of exposed graded areas; the cleaning of paved roads to be used as haul roads; paving or alternate treatment of unpaved roads considered for haul roads; and prevention of soil track-out from construction areas onto paved roads. Where required, contractors will obtain approval of dust control plans from the respective AQMD or APCD prior to the start of work.
- The construction contractor will obtain applicable air quality permits for the batch plant and any portable or stationary internal combustion engine subject to SCAQMD or ICPACD permit requirements.

- To reduce fugitive dust, the excavation site and the stockpile material will be watered twice a day and the unpaved roads would be watered every 45 minutes (the frequency of watering would differ for the Underwater Lining Alternative and Parallel Canal Alternative).
- Truck speeds on unpaved roads will not exceed 30 miles per hour.
- All trucks hauling materials subject to wind dispersal will be watered and covered.
- All disturbed soil areas not subject to revegetation will be stabilized with approved nontoxic soil binders, jute netting, or other methods, as appropriate. In particular, this applies to excavated soil placed along the banks of the canal.
- Where feasible, the construction contractor will use electric power from poles.
- Idling time of trucks and other construction equipment will be minimized.

7.2.12 Public Safety

With the incorporation of escape ladders, escape ridges, and (in areas of high wildlife visitation) escape ramps, the proposed project will materially reduce the drowning hazard associated with the canal. Accordingly, no public safety mitigation measures are required.