

**KERN WATER BANK**

**HABITAT  
CONSERVATION PLAN/  
NATURAL COMMUNITY  
CONSERVATION PLAN**

*KERN COUNTY, CALIFORNIA*

**FINAL  
October 2, 1997**

Prepared by:  
**Kern Water Bank Authority**

# KERN WATER BANK HABITAT CONSERVATION PLAN

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# **KERN WATER BANK HABITAT CONSERVATION PLAN**

## **S. EXECUTIVE SUMMARY**

The Kern Water Bank Habitat Conservation Plan / Natural Community Conservation Plan ("KWB HCP") documents a plan to accomplish both water conservation and environmental objectives. The primary water conservation objective is the storage of water in aquifers during times of surplus for later recovery during times of shortage. The primary environmental objective is to set aside large areas of the KWB for threatened and endangered species and other sensitive species and to implement a program to protect and enhance the habitat. The basic objectives of the KWB HCP for the Kern Water Bank project are to: 1) allow the economical development of water recharge and recovery facilities, 2) preserve compatible upland habitat and other sensitive areas of natural habitat and rare plants, 3) conserve species listed as threatened or endangered pursuant to federal and state environmental laws (listed species) as well as other sensitive species, 4) recreate intermittent wetland/rangeland habitat, 5) provide a conservation bank for third parties, and 6) permit farming. The project applicant and landowner is the Kern Water Bank Authority (KWBA).

### **Water Bank Facilities**

Prior to the purchase of the property by the California Department of Water Resources (DWR) for this water banking project, most of the land was used for intensive agriculture. To achieve its water management objectives, the KWBA constructed recharge basins, and will require the construction of additional basins, water conveyance facilities and water wells. The existing basins were created by constructing low levees along contours. This approach created minimal disturbance of the ground surface compared to other alternatives. The basin bottoms were left, as much as possible, in their natural condition. Future basins will be constructed in a similar manner.

Of the 19,900 acres that constitute the KWB property, 5,900 acres are proposed for routine recharge activities. The frequency of use of individual basins for recharge will vary depending on the availability of water supplies. Between the basins will be areas that will never be deliberately flooded. Accidental flooding, which may happen due to such things as levee breaks, will be remediated as quickly as practicable. Some of these areas have existing populations of listed plants. These will be preserved in special areas totaling 960 acres. Other areas between basins totaling 5,592 acres will revert to habitat. Additionally, 530 acres will be preserved and managed for mitigation of California Department of Water Resources projects. Of the remaining land, up to 481 acres will be used for permanent water banking facilities, 3,170 acres will be used for farming, and 3,267 acres will be used as a conservation bank. Of the 3,267 acres in the conservation bank, 490 acres is within a zone designated for future commercial development upon amendment of the HCP, but may be used at the KWBA's discretion as a conservation bank.

The basins which have been formed, and those to be formed, will create approximately 55 miles of levees with an approximate height of 3 feet. A total of 66 water wells currently exist on the property and more wells may be added before the

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project is complete. Several canals exist on and run alongside the property to facilitate water conveyance and new canals are proposed that would provide linkage among the spreading areas, wells, Kern River Canal and the California Aqueduct. Map 4, Kern Water Bank Land Use Plan, shows the location of existing and proposed wells, recovery canals, and recovery pipelines.

### **Environmental Aspects of The Project**

The proposed Kern Water Bank Project will be managed to complement regional wildlife conservation efforts. The project will have the following benefits:

- Much of the property will be returned to one of its historic uses: ground water recharge.
- Diverse types of habitat will be preserved. Intermittent wetland/rangeland habitat that was lost with the introduction of intensive farming will be restored on some parts of the property. Upland habitat suitable for the Tipton kangaroo rat, the blunt-nosed leopard lizard, and the San Joaquin kit fox will be preserved on other parts of the property.
- In addition to preserving the two types of habitat mentioned above, special areas to protect sensitive native habitat are planned.
- Surface disturbances during basin construction and recharge will be minimized.
- The natural design of the recharge basins, together with periodic flooding of the recharge basins, will allow movement of upland species among different populations, thus supporting maintenance of genetic diversity and recolonization.
- Land adjacent to the Kern River habitat corridor will be preserved.
- Areas adjacent to the ARCO Coles Levee Ecosystem Preserve will be protected as upland habitat and be offered as habitat mitigation to third parties.
- Large areas of intensive agriculture on the KWB have been removed from production and will be set aside as Compatible Habitat.

### **Minimization And Mitigation of Impacts**

Measures will be implemented during construction of new recharge basins and other water bank facilities to minimize impacts on listed species.

Sensitive habitat comprising 960 acres shall be managed to preserve natural habitat and protect existing populations of rare plants. Diversity of habitat will serve a variety of listed and candidate species and other sensitive species; the recharge areas shall be designed and operated for intermittent flooding and provide wetland habitat for waterfowl and other wetland species. Natural vegetation will be managed on an additional 9,389 acres, made up of 5,592 acres of compatible habitat between the

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recharge basins, 530 acres covered by a conservation easement and 3,267 acres in a conservation bank. Wildlife populations are expected to persist on the property, and mimic normal variations in size and location, utilizing a variety of habitats on the KWB. A Kern River habitat corridor shall be preserved but portions of the corridor may be flooded from time to time, due to high flows in the Kern River. Flooding in the habitat corridor will not be caused by KWBA, absent a major, accidental breach in a levee.

### **Monitoring And Reporting**

The KWBA will submit an annual report of habitat management and monitoring activities to the USFWS and CDFG.



# KERN WATER BANK HABITAT CONSERVATION PLAN

## I. INTRODUCTION

This document is a natural community conservation plan (NCCP) under the California Natural Community Conservation Plan Act and a habitat conservation plan (HCP) under the federal Endangered Species Act of 1973, for the 19,900 acre area known as the Kern Water Bank (KWB) in Kern County, California (see Map 1, Regional Location). Pursuant to the Monterey Agreement, the KWB property was transferred to the Kern Water Bank Authority (KWBA), a Joint Powers Authority formed pursuant to Government Code 6500 et seq., in exchange for 45,000 acre feet of State Water Project (SWP) entitlement as part of the resolution of a number of long-standing SWP issues.

The KWB transfer provides a historic opportunity to achieve a number of important water conservation objectives while at the same time providing valuable habitat for a variety of threatened, endangered and other species. KWBA is using and intends to use the property to bank water when available for use in dry years and for overdraft correction. To the extent KWBA is successful in this undertaking, it will help Kern County retain its agricultural base, particularly in permanent plantings and other high value crops.

KWBA proposes to return much of the area to historic intermittent wetland/rangeland habitat. Water from the Kern River, the State Water Project and other sources will be used to periodically flood portions of the KWB. The property will be left in as natural a state as possible, although levees have been and will be constructed along natural contours. Open areas between recharge basins will provide upland habitat and allow wildlife movement in and through the KWB.

The proposed Kern Water Bank HCP complements other habitat conservation programs in Kern County by providing habitat for a variety of wildlife species, while at the same time providing significant water resource conservation benefits to the State.

The principles of the HCP are as follows:

- Required and adaptive management techniques will be used for operations and habitat management
- Areas surrounding basins will be managed to provide habitat for listed species
- Incidental take may occur when basins are flooded
- The project requires no off-site mitigation

### History of Area

Prior to agricultural development of the KWB, much of the land was regularly flooded by high flows on the Kern River. The area is unique in the State in its ability to absorb water at an extremely high rate and to retain it in aquifers. Prior to agricultural development the intermittent wetland supported a great variety of plants and wildlife.

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In the 1880's, earthen canals and levees were constructed to aid the spreading of water, the resulting feed being used for cattle grazing. Land on the west side of the property was developed for farming during the late 1930's through the early 1950's. During this same period much of the property was explored for oil and gas resulting in a number of wells being drilled and pipelines constructed. From about 1960 to the early 1970's most of the remainder of the property was developed for agriculture. Throughout this time the land was still flooded in wet years to recharge water into the underground aquifer. This was done in a free form manner with the water being herded by bulldozers. In 1988 the land was purchased by the Department of Water Resources (DWR). DWR ceased most of the farming by 1991 in order to preserve water during a severe drought.

In 1995 the Kern County Water Agency ("KCWA") on behalf of KWBA received interim permits/authorizations, through a Section 7 consultation with the Bureau of Reclamation, from the USFWS and CDFG to initiate a water banking project as a result of the high availability of water from a heavy snow pack in the Sierras. The interim project was carried out in two stages:

Stage 1 resulted in the rehabilitation of disused canals and inundation of approximately 1518 acres of former agricultural land. Preconstruction surveys of the Stage 1 area revealed poor habitat values throughout the area and no suitable habitat for the listed species. Therefore, Stage 1 activities were expected not to result in a take of listed species. Stage 2 resulted in inundation of an estimated 1516 acres of grassland and fallow agricultural land. Based on planned Stage 2 flooding, there was a potential for the take of listed species, therefore, biological surveys for listed species were conducted in all areas proposed to be disturbed by construction of facilities (levees, roads, boxes) or flooded. Take was minimized and the mitigation is incorporated into this HCP.

The recharge basins were constructed by building low earth berms, approximately three feet in height, along natural contours of the land using soil adjacent to the berms. The bottom of the basins were left in a natural condition thus allowing vegetation to continue to grow. Vegetation on the basin bottoms is believed to enhance the basins' ability to recharge water.

In 1995, maintenance of the project area included repairs to levees and the removal of tumbleweed from roads, canals and basins. Refer to the Interim Water Recharge Project Biological Monitoring Report for the Period April 1995-March 31, 1996 for more details.

The KCWA on behalf of KWBA received extensions on the interim permits/authorizations for 1996 and can continue the Stage 1 and 2 banking activities permitted in 1995 through September 30, 1997. In 1996 the basins constructed in the previous year were utilized for water recharge.

The HCP supports a Section 10(a)(1)(B) application to allow additional basins to be developed, for construction of water delivery and recovery facilities, and for operations of the KWB.

# **KERN WATER BANK HABITAT CONSERVATION PLAN**

## **II. KERN WATER BANK PROJECT DESCRIPTION**

### ***A. PURPOSE***

The KWB HCP documents a plan to accomplish water conservation and environmental objectives. The primary water conservation objective is the storage of water in aquifers during times of surplus for later recovery during times of shortage. The primary environmental objective is to set aside areas of the KWB for threatened and endangered species and other sensitive species and to implement a program to protect and enhance habitat.

### ***B. AREA/USES SUBJECT TO PERMITS/AUTHORIZATIONS***

The HCP will be the basis for issuance of "incidental take" permits from the U.S. Fish and Wildlife Service (USFWS) and "management authorizations" from the California Department of Fish and Game (CDFG). The permits and authorizations will be issued to the Kern Water Bank Authority. USFWS will be issuing two permits to KWBA pursuant to Section 10(a) of the Federal Endangered Species Act of 1973 (FESA): the Project Permit and the Master Permit. Similarly, CDFG will issue two management authorizations to KWBA pursuant to the California Endangered Species Act (CESA) and the Natural Community Conservation Plan Act (NCCP Act): the Project Management Authorization and the Master Management Authorization.

The Project Permit and the Project Management Authorization (collectively, the Project Permits/Authorizations) will apply to specific activities that take place within the 19,900 acre Kern Water Bank (see Map 2, Project Permit Area). The Project Permits/Authorizations will permit KWBA to take incidentally both listed species and certain other species (collectively, covered species) in accordance with KWBA's operation of the Kern Water Bank without violating FESA and/or CESA.

The Master Permit and the Master Management Authorization (collectively, the Master Permits/Authorizations) will apply to third party activities that take place in specific areas of Kern County, and specific areas of the Allensworth area of Tulare County, and the Kettleman Hills area of Kings County (see Map 3, Master Permit Credit Area). In addition, KWBA will be eligible under certain circumstances to rely on the Master Permits/Authorizations for activities off and on the Kern Water Bank. Activities permitted under the Master Permits/Authorizations must be determined to be eligible by the USFWS and CDFG, in their absolute discretion.

# KERN WATER BANK HABITAT CONSERVATION PLAN

## 1. Uses Subject to Project Permits/Authorizations

The Project Permit area is the 19,900 acre Kern Water Bank property (see Map 2, Project Permit Area). The Project Permits/Authorizations will apply to the following activities conducted by or under the direction of the Kern Water Bank Authority (see Map 4, Land Use Plan and Table 1, Land Use Summary).

Water Delivery. Water delivered to the property for groundwater recharge, from whatever source, will be subject to all standards, permits and agreements applicable to the particular source of supply, including any applicable biological opinions relating to such source of supply. The KWBA will not request modifications in allocations or operations of Delta facilities for State Water Project or Central Valley Project water deliveries to the KWB.

Water Recharge and Recovery. Permanent operation of the banking facilities will include the flooding of basins, constructing facilities for recovery of the water from underground aquifers, and maintenance of all project facilities. In all, about 6,381 acres of land comprising the recharge basins, surrounding levees and other banking facilities will be developed as part of the permanent recharge project.

**TABLE 1, LAND USE SUMMARY**

LAND USE SUMMARY	AREA IN ACRES**
Recharge Basins	5,900*
Other Water Banking Facilities	481
Compatible Habitat	5,592*
Sensitive Habitat	960
DWR Mitigation Land	530
Farming	3,170
Conservation bank (includes potential commercial development zone of up to 490 acres)	3,267
TOTAL	19,900

\* KWBA Mitigation Land - 146 acres of Recharge Basins and 489 acres of Compatible Habitat totaling 635 acres will be covered by a conservation easement.

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\*\* Administrative modifications will allow for a shift of up to 559 acres of Compatible Habitat and 95 acres of Sensitive Habitat acres to Recharge Basins or Other Water Banking Facilities as described in section V. D. of the HCP.

Water Recovery and Other Banking Facilities. Recovery of the water recharged will be through a system of water wells, pipelines and canals. This system, when built-out, may include up to 132 wells and would be spread over the entire property to allow flexibility in the recovery of water. There are 66 existing agricultural wells on the property which could be utilized for water recovery. DWR, through the "Ground Water Extraction Operations at the Kern Fan Element" project, rehabilitated 28 of these wells and constructed pipelines and canals. The remaining 38 existing wells may be rehabilitated. Approximately 66 additional wells may be drilled and conveyance pipelines and small canals will be constructed for water recovery, as shown on Map 4, Kern Water Bank Land Use Plan.

Supply/Recovery Canal. A supply/recovery canal project which, if built, will be located within the Supply/Recovery Canal Zone as shown on Map 2, (Project Permit Area) may be constructed to facilitate water delivery to and from the California Aqueduct. The canal may be lined with concrete and will utilize pump stations to lift the water as required. Turnouts may be constructed to deliver water to the recharge areas. Recovery pipelines and small canals from the water wells may be connected to the canal.

Kern River Reverse Flow Channel Project. The Kern River channel may be utilized to deliver water from the California Aqueduct to the project. By constructing earth berms and pump stations, water can be lifted up the river channel for conveyance to the recharge areas. Under this HCP, KWBA has the authority for the incidental take of covered species due to the construction and operation of the Reverse Flow Channel Project on the Kern Water Bank, subject to further agreement with the Resource Agencies regarding the amount and type of mitigation to be required. However, before KWBA can complete the project, it will need further permits from other agencies with jurisdiction within and without the Kern Water Bank, and from CDFG and USFWS for KWBA's activities outside the Kern Water Bank.

Compatible Habitat. A total of 5,592 acres of compatible habitat will be preserved and managed around the banking facilities. Much of this area is fallowed agricultural land that has become established with non-native grassland type vegetation. It occurs on higher ground between the basins and will provide upland habitat for San Joaquin kit foxes and other upland species.

KWBA Mitigation Land. To compensate for the 481 acres that may be permanently impacted by the Project, the KWBA will grant a conservation easement to CDFG on a 635 acre parcel comprised of 489 acres of Compatible Habitat and 146 acres of Recharge Basins surrounding the DWR Mitigation land. The KWBA will manage this land as compatible habitat and a recharge basin through the life of the permits/authorizations and has secured the long-term management of this land after termination of the permits/authorizations.

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Sensitive Habitat. Three areas of sensitive habitat containing remnant native saltbush and valley sink scrub habitat have been identified totaling 960 acres. These areas are comprised of historic upland habitat and non-farmed locations of the KWB. Sensitive habitat benefits the San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, San Joaquin woolly-threads, and Hoover's woolly-star. These areas will be protected through out the life of the permit.

DWR Mitigation Land Conservation Easement. This land comprises a 530-acre Conservation Easement which was set aside to mitigate projects carried out by DWR. Management of this easement will be carried out by the KWBA in accordance with an existing management plan for the area (refer to the "Agreement regarding Assumption of Mitigation Responsibility and Consent to Transfer of Kern Water Bank Lands"). KWBA acknowledges that this mitigation obligation is a separate obligation and is not considered mitigation for the proposed project. Mitigation obligations which will be conducted on this parcel are contained in Exhibit B to the KWB HCP Implementation Agreement.

Conservation bank. 3,267 acres of potential and occupied habitat has been designated as a biological conservation bank. Of this, up to 490 acres may be sold or used by KWBA for commercial development, subject to the terms of this HCP, the related KWB NCCP/HCP Implementation Agreement, and the related Conservation Bank Agreement. Much of this land has been identified as pre-approved mitigation land by CDFG and is adjacent with the Coles Levee Ecosystem Preserve created by ARCO Oil and Gas on the west side of Interstate Highway 5, and with other CDFG pre-approved acquisition areas south of the project site.

KWBA will have the authority to sell, or use on its on behalf, up to 3,267 conservation credits, each representing one acre of land in the conservation bank. On an annual basis, KWBA will record a conservation easement on a number of acres in the conservation bank equal to the number of conservation credits sold in that year (as adjusted pursuant to the conservation bank agreement to factor in the improvements on the bank, such as canals), protecting that land in perpetuity. The conservation easements will be located in a manner to create large contiguous blocks of protected habitat. An annual accounting of the conservation bank sales and recorded conservation easements will be sent to USFWS and CDFG by March 1<sup>st</sup> each year.

The purchasers of conservation credits are expected to be landowners, developers and others who have projects in a predefined area (see Map 3 - Master Permit Credit Area) within Kern County, the Allensworth area of Tulare County, and the Kettleman Hills area of Kings County, that must obtain incidental take authority from USFWS and CDFG. The Section 10(a)(1)(B) Permit and the Section 2081/2835 management authorizations issued with regard to the conservation bank will authorize incidental take by third parties that acquire conservation credits, provided that the USFWS and CDFG determine that the use of the conservation credits as compensation for the proposed impact is appropriate. See under C. Master Permits/Authorizations below. In addition, KWBA will, with the consent of USFWS and CDFG, have the ability to use conservation credits for other projects it may have in the Master Permit Credit Area (but outside the

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HCP boundary), including but not limited to projects in the Commercial Development Zone.

To ensure funding for the management of any conservation bank lands for which conservation credits have been sold as credits, KWBA will place \$375.00, which will be adjusted annually for inflation based on the Implicit Price Deflator for State and Local Government Purchase of Goods and Services published by the United States Department of Commerce, for every credit sold into an endowment fund (see Conservation Bank Agreement). The Resource Agencies may require other additional payments, and/or on- and off-site actions as appropriate for individual projects.

Commercial Development Zone. KWBA has the authority to sell or use for itself approximately 490 acres for commercial development purposes within the commercial development zone shown on Map 4 if the KWBA elects not to use this land for mitigation credits. The process whereby KWBA may obtain the Resource Agencies' approval of commercial development is as follows.

1. KWBA will send a notice to USFWS and CDFG stating the location of the parcel that KWBA wishes to develop or sell for development. The effect of this development notice will be to make a minor amendment to this HCP to remove the incidental take authority granted by the Project Permits/Authorizations for activities on the land set out in the development notice.
2. KWBA will prepare a biological assessment identifying: 1) the presence of listed species or their habitat, 2) the impacts of the proposed project on state and Federal listed species, and 3) measures to minimize and mitigate the impacts.
3. After the Resource Agencies receive the development notice, KWBA and the Resource Agencies must agree on the on-site and off-site mitigation requirements for KWBA to develop that parcel. KWBA may, but will not be required to, use its own conservation credits to satisfy the off-site mitigation requirement. Thus, selling all conservation credits except those within the development zone will not prevent KWBA from developing all the land within the development zone.

Farming. The remaining 3,170 acres of the project site may be farmed in a manner appropriate to the soil conditions found on site. Crops historically grown in the area would most likely be farmed including cotton, grapes, etc. This land may also be used for water recharge and recovery purposes, including recharge basins, levees and related uses.

Excluded. Subsurface minerals rights are owned by oil companies. Various utility easements cross through the project area. There is no connection or relationship between the activities and operation of the mineral right owners, utility easement holders and the operation of the KWBA. The infrastructure and facilities owned by the KWBA

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have been constructed to specifically avoid interfering with the oil production facilities. Activities and “take” authority related to utility maintenance and development of oil or gas exploration or extraction are not covered by the Project Permits/Authorizations. KWBA has agreed to cooperate with the Resource Agencies in selling conservation credits to these holders of pre-existing rights when they seek to acquire take permits, so that their incidental take can be authorized by the Master Permits/Authorizations.

Term. The Permits/Authorizations will be issued for a period of 75 years.

### **C. PERMITTED ACTIVITIES**

The following activities will be permitted. Location of the permitted area is shown on Map 2, (Project Permit Area). Details of the construction, operations and maintenance activities are included in the Water Bank Operations Manual (Appendix A). Details of the habitat management activities are included in Chapter IV and in Vegetation Management Plan (Appendix C) and Waterfowl Management Plan (Appendix D).

- Construction, maintenance, and operations of water recharge facilities
- Construction, maintenance, and operations of water recovery facilities
- Construction, maintenance, and operations of water conveyance facilities (pipelines, canals, pumps, and appurtenant facilities)
- Construction and operation of buildings and storage facilities
- Construction and maintenance of fences and access roads
- Flood prevention
- Farming on land designated for farming
- Habitat management pursuant to the Vegetation Management Plan attached as Appendix C, including:
  - Vegetation management including grazing and burning
  - Habitat enhancement for listed and non-listed species
  - Management of plants, wildlife and habitats including direct and indirect manipulation of individuals and populations.
  - Creation, use, and maintenance of waterfowl and upland habitat
  - Predator control (in accordance with applicable State laws and regulations)
  - Rodent control (in accordance with applicable State laws and regulations)
- Educational activities
- Research
- Recreational activities (scope of recreational activities will be developed in coordination with the USFWS and CDFG), such as:
  - Aquatic recreation
  - Hunting
  - Wildlife viewing
  - Bicycling
  - Hiking
  - Equestrian
  - Other recreational activities subject to approval by the Resource Agencies.



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Public health activities (mosquito control & other government health & safety laws)  
 Weed control  
 Access for emergency response, fire protection, and fire training  
 Mitigation for third party activities through the conservation bank.  
 Commercial Development - Subject to site plan and on-site mitigation approval by the USFWS and CDFG.

Separate permits, laws or regulations may apply to some of the permitted activities.

### ***D. CONSTRUCTION OF FACILITIES***

The following provides a brief explanation of how project elements will be constructed. Details are provided in the Operations Manual in Appendix A. Table 2 provides an acreage breakdown for each element.

**TABLE 2, ACREAGE BREAKDOWN**

	Unit	Quantity	Width feet	Area acre	Total acre
<b><i>Recharge Facilities</i></b>					
Existing Basins					3,034
Proposed Basins					2,866
Total					5,900
<b><i>Permanent Water Banking Facilities (1)</i></b>					
<b>Recovery Facilities</b>					
Wells - Existing Hooked Up	ea	28		0.5	14
Wells - Existing Not Hooked Up	ea	38		0.5	19
Wells - Proposed New	ea	66		0.5	33
<b>Conveyance Facilities</b>					
Proposed - Lined	mi	18	40		87
Existing - Unlined	mi	31	60		225
Supply/Recovery Canal	mi	6	100		73
Pump Stations	ea	4		3	12
<b>Kern River Reverse Flow</b>					
Earthwork	mi	1	30		4
Pump Stations					
River	ea	2		5	10
City 2800 Acres	ea	4		1	4
Total					481

### ***Temporarily Disturbed Areas***

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Canal Construction	mi	6	100	73
Pipelines - Proposed	mi	30	60	218
Total	mi	30	60	291

(1) Includes new roads where required

**Recharge Basin Construction.** The recharge basins will be built utilizing the natural topography by constructing low earth berms to serve as levees along contours of the land. The levee will be built utilizing soil adjacent to the levee inside the basin. Typical construction includes pad clearing, soil moving and soil compaction. The bottom of the basins will be left in a natural condition thus allowing vegetation to continue to grow.

**Recharge Conveyance Canal Construction.** The conveyance canals will be sized as required to convey water from the turnout structures to the recharge areas. Canals will have associated turnouts, weirs, flow control, measurement structures and road crossings as required.

**Existing Water Well Rehabilitation.** Rehabilitating water wells consists of cleaning motors, pumps and electrical panels, and checking out equipment to evaluate if service is required.

**Construction of New Wells.** The following construction activities will be typical for installation of new wells: digging sumps for retention of water used for drilling and discharge of drill cuttings; setting up drilling rigs and drilling pipe trailers at well sites; and installation of casing, gravel, concrete seals, pumps, motors, concrete pads, electrical equipment and discharge piping.

**Construction of Underground Recovery Pipelines.** Lateral pipeline construction consists of clearing, trenching, pipe delivery, unloading, pipe installation, backfilling and final grading. The initial operation will include clearing of the proposed alignment of the pipeline. Trenching will be accomplished using either an excavator or trencher. Spoil piles will be located directly adjacent to the trench. Pipe will be delivered by trucks and unloaded using a crane or forklift along the trench in position for pipe laying activities. A crane will hoist and position the pipe in the trench. A loader will move soil excavated from the trench to backfill the pipe. Compaction equipment will be utilized to achieve required compaction. After backfilling is complete the pipeline corridor will be final graded with the excess material being mounded over the pipe to allow for settlement.

**Construction of Recovery Canals.** Concrete lined or earthen recovery canals will connect recovery pipelines and recovery wells to off site conveyance facilities. The canals will be constructed similar to the recharge canals described above but may have a concrete lining.

**Supply/Recovery Canal Construction.** If built, the supply/recovery canal may be concrete lined and will convey water to the recharge areas and from the recovery wells. It

## **KERN WATER BANK HABITAT CONSERVATION PLAN**

will be sized for both activities. Construction for the canal will be similar to the construction of the recovery canals. The supply/recovery canal will be located within the zone as shown on the Map 2, Project Permit Area.

**Recovery Pump Stations.** Where necessary, recovery pump stations will be constructed. Pump station sites will be cleared, grubbed and moisture conditioned. Excavation will be required to allow for construction of retaining walls, foundations, and concrete. Pumps, motors and electrical panels will be installed. This effort will require cranes, delivery trucks, water trucks, compactors, excavators and graders.

**Kern River Reverse Flow.** The Kern River channel will be utilized to convey water from the California Aqueduct to the recharge areas. At two or more locations along the existing river bed sand earth berms would be constructed utilizing scrapers, water trucks, bulldozers and graders. At these locations, pumps and bypass pipelines will be installed. Pile drivers will install piles for support of pump platforms. Piping, pumps and motors will be installed using cranes, delivery trucks and back hoes. Control structures will be constructed using similar equipment.

### ***E. MANAGEMENT OF OPERATIONS AND MAINTENANCE***

**Recharge Basins.** The recharge basins will be managed to maximize the use of available water supplies and to minimize cost for conveyance and operation. The basins will be designed into several systems and will be located on the property to take advantage of the different sources of available water. A hierarchy of basin filling will be established so when water is recharged, specific basin systems will be utilized frequently, while others may only be filled on an occasional basis.

Within each system the water will flow from basin to basin through an interbasin structure which will control the water level in the preceding basin and the flow rate to the next basin in the chain. To prevent impacts on nesting birds, the basins, to the extent possible for the period March through July, shall be kept at a constant level, except for the basins at the end of a chain which will accommodate fluctuating flows.

If a basin has been idle for more than two years, subsequent filling shall be done slowly if possible, mimicking heavy rainfall, so that any covered animals that may have inhabited the basin bottoms or sides may escape before drowning.

**Flooding Frequency.** Flooding frequency of recharge basins is dependent upon seasonal precipitation rates. Although models have been prepared to predict water availability over a long period of time, final operations will depend on actual rain and snowfall totals each year. During normal rainfall years, annual flooding would take place. During above normal years the basins will be flooded to their full capacity. The frequency in which the basins will be used for recharge is projected to vary: infrequently (1 year in 10) 5,900 acres are estimated to be flooded; on an intermediate basis (2 years in 10) 4,830 acres are estimated to be flooded; and on a frequent basis (5 years in 10) 2,110 acres are expected to be flooded. The duration of flooding each year will vary depending on weather conditions (see Map 5, Recharge Frequency Plan).

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Canal and Basin Bank Management. Seasonal release, conveyance and storage of water results in emergent wetland vegetation in canals and basins. Tall growth of this vegetation impairs water flow and recharge capability, reduces the ability to control mosquitoes, and therefore must be managed. Vegetation management methods under consideration for canals and basins include hand control, use of light weight equipment (weed eaters), grazing, mowing, and burning. Mowing is proposed to maintain seasonal wetland vegetation on basin edges adjacent to roads. Riparian vegetation on promontories, peninsulas, and islands will be allowed to achieve full canopy cover. When basins are to remain dry for extended periods, prescribed burning may be used for weed control. Silt removal from canals and recharge basins will be done using excavators, backhoes or loaders.

Canals for water recharge or recovery will be located according to the topography and location of existing facilities. The present network of internal access roads would be extended across a new canal to provide short, infrequently traveled bridges which would serve for connectivity for even small vertebrates during those periods when the canal was not dry. The canal bottom may be concrete lined to retard water loss and, if lined, would not require management for Russian thistle as do earthen canals in the area. Canal side slopes would be shallow enough to allow animals to escape from the interior.

If a recovery canal has been idle for more than two years, subsequent use shall be done slowly if possible, mimicking heavy rainfall, so that any covered animals that may inhabit the canal bottoms or sides may escape before drowning. In addition, KWBA shall do a summary survey of the unused canals that KWBA expects to use in the near future, prior to the nesting season of burrowing owls. If KWBA discovers a canal with numerous burrows, KWBA shall, in consultation with the Resource Agencies, collapse the burrows in a manner that the burrows may not be used for nesting purposes.

Roads and Levees. Maintenance work on roads and levees will be based on routine inspections during operating periods and periodically during non-operating periods. Typical work will include: clearing vegetation; grading roads and levees; mowing of vegetation; repair and replacement of weak sections of levees; removal of silt and repair of erosion.

Vegetation removal from roadways, turnouts, interbasin structures, road crossings and control structures will be accomplished by burning, motor grading, mowing, herbicide or by hand. Use of motor graders utilized for roads, canals and levees will be minimized. Silt removal from canals and recharge basins will be by excavators, backhoes or loaders. Where seepage of water through levees is identified, backhoes will be utilized to make the repair.

Rodents such as ground squirrels and pocket gophers can cause major structural problems on levees and as such rodent activity must be controlled. However, certain listed species which may occur within the Kern Water Bank project area (kit fox, kangaroo rat, antelope squirrel) are sensitive to activities historically used to control pest vertebrate species (ground squirrels, gophers and moles). Poisons can either be directly

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eaten by the listed species or can be transferred through the consumption of poisoned animals.

The California Department of Pesticide Regulation (CDPR) is aware of the problems facing listed species in areas where vertebrate toxicants are commonly used to control vertebrate pests. To resolve these issues some County agricultural departments (including Kern County) established local advisory groups to come up with alternative strategies to protect listed species from harmful effects of pesticides. As a result of these group meetings a set of draft protection measures were developed for the San Joaquin kit fox and other species. Protection measures for kit fox include preventing kit fox access to baits in bait stations, and the immediate disposal of above ground carcasses.

Within the Kern Water Bank area vertebrate pest control will occur where pests create structural problems on levees and roads. All vertebrate pest control activities will comply with the Interim Measures for Use of Rodenticides in Kern County (the "Interim Measures"), published by the U.S. Environmental Protection Agency and attached to and incorporated by reference into the Vegetation Management Plan (Appendix C), while the Interim Measures are in effect. Thereafter, KWBA shall comply with all applicable laws, rules and regulations regarding pesticide uses. Notwithstanding the foregoing, KWBA and its lessees may apply pesticides in the Farming sector on land actually being used for farming in accordance with customary commercial farming practices, and all applicable laws, regulations and labels.

Approximately 75 miles of roads traverse the Kern Water Bank providing access to levees and canals for operational management and inspection. The roads represent a significant management and financial investment. The existing vegetation on the majority of the road surfaces is comprised of a host of exotic weeds such as prickly lettuce (*Lactuca serfjoia*), cheeseweed (*Malva parviflora*), and Johnson grass (*Sorghum halepense*). Pest plants that are difficult to control include Bermuda grass (*Cynodon dactylon*), large crab grass (*Digitaria sanguinalis*), and Russian thistle (*Salsola* spp). These exotics prefer barren and disturbed soil conditions. Once established, exotic pest plants inhibit native plant colonization.

Currently road management includes annual gravel placement, annual mowing, biannual road grading and vegetation management. The vegetation management program for roads will focus on increasing cover on roads surfaces to substantially decrease the total area of annually maintained (graded) road surface. Annual road grading perpetuates exotic pest plant colonization, and contributes to erosion and poor water quality. Maintaining vegetative cover on the road surfaces may reduce erosion of soil into adjacent levees, canals and basins. Seeding road surfaces with native grass seed such as creeping wild rye (*Leymus triticoides*) may reduce erosion. The perennial grass cover may withstand occasional vehicular impact and mowing management.

Maintenance of road shoulders will be minimized. At present, grading results in barren soil up to twenty-five feet from the road edge and often the "wind row" of graded soil is placed at the water's edge of existing basins. Native plants currently inhabiting the roadside edges and setbacks include salt grass (*Distichlis spicata*), creeping wild rye

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(*Leymus triticoides*), big salt bush (*Atriplex lentiformis*), and others. The alternative to grading road shoulders may be to mow the setback area to a stubble height of inches, maintaining vegetative cover where possible. Mowing would target the reduction of annual weed seed and biomass. Timing of the mowing during the "milk" stage of seed development will effectively reduce seed production of most annual plants. Mowing shall coincide with dry, hot weather when soil moisture has decreased. Most short-lived annual weed plants will not live long enough to regrow and produce an abundance of viable seed.

**Herbicides for Weed Control.** Land managers use herbicides in combination with other vegetation management tools (mowing, discing, burning) to control the growth of unwanted vegetation. Weeds growing in channels can significantly affect water capacity and flow, and trees and shrubs growing along access roads can restrict access.

The large scale use of herbicides is an expensive management tool and is typically only used when other less expensive methods have failed or are not appropriate. Mechanical control is the most commonly used vegetation management tool in open fields. As a result, within the Kern Water Bank area, herbicides will only be used occasionally on a small scale. In all cases herbicides will only be used in accordance with County and State laws and regulations and with the approval of USFWS and CDFG or as directed in the approved management plan. This restriction does not apply to farming activities in the Farming sector. KWBA and its lessees may apply pesticides in the Farming sector on land actually being used for farming in accordance with customary commercial farming practices, and all applicable laws, regulations and labels.

**Water Wells.** During a pumping season, each well site will be checked by a system operator on a regular basis. This person will take flow and electrical meter readings and will also perform facility operation checks on the motor, pump, lubrication and electrical systems. Periodically, ground water levels will be measured and water quality samples will be taken at each production well. In non-pumping years, each well will be run periodically to test the basic operation of the equipment.

### ***F. MASTER PERMITS/AUTHORIZATIONS***

The Master Permits/Authorizations issued to the KWBA will allow the incidental take of listed species and other species by third parties and KWBA for activities both in and outside of Kern County (see Map 3, Master Permit Credit Area). The purpose of the Master Permits/Authorizations is to encourage use of the Kern Water Bank conservation bank (and thereby insure perpetual protection of a large contiguous area of habitat) and to streamline the Resource Agencies' incidental take permitting process. The take authority under the Master Permits/Authorizations will be issued for a period of 75 years from the first issuance of the Master Permits/Authorizations to KWBA.

The Master Permit Credit Area was determined in consultation between KWBA, USFWS and CDFG. The parties defined a contiguous area surrounding the Kern Water Bank whose habitat is comparable to that of the Kern Water Bank and where sufficient

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development pressures exist which make the use of the conservation bank both likely and beneficial to the covered species at risk due to the development pressure.

### **1. Criteria For Use of Conservation Bank.**

The conservation bank can be used by third parties that require USFWS and/or CDFG incidental take authorization or that require mitigation as a result of a Section 7 consultation with the USFWS (e.g., projects requiring federal permits). The conservation bank can also be used by a third party that already has take authorizations, such as the City of Bakersfield, and needs to provide mitigation land to meet the requirements of its HCP.

Third-party projects that lie within the Master Permit Credit Area may be eligible to obtain incidental take authorization protection under the Kern Water Bank if land lost, either temporarily or permanently, as a result of project implementation:

- 1) Contains habitat of comparable value to the replacement habitat found in the conservation bank, and
- 2) Is occupied or has the potential to be occupied by San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, and/or San Joaquin antelope squirrel.

The Resource Agencies have absolute discretion to determine whether a third-party project may obtain incidental take authority under the Master Permit. Currently, the USFWS intends to limit the use of the Master Permit to allow incidental take for only those projects where the impacts of the activity would qualify for a low effect habitat conservation plan in accordance with the HCP Handbook, published in November, 1996. However, it is possible that at some point in the future the USFWS may exercise its discretion to allow a person to obtain take authority under the Master Permit whose activity would not qualify for a low effect habitat conservation plan.

Third parties seeking to use conservation bank lands for listed species whose presence is then undocumented on the conservation bank land, such as giant kangaroo rat, would have to provide proof that the species is found on the conservation bank lands.

### **2. Method for Obtaining Take Authority**

A landowner or developer in the Master Permit Credit Area will be able to utilize the incidental take authority of the Master Permits/Authorizations through the following process:

- a) The landowner/developer will prepare a biological assessment identifying:
  - 1) the presence of listed species or their habitat and to other species that will be covered species under the Master Permits/Authorization,
  - 2) the impacts of the proposed project on state and Federal listed species, and
  - 3) measures to minimize and mitigate the impacts.

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- b) The biological assessment will be submitted to USFWS, if potential impacts to Federal listed species are found, and CDFG, if potential impacts to state listed species are found, for review and comment.
- c) If USFWS and CDFG, as applicable, conclude that the use of the conservation bank as compensation for project impacts is appropriate, the applicable agency will determine the amount of credits required to compensate for the project impacts and will specify any other appropriate mitigation or compensation measures in accordance with the Resource Agency's policies. At the discretion of USFWS and CDFG, a party may become an included party to the Master Permit if none of the on-site mitigation or compensation measures will require KWBA to enforce or control the mitigation or compensation measures (e.g. protection of land at the project site by easement granted to and managed by someone other than KWBA). USFWS and/or CDFG may require surveys on the proposed compensation land to assure species presence and adequate habitat quality. The landowner/developer will be responsible for all costs associated with the surveys which must be coordinated with and approved by the Resource Agencies.
- d) The landowner/developer and the Resource Agencies will execute an agreement documenting that the landowner/developer is bound to comply with the conditions specified in the agreement as it relates to the landowner.
- e) Upon receipt of an executed agreement by KWBA, KWBA may, but is not required to, sell the conservation credits to the third party permittee.
- f) Upon the sale of conservation credits to the permittee, KWBA will notify the Resource Agencies of the sale, attaching the agreement and a certificate evidencing the number of conservation credits sold. The Resource Agencies will then concur with the issuance by KWBA to the permittee of a certificate of inclusion, indicating that the permittee may rely on the incidental take authority established by the Master Permits/Authorizations.

The USFWS expects that the landowners/developers will require that their agreements with the USFWS implement the "No Surprises" Policy in a manner similar to the way the No Surprises Policy is implemented in Section V.E. of this HCP.

The process whereby KWBA will be able to use conservation credits and rely on the incidental take authority of the Master Permits/Authorizations is fundamentally the same. KWBA will identify a particular project for which it seeks incidental take authority and the ability to use conservation credits in mitigation. The project may be one within the development zone on the Kern Water Bank, or the project may be located off the Kern Water Bank within the Master Permit Credit Area. USFWS and CDFG shall then determine whether the project is suitable for KWBA to use conservation credits and



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rely on the Master Permits/Authorizations. If USFWS and CDFG find the project suitable, they will, in consultation with KWBA, establish the number of conservation credits that KWBA must relinquish in order to obtain incidental take authority, and establish, in a written agreement between KWBA and the Resource Agencies, any other appropriate mitigation or compensation measures. If KWBA has sufficient credits remaining, it will deliver a conservation credit certificate evidencing that it is relinquishing the required number of credits and an executed agreement regarding its mitigation and/or compensation obligations for its new project. The Resource Agencies will then concur with KWBA issuing itself a certificate of compliance indicating that KWBA may rely on the incidental take authority established by the Master Permits/Authorizations. The certificate of compliance is revocable upon a breach by KWBA of its obligations under the agreement for its new project.

USFWS will comply with NEPA as appropriate and necessary, upon concurring with the issuance of certificates of inclusion and compliance.

### **3. Incidental Take**

Implementation of the Master Permit/Authorization may result in the loss of listed species and other sensitive species in the Master Permit Credit Area through ground disturbance to construct buildings, roads, pipelines, and other facilities. Projects approved under the Master Permit/Authorization may also cause take under FESA by eliminating habitat of listed species. For the Tipton kangaroo rat, San Joaquin kit fox, and San Joaquin antelope squirrel, ground disturbance could cause take through collapsing of burrows, crushing by grading equipment, and harassment.

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## III. BIOLOGICAL DATA AND SPECIES OF SPECIAL CONCERN

### A. COVERED SPECIES

Four listed species, the San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard and San Joaquin antelope squirrel, are suspected to be distributed throughout the Kern Water Bank project area and thus may be impacted by the water recharge project. Two listed plant species have documented occurrences within identified sensitive habitat areas. Other listed species may be present by association with particular habitats in the area, including the blunt-nosed leopard lizard, or may become established or expand into the management areas as a result of beneficial management activities.

Based on data collected from field surveys and review of authoritative sources, the following species have been identified as potentially subject to incidental take and are addressed by the HCP and state and Federal permits/authorizations. The species are divided into two groups. Group 1, comprising 30 animal species and 15 plant species, some of which are listed under FESA, CESA or both, constitutes those species which, due to their rarity and smaller preferred habitats, KWBA and the Resource Agencies believe have a relatively significant chance of both becoming established on the Kern Water Bank and being listed during the life of the permits. KWBA, through required and adaptive management techniques, will seek to manage the Kern Water Bank specifically for the benefit of the Group 1 species. Group 2 species, comprising 87 animal species and 29 plant species, are those species which, due to a larger current population or a larger or incompatible (compared to that found at the Kern Water Bank) preferred habitat, are relatively unlikely to both be listed and become established at the Kern Water Bank during the life of the permit. The Resource Agencies expect, however, that any management activities engaged in for the benefit of Group 1 species will also benefit the Group 2 species. The Group 2 species are covered species in the event that any take of that species occurs. Group 1 species and Group 2 species collectively are referred to throughout this document as covered species. Species accounts for listed and candidate species are included in Appendix B. Scientific names and status of all species are included in Table 1 of Appendix B. A description of habitat communities documented in the Kern Water Bank is also included in Appendix B.

### GROUP 1 SPECIES

#### **Federally Listed Covered by the Section 10(a) Permit**

Endangered (FE), or Threatened (FT)

\* documented occurrence in the Kern Water Bank Project Area

#### Animals

San Joaquin kit fox (FE) \*  
Tipton kangaroo rat (FE) \*  
Blunt-nosed leopard lizard (FE) \*  
Giant kangaroo rat (FE)

#### Plants

San Joaquin woolly-threads (FE)\*  
Hoover's woolly-star (FT) \*  
California jewelflower (FE)  
Kern mallow (FE)

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American Peregrine falcon (FE)	Bakersfield cactus (FE)
Valley elderberry longhorn beetle (FT)	
Giant garter snake (FT)	
Aleutian Canada goose (FE)	
Vernal pool fairy shrimp (FT)	
Conservancy fairy shrimp (FE)	
Vernal pool tadpole shrimp (FE)	
Longhorn fairy shrimp (FE)	
Southwestern willow flycatcher (FE)	
California condor (FE)	
Bald eagle (FT)	
Least Bell's vireo (FE)	
California red-legged frog (FT)	

### State Listed Species Covered by the Section 2081/2835 Management Authorization

Endangered (SE), Threatened (ST) or Fully Protected (FP)

\* documented occurrence in the Kern Water Bank Project Area

#### Animals

San Joaquin kit fox (ST) \*  
Tipton kangaroo rat (SE) \*  
Blunt-nosed leopard lizard (SE, FP) \*  
San Joaquin antelope squirrel (ST)\*  
Giant kangaroo rat (SE)  
American Peregrine falcon (SE, FP)  
Swainson's hawk (ST)  
Giant garter snake (ST, FP)  
Greater sandhill crane (ST)  
White-tailed kite (FP)  
Bank Swallow (ST)  
Least Bell's vireo (SE)  
California Condor (SE, FP)  
Bald eagle (SE, FP)  
Southwestern willow flycatcher (SE)

#### Plants

Bakersfield cactus (SE)  
California jewelflower (SE)  
Bakersfield saltbush (SE)  
Striped adobe lily (ST)

### Other Species of Concern Covered by the HCP

The Scientific names and status for these species are included in Table 1 of Appendix B

\* documented occurrence in the Kern Water Bank Project Area

#### Animals

Burrowing owl\*  
Western pond turtle

#### Plants

Recurved larkspur\*  
Slough thistle\*

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Western spadefoot toad	Heart-leaved saltbush
Ferruginous hawk	Hispid bird's beak
Western snowy plover (interior)	Lost Hills saltbush
Mountain plover	Kern tarplant
Loggerhead shrike *	Comanche Point layia
White-faced ibis	Lesser saltbush
Tricolored blackbird	Alkali mariposa lily
Le Conte's thrasher	
Greater western mastiff bat	
Pacific western big-eared bat	
Buena Vista Lake shrew (Federal Candidate Species)	
American badger*	
California tiger salamander	

### GROUP 2 SPECIES

#### Animals

River Otter  
Golden Beaver  
Ringtail  
Mountain Lion  
Bobcat  
Tule Elk  
Pronghorn  
Yellow-checked Weasel  
Buttonwillow Weasel  
San Joaquin Myotis  
Spotted Bat  
Pallid Bat  
San Joaquin Pocket Mouse  
McKittrick Pocket Mouse  
Tulare Grasshopper Mouse  
Buena Vista Lake Pocket Gopher  
Short-nosed Kangaroo Rat  
Tulare Kangaroo Rat  
Carrizo Plain Kangaroo Rat  
Golden Eagle

Northern Goshawk  
Sharp-skinned Hawk  
Cooper's Hawk  
Red-shouldered Hawk  
Merlin  
Prairie Falcon  
Northern Harrier

#### Plants

Mexican Mosquito Fern  
Coulter's goldfields  
Small-leaved Monkeyflower  
Little Mousetail  
Round Woolly-marbles  
Mojave Indigo-bush  
Sanford's Arrowhead  
Crownscale  
Brittlescale  
Vasek's Clarkia  
Small-flowered Morning glory  
Cottony Buckwheat  
Temblor Buckwheat  
Tejon Poppy  
Stinkbells

Golden goodmania  
Salinas Valley Goldfields  
Pale-yellow Layia  
Munz's Tidy-tips  
Jared's Pepper Grass  
Large-flower Linanthus  
Showy Madia  
California spineflower  
Slender nemacladus  
Gairdner's Yampah  
Oil Neststraw  
Mason's Neststraw

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Long-eared Owl  
Short-eared Owl  
Common Barn Owl  
Osprey  
Purple Martin  
Black Swift  
Common Nighthawk  
Lesser Nighthawk  
Hairy Woodpecker  
Lewis's Woodpecker  
Blue Grosbeak  
Yellow Warbler  
Summer Tanager  
Yellow-breasted Chat  
Western Yellow-billed Cuckoo  
Double-crested Cormorant  
Common Loon  
Western Grebe  
Clark's Grebe  
Canvasback  
Long-billed Curlew  
Great Egret  
Great Blue Heron  
Green-backed Heron  
Wood duck  
Snowy Egret  
American White Pelican  
Least Bittern  
Black Crowned Night Heron  
American Bittern  
Fulvous Whistling-duck  
Virginia Rail  
Sora Rail  
Black Tern  
Caspian Tern  
Kern Canyon Slender Salamander  
Tehachapi Slender Salamander  
Relictual Slender Salamander  
California Legless Lizard  
California Horned Lizard  
Southern Rubber Boa  
San Joaquin Coachwhip  
California Glossy Snake  
Southwestern black-headed Snake  
Western Yellow-bellied Racer  
Western Patch-nosed Snake

San Joaquin Bluecurls

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Kern Brook Lamprey  
Kern River Rainbow Trout  
Moestan Blister Beetle  
Morrison's Blister Beetle  
Hopping's Blister Beetle  
Monarch Butterfly  
Kern Shoulderband

This HCP has been written to include a number of species not currently listed pursuant to FESA or CESA. Mitigation and compensation requirements described in this HCP are adequate for all the currently listed species, and will be adequate for any future listing of a covered species. If a covered species is listed in the future, no further land and no additional compensation will be required.

KWBA and the Resource Agencies expect that over the 75-year life of the permits some of the covered species which do not currently have any individuals residing on the Bank may come to occupy the Bank. As KWBA and the Resource Agencies learn about newly-arrived covered species occupying the Bank, and learn what attracts these species to the Bank, KWBA and the Resource Agencies will endeavor to shape adaptive management practices as to improve and expand the desired habitats of the newly-arrived covered species within the Compatible Habitat, Sensitive and Conservation Bank Sectors and on any land within the Bank covered by a permanent conservation easement.

The Project Permit and the Master Permit also constitute Special Purpose Permits under the Migratory Bird Treaty Act, permitting the take of migratory birds (as listed as 50 C.F.R. § 10.13) which have been listed under FESA as a threatened or endangered species and which are also covered species under this HCP. Neither the Project Permit nor the Master Permit allow the take of bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*); however the USFWS has agreed not to recommend that the Department of Justice prosecute any take of bald eagles and golden eagles by KWBA or included parties under the Master Permit, so long as the take occurred incidental to a permitted use by KWBA or the included party, as applicable.

# KERN WATER BANK HABITAT CONSERVATION PLAN

## *B. ESTIMATE OF INCIDENTAL TAKE UNDER PROJECT PERMIT*

### **1. Effects of Proposed Action on Species with Documented Occurrences at the KWB**

While incidental take of covered species is expected to occur during construction, operation and maintenance, through collapsed burrows, being run over, crushed by grading equipment, harassment, habitat loss, drowning, etc., the project will provide a net increase of habitat for the covered species compared to pre-DWR and pre-KWBA purchase conditions. KWBA will be increasing both the amount and the quality of habitat on the bank. The construction of proposed facilities will be phased. If all of the proposed facilities are built 481 acres of habitat will be lost to permanent facilities and 291 acres will be temporarily disturbed for construction of underground pipelines.

Prior to the 1988 when the Department of Water Resources (DWR) purchased the Kern Water Bank project area, most of the property was utilized for intensive agriculture. The remainder of the property was leased for oil recovery facilities and contained 1,515 acres of isolated native plant communities (valley saltbush scrub, great valley mesquite scrub, and valley sacaton grassland), and 1,317 acres of non-native grassland (see Table 3, Habitat Status).

The Kern Water Bank recharge facilities were designed to avoid the majority of existing native plant communities. As a result, virtually all of the remnant saltbush scrub, mesquite savannah and valley sacaton grassland plant communities are included in the sensitive habitat (960 acres), the compatible habitat (240 acres), or the conservation bank (315 acres). Approximately 90% of the non-native grassland plant community is included in the conservation bank.

To increase habitat values on the idle agricultural land, DWR began a tumbleweed control program by planting cover crops of barley and alfalfa. DWR along with the CDFG conducted biological studies from 1990 to 1991 (DWR 1991). The DWR 1991 data shows scattered occurrences of the San Joaquin kit fox (SJKF), Tipton kangaroo rat (TKR), and burrowing owl throughout the idle agricultural lands. Three plant species, the San Joaquin woolly-threads, Hoover's woolly-star and recurved larkspur, were present but were restricted to smaller remnant native plant communities which were located around the oil field facilities. Most of the DWR 1991 documented rare plant populations are included in designated sensitive habitat areas (NE quarter of Section 12, N half of Section 14, S half and NW quarter of Section 36, T30S, R25E, and NW quarter of Section 7, T30S, R26E). Other documented rare plant occurrences were located in designated compatible habitat (NE quarter of Section 13, and SW quarter of Section 25, T30S, R25E). One questionable documented occurrence of Hoover's woolly-star was noted in an area designated for recharge facilities (SE quarter of Section 12, T30S, R25E). A recharge basin was established in this area prior to DWR purchasing the property. One plant species of concern, the slough thistle, was documented on designated conservation bank land (SW quarter of Section 34, T30S, R25E) (DWR 1991).

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The DWR 1991 study also showed few documented occurrences of the blunt-nosed leopard lizard (BNLL). These were restricted to areas of poor soil type associated with very sparse vegetation and areas of open ground. The DWR 1991 study documented occurrences of BNLL are almost exclusively located in areas designated as either sensitive habitat (NW quarter of Section 7, T30S, R26E and SW quarter of Section 36, T30S, R25E), or compatible habitat (S half of Section 6, SW quarter of Section 5, NE quarter of Section 7, NW quarter of Section 8, SE quarter of Section 20, T30S, R25E, and NW quarter of Section 20, T30S, R26E). The San Joaquin antelope squirrel only had one documented occurrence in an area designated as sensitive habitat (E half of Section 36, T30S, R25E).

The DWR study also reported that the Valley elderberry longhorn beetle (VELB) was not found within the Project Permit area and there have been no historic records reported. Elderberry bushes, their only habitat, were not found.

Nevertheless the DWR 1991 study did prove that certain animal covered species have spread to and colonized some of the fallowed areas. Such habitat utilization by covered species is expected to continue in the compatible habitat areas.

Wildlife surveys conducted for the interim recharge project found 69 potential kit dens but monitoring of these sites showed no signs of activity and they were closed prior to 1995 construction. Approximately 300 potential Tipton kangaroo rat (TKR) burrows were located throughout the interim projects facilities. However, no actual trapping was done for the TKR. No blunt-nosed leopard lizards (BNLL) were noted during the interim project monitoring program. (Thomas Reid Assocs., Interim Water Recharge Project Biological Monitoring Report for the Period April 1995-March 31, 1996.)

Night spotlight wildlife surveys were conducted on a 55 mile route within the boundaries of the Kern Water Bank on June 18, 19, and 27, and July 3, 7, and 10, 1996. Also set up were twenty-five scent stations throughout the water bank during 7 working days in August 1996. San Joaquin kit fox prints were noted at three of the scent stations (2 in the south half of Section 20 of T30S, R25E, and 1 in the south half of Section 19, T30S, R26E). The scent stations also revealed sign of 6 coyotes and 3 striped skunks. During the spotlighting, one SJKF was sighted in the southeast quarter section of Section 12, T30S, R25E. Other species sighted were: 67 barn owls, 18 burrowing owls, 9 coyotes, and 6 striped skunk.

In 1996, two permanent TKR trapping grids were established on the Kern Water Bank. The Strand Grid is located in the northwest 1/4 of Section 7, Township 30S, Range 26 E. The Taft Highway Grid is located in the northeast 1/4 of Section 36, T30S, R25E. Both of these locations are within Sensitive Habitat, but the Strand Grid is in close proximity to recharge basins, canals and levees. In 1996, Vanherweg documented five TKR at the Strand Grid and two TKR at the Taft Highway Grid.

The operation of the recharge facilities will be cyclical. Depending on the availability of water and the basin flooding frequency, some basins may lie unused for periods of one to several years. Based on historic hydrology and the projected



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requirements of KWBA's participants (see Map 5, Recharge Frequency Plan) a prediction of recharge basin utilization shows that a large percentage of the time areas designated for recharge basins will be available for upland habitat. During the time these basins are idle, they may become colonized by the covered species resulting in potential recurring take of individuals once flooding begins again.

The potential impact on these transient colonies and any individuals disturbed by construction will be mitigated by preservation and management of the adjacent compatible, sensitive and conservation bank habitat as refugium for source populations of covered species. To minimize loss of individuals from flooding, to the extent practical, the basins will be filled slowly, so that any animals using the idle basins can escape to higher ground.

Table 3 shows the habitat status of land proposed by the project.

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**TABLE 3, HABITAT STATUS**

Pre-Project	acres	1991 DWR	acres	KWB HCP	acre
<i>Upland Habitat</i>		<i>Upland Habitat</i>		<i>Upland Habitat</i>	
Sensitive Plants (1)	1,515	Sensitive Plants (1)	1,515	Compatible Habitat	5,59
Non-native Grassland	1,317	Non-native Grassland	1,317	(Sensitive Plants - 240)	
		Fallow - Occupied	6,880	(Fallow - 5,352)	
				Sensitive Habitat (2)	96
				(Sensitive Plants - 960)	
				DWR Mitigation	53
				(Fallow - 530)	
				Conservation bank (3)	2,77
				(Sensitive Plants - 315)	
				(Non-native grassland -1,177)	
				(Fallow - 1,285)	
				<i>Intermittent Wetland Habitat (4)</i>	
				Recharge Basins	5,90
				(Fallow - 5,900)	
<i>Non-Habitat</i>		<i>Non-Habitat</i>		<i>Non-Habitat</i>	
Farmland/Disturbed	17,068	Fallow - Not Occupied	10,188	Other Facilities	48
				(Fallow - 481)	
				Commercial Development (3)	49
				(Non-native grassland - 140)	
				(Fallow - 350)	
				Farming	3,17
				(Fallow - 3,170)	
<b>Total</b>	<b>19,900</b>		<b>19,900</b>		<b>19,900</b>

(1) Gross area that contains known populations of covered plant species.

(2) Contains all known populations of San Joaquin woolly-threads on the KWB.

(3) Assumes KWBA sells or develops 490 acres. Can also be sold as mitigation credits.

(4) Habitat potentially suitable for species such as western pond turtle, Buena Vista lake shrew.

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## 2. Effects of Proposed Action on Other Covered Species

As noted in Section III. A. above, most of the covered species do not presently occur at the Kern Water Bank, but have the potential to move on to Kern Water Bank lands in the future, either naturally or artificially. The following describes how each of the species might use the Kern Water Bank in the future. Table 4 provides a summary of project impacts on each of the Group 1 covered species. The impacts of the project on Group 2 species are described in Appendix B.

### a. Species Which Have a Reasonable Chance of Becoming Permanently Established at the KWB on Their Own Due to Proximity of Closest Populations or High Mobility, or Which May Be Introduced by USFWS or CDFG to Saltbush or Alkali Sink Habitats

Giant kangaroo rat -- is found at Coles Levee Ecosystem Preserve just to the west and southwest of the KWB.

Le Conte's Thrasher -- is known from Taft/Maricopa areas, is highly mobile, and thus may use enhanced alkali scrub habitat in the future

Kern Mallow -- is found at Lokern Natural Area just to the northwest of the KWB

Heart-leaved saltbush (*A. cordulata*) -- is found at Lokern Natural Area just to the northwest of the KWB and may become established in saltbush scrub habitat

Lesser Saltbush (*A. miniscula*) -- could be introduced to saltbush scrub plant communities

California Jewelflower -- can be introduced to alkali flats

Kern Tarplant -- can be introduced in restored grasslands

Alkali Mariposa Lily -- can be introduced to alkali flats, found just south of the KWB.

Western Pond Turtle -- is mobile and may become established in the recharge basins

### b. Species with Existing Limited Populations at the KWB Which May Expand (Either Naturally And/or Artificially)

Blunt-nosed Leopard Lizard	San Joaquin Antelope Squirrel	American Badger
Hoover's Woolly-star	San Joaquin Woolly-threads	Tipton Kangaroo Rat
Slough Thistle	Recurved Larkspur	Burrowing Owl
San Joaquin Kit Fox	Loggerhead Shrike	White-tailed Kite

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### c. Species Which May Be Introduced to Ponds or Other Wetlands in the KWB by CDFG or USFWS

Buena Vista Lake Shrew	Western Spadefoot Toad
Vernal Pool Fairy Shrimp	Conservancy Fairy Shrimp
Vernal Pool Tadpole Shrimp	Longhorn Fairy Shrimp
Valley Elderberry Longhorn Beetle	Giant Garter Snake

Introduction of these species would be done under a cooperative agreement with USFWS, CDFG and the KWBA.

### d. Migratory Bird Species Which May Use the Kern Water Bank for Winter Refuge or as Foraging Habitat

Aleutian Canada Goose	Ferruginous Hawk	American Peregrine Falcon
Swainson's Hawk	Western Snowy Plover	Tricolored Blackbird
Greater Sandhill Crane	Mountain Plover	White-faced Ibis

Wetland habitat may be used by these species as it is available. Since these species are highly mobile, they can leave the area when the habitat becomes unsuitable without impact.

### e. Species Not Likely to Become Established at the Kern Water Bank, But May in Unique Circumstances

Bakersfield Cactus -- no suitable habitat

Greater western mastiff bat -- no suitable nesting habitat

Pacific Western big-eared bat -- no suitable nesting habitat

Hispid's Birds Beak -- no suitable habitat, prefers saline marshes

Comanche Point Layia -- out of range, foothills species

Bakersfield Saltbush -- there is taxonomic uncertainty about this species; may already be extinct

Lost Hills Saltbush -- KWB out of known range and taxonomic uncertainties exist

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**TABLE 4  
SUMMARY OF PROJECT IMPACTS ON COVERED SPECIES**

Scientific Name	Common Name	Project Impact
<b>Listed Plants</b>		
<i>Caulanthus californicus</i>	California jewelflower (3) VSG	Negligible or Beneficial. Deliberate introductions would be restricted to habitat preserves.
<i>Eremalche parryi ssp. kernensis</i>	Kern mallow (2,3) VSS, VSG, GVMS	
<i>Eriastrum hooveri</i>	Hoover's eriastrum (1) VSS, VSG	Negligible. Project avoids sensitive habitat areas where plants occur.
<i>Lembertia congdonii</i>	San Joaquin woolly-threads (1) VSS, VSG, NNG	Negligible. Project avoids sensitive habitat areas where plants occur.
<i>Atriplex tularensis</i>	Bakersfield saltbush VSS, GVMS	None. Species not likely to ever occur in project area
<i>Opuntia basilaris var. treleasei</i>	Bakersfield cactus MFS, NNG	
<b>Birds</b>		
<i>Buteo swainsoni</i>	Swainson's hawk (2) ALL	Negligible. High mobility allows easy escape from project related impacts. KWB lacks suitable nesting habitat for these species, or species use restricted to overwintering habitat.
<i>Elanus caeruleus</i>	White-tailed kite (2) ALL	
<i>Grus canadensis tubida</i>	Greater sandhill crane (2) Wetlands	
<i>Branta canadensis leucopareia</i>	Aleutian Canada goose (2) Wetlands	
<i>Falco peregrinus anatum</i>	American peregrine falcon (2) ALL	

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<b>Invertebrates</b>		
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp (3) Wetlands	None. Deliberate introduction would be confined to permanently managed wetlands established under cooperative agreement with CDFG, USFWS, and KWBA or other means.
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp (3) Wetlands	
<i>Branchinecta longiantenna</i>	Longhorn fairy shrimp (3) Wetlands	
<i>Lepidurus packardi</i>	Vernal pool tadpole shrimp (3) Wetlands	
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle (3) MFS, GVCRF	Negligible. Future maintenance activities can avoid removal of occupied elderberry bushes.
<b>Reptiles</b>		
<i>Gambelia sila</i>	Blunt-nosed leopard lizard (1) VSS, VSG, GVMS	Negligible. Populations are restricted to habitat preserves.
<i>Thamnophis gigas</i>	Giant garter snake (3) Wetlands	Negligible or Beneficial. Deliberate introduction would be confined to permanently managed wetland established under cooperative agreement with CDFG, USFWS, and KWBA or other means.
<b>Mammals</b>		
<i>Dipodomys ingens</i>	Giant kangaroo rat (3) VSS, VSG, NNG, GVMS	Negligible or Beneficial. Species would benefit from establishment of habitat preserves. If populations expand onto recharge pond areas, loss of individuals may occur from levee and canal maintenance activities, flooding, and project related traffic.
<i>Dipodomys nitratooides nitratooides</i>	Tipton kangaroo rat (1) VSS, VSG, NNG, GVMS	Loss of individuals could result from project grading, flooding, facilities construction, maintenance of levees and canals, and project related traffic. Habitat preserves will benefit species.

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<i>Vulpes macrotis mutica</i>	San Joaquin kit fox (1) ALL	
<i>Ammospermophilus nelsoni</i>	San Joaquin antelope squirrel (1) VSS, VSG, NNG	Negligible. Existing populations restricted to habitat preserves. If populations expand into recharge pond areas, loss of individuals may occur from levee and canal maintenance activities, flooding, and project related traffic
<b>Other Species of Concern</b>		
<b>Plants</b>		
<i>Atriplex cordulata</i>	Heart-leaved saltbush (2,3) VSS, GVMS	Negligible or Beneficial. Deliberate introductions of any of these species would occur in permanent habitat preserves only.
<i>Atriplex miniscula</i>	Lesser saltbush (2,3) VSS, GVMS	
<i>Atriplex vallicola</i>	Lost Hills saltbush VSS, GVMS	
<i>Calochortus striatus</i>	Alkali mariposa lily (2,3) VSS	
<i>Cirsium crassicaule</i>	Slough thistle (1,3) MFS, GVCRF	
<i>Cordylanthus mollis ssp. hispidus</i>	Hispid bird's-beak Saline Marshes and Flats	
<i>Delphinium recurvatum</i>	Recurved larkspur (1) VSS, VSG, GVMS	
<i>Hemizonia pallidus</i>	Kern tarplant (2,3) VSS, VSG, NNG	
<i>Layia leucopappa</i>	Comanche Point layia VSG	

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<b>Amphibian</b>		
<i>Scaphiopus hammondi</i>	Western spadefoot toad (1.3) VSS, VSG, NNG, MFS	Negligible or Beneficial. Deliberate introduction would be confined to permanently managed wetlands established under cooperative agreement with CDFG, USFWS, and KWBA or other means.
<b>Reptiles</b>		
<i>Clemmys marmorata marmorata</i> and/or <i>C. m. pallida</i>	Western pond turtle (2,3) Wetlands	Negligible or Beneficial. Deliberate introduction would be confined to permanently managed wetlands established under cooperative agreement with CDFG, USFWS, and KWBA or other means.
<b>Birds</b>		
<i>Athene cunicularia</i>	Burrowing owl (1) VSG, NNG	Loss of individuals could result from project grading, flooding, facilities construction, maintenance of levees and canals, and project related traffic. Habitat preserves will benefit this species.
<i>Agelaius tricolor</i>	Tricolored blackbird (2) Wetlands, NNG	Negligible. High mobility of these species allows easy escape from project related impacts.
<i>Buteo regalis</i>	Ferruginous hawk (2) ALL	
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover (2) Wetlands	
<i>Charadrius montanus</i>	Mountain plover (2) VSG, NNG	
<i>Lanius ludovicianus</i>	Loggerhead shrike (1,2) GVCRF	
<i>Plegadis chihi</i>	White-faced ibis (2) Wetlands	
<i>Toxostoma lecontei</i>	Le Conte's thrasher (2) Saltbush Scrub	





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### 3. **Physical and Biological Features Essential to the Conservation of the Covered Species and how Critical Habitat Requirements are Met under the HCP**

The species covered in the HCP are generally considered in the group of sensitive San Joaquin Valley species. The range of most of the sensitive plants and animals in the San Joaquin Valley are limited to the valley floor and low elevation foothills from just north of Stockton south to the southwestern boundary of Kern County. Most of the plants and animals are associated with remnant native plant communities such as valley grassland, saltbush scrub, tule marshes and freshwater wetlands, vernal pools, and riparian forests. A few species, such as the San Joaquin kit fox, have adapted to survive on land that has been used for agriculture and oil development.

The covered animal species which occur on the Kern Water Bank associated with upland habitat are dependent upon having suitable habitat for foraging, reproduction, and cover. The smaller animals, such as the Tipton kangaroo rat and blunt-nosed leopard lizard, require specialized habitat that has areas of open bare ground, and include the valley sacaton grassland, valley saltbush scrub, and great valley mesquite scrub communities. The San Joaquin kit fox requires larger areas of undeveloped land in which to find suitable prey species, such as rabbits, squirrels, rats, and mice. The kit fox is found in the above-mentioned habitats as well as non-native grassland and fallow agricultural lands. In addition, all of the species require corridors that provide connectivity between and among suitable habitat. The covered plant species which occur on the KWB are almost exclusively associated with remnant native scrub habitats found in the sensitive habitat, including the valley sacaton grassland, valley saltbush scrub, and great valley mesquite scrub. Habitat associations for each of the covered species are included in the species tables found in Appendix B.

“Critical Habitat” for a threatened or endangered species is defined in section 3(5) of the FESA as:

- (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of [16 U.S.C.], on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and
- (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of [16 U.S.C.], upon a determination by the Secretary that such areas are essential for the conservation of the species.

When the Secretary determines what areas should be designated critical habitat, he must consider those physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection. Such requirements include, but are not limited to:

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- Space for individual and population growth, and for normal behavior;
- Food, water, air, light, minerals, or other nutritional or physiological requirements;
- Cover or shelter;
- Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
- Generally, habitats that are protected from disturbances or are representative of the historic geographical or ecological distributions of the species.

Additionally, when considering the designation of critical habitat, the regulations require the Secretary to focus on the principal biological or physical constituent elements within the defined area that are essential to the conservation of the species. These include, but are not limited to:

- Roost sites, nesting grounds, spawning sites, feeding sites, seasonal wetlands or dry land, water quality or quantity, host species or plant pollinator, geological formation, vegetation type, tide, and/or specific soil types.

Four of the covered species have critical habitat designated: the American peregrine falcon, California condor, Least Bell's vireo, and the valley elderberry longhorn beetle, but the critical habitat for these species is in areas outside the Kern Water Bank. The HCP provides for the preservation of virtually all remnant native plant communities that presently occur on the site and provides for protection and management of these areas throughout the life of the permit, and in some instances for protection in perpetuity. These areas support the greatest diversity of native plant and animals on the Kern Water Bank. It is essential to the survival of these species that the habitat that supports them are protected from disturbance and actively managed to prevent the invasion of exotic pest plants as is indicated in the Vegetation Management Plan (Appendix B).

The HCP also provides long-term protection, management, and enhancement of previously farmed lands that are known to support species that have adapted to living in this environment. The preservation of these areas, identified as compatible habitat, assures that the mobile species have adequate foraging habitat and cover to provide for the long-term conservation of the species. The HCP also provides connectivity to adjacent habitat preserve, such as the Coles Levee Ecosystem Preserve and the Tule Elk Preserve.

The Adaptive Management Program described in the HCP is geared towards the long-term conservation of the covered species. The program will provide for the:

- protection of sensitive and compatible habitat areas;
- management of vegetation to increase species utilization; and
- periodic assessment of species utilization to determine the effects of management activities.

In addition, the HCP includes measures to minimize impacts on covered species during construction, operation and maintenance of the project. The measures include the

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use of a qualified biologist to monitor all ground-disturbing activities during construction, delineation of disturbance areas using signs and/or fences, and notification of the USFWS and CDFG prior to ground disturbance to allow salvage of covered plants and/or animals. Additional measures are described in Section IV.A. of the HCP.

In the future, if critical habitat is defined for any of the covered species, it may include the managed native habitat that is found at the Kern Water Bank. These areas contain valuable biological and physical constituent elements that may be essential to the conservation of the San Joaquin woolly-threads, Hoover's woolly-star, and blunt-nosed leopard lizard and other sensitive species. These species survive in remnant valley saltbush scrub habitat that has sandy-loam soils, and areas of open ground with scattered native shrubs. The San Joaquin kit fox, Tipton kangaroo rat, and San Joaquin antelope squirrel also occupy native remnant habitats. However, they have also adapted to using disturbed habitats such as fallow agricultural fields, canal and pond levees, and other non-native habitats.

### **4. Kern Water Bank Role in Species Recovery**

Ultimately, the recovery of covered species found at the Kern Water Bank depends on conservation of populations and suitable habitat throughout each species range. The San Joaquin kit fox, Tipton kangaroo rat, and blunt-nosed leopard lizard occur generally in the San Joaquin Valley and are the subject of numerous conservation efforts taking place which will result in the preservation of large habitat reserves for these species. There are several large preserves that have already been established including: the Coles Levee Ecosystem Preserve, Semitropic Preserve, Lokern Natural Area, and the Tule Elk State Reserve, among others. Participants of the Kern County Valley Floor HCP will contribute to the establishment of new preserves or the expansion of existing preserves. The Kern Water Bank will contribute additional significant acreage of managed upland habitat to the San Joaquin Valley ecosystem.

By protecting and managing suitable habitat for the covered species at the Kern Water Bank, the KWBA is contributing to the recovery effort. In addition, by creating new wetland habitat in the Valley, the KWBA is providing benefits to waterbirds and other wetland associated species. Through the review and consultation process of the HCP, the adaptive management approach will provide the Resource Agencies the ability to adapt management activities of the Kern Water Bank to meet certain species recovery objectives as they are developed.

### **C. ESTIMATE OF TAKE UNDER MASTER PERMIT**

The conservation bank comprises 3,267 acres. The Master Permit Credit Area as a whole is approximately 1,582,080 acres. Using USFWS typical mitigation ratios for compensable habitat within the Master Permit Credit Area, use of the conservation bank could result in the following impacts:

For projects with temporary disturbance, such as oil and gas projects, the USFWS now typically requires a 1.1:1 replacement ratio (habitat replaced to habitat lost). Thus, if

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all 3,267 acres of the Bank were purchased to mitigate projects with temporary disturbance then as much as 2,940 acres of temporary disturbance could occur within the Master Permit Credit Area.

For permanent mitigation of compensable habitat the USFWS now typically requires a 3:1 replacement ratio. Thus the 3,267 acres could accommodate up to 1,089 acres of permanent disturbance in the Master Permit Credit Area. However, it is possible that a combination of both permanent and temporary disturbance would take place, such that anywhere between 1,000 to 3,000 acres could be disturbed in the Master Permit Credit Area through the 75 year life of the Master Permit. Thus, the total percentage of land which could be disturbed in the Master Permit Credit Area is between 0.06% and 0.19%. Less than 150,000 acres of natural habitat exist in the Central Valley, a small portion of which is included in the Master Permit Credit Area. (P. Cross, pers. comm.)

If in the future the conservation bank is expanded the resulting take may occur: for every additional 110 acres added to the Bank, a corresponding loss of 36 to 100 acres of habitat in the Master Permit Credit Area could take place depending on whether the habitat loss was permanent (3:1) or temporary (1.1:1).

Impacts on species will depend on the loss of habitat resulting from each eligible project and what measures, if any, are required to minimize on-site impacts (such as allowing animals to escape, or through trapping and relocation). Since CDFG and USFWS will have the absolute authority to determine whether a project may use conservation credits, the agencies will be able to impose the appropriate on-site avoidance and minimization obligations they feel are appropriate, and that KWBA need not control or enforce.

Implementation of the Master Permits/Authorizations could result in loss of covered species in the Master Permit Credit Area through ground disturbance to construct buildings, roads, pipelines, and other facilities. For the Tipton kangaroo rat, San Joaquin kit fox, and San Joaquin antelope squirrel, ground disturbance could cause take through collapsing of burrows, crushing by grading equipment, and harassment.

The benefit of having third parties mitigate through use of conservation bank lands is that it helps in the establishment of a large habitat preserve, rather than small isolated habitats. USFWS believes that a single large habitat preserve has greater habitat value than a number of smaller isolated habitats adding up to the same total size. For example, the home range of the San Joaquin kit fox is believed generally to be no less than one square mile. (P. Cross, pers. comm.) The conservation bank is in close proximity to the Lokern Area and Coles Levee Ecosystem Preserve, which is close to the Elk Hills Petroleum Preserve. HCPs in the planning process include several in the Lokern Area, which should result in the preservation of significant amounts of habitat in this area. It also simplifies the permitting process for the USFWS and the Landowner/Applicant.

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## IV. MEASURES INTENDED TO MINIMIZE AND MITIGATE THE TAKE OF COVERED SPECIES

The Kern Water Bank Authority is the Plan Operator and will be responsible for establishing and maintaining habitat preserves, carrying out site specific mitigation measures, and for monitoring and reporting results of management activities to the CDFG and USFWS.

The following Sections of the HCP outline the measures to minimize and mitigate impacts of the project. In addition to these, specific management plans have been developed for habitat restoration and exotic pest plant control (Appendix C) and waterfowl usage of recharge basins (Appendix D). In conjunction with this HCP, an Implementation Agreement has also been prepared as a separate document.

### A. *MINIMIZATION OF IMPACTS*

#### 1. **Biological Monitor**

A qualified biologist shall monitor all major ground-disturbing activities during construction and will oversee measures undertaken to reduce take of covered species.

#### 2. **Delineation of Disturbance Areas**

During construction, KWBA shall clearly delineate disturbance area boundaries by stakes, flagging, or by reference to terrain features, as directed by the CDFG and USFWS, to minimize degradation or loss of adjacent wildlife habitats during operation.

All equipment storage and parking during site development and operation shall be confined to the construction site or to previously disturbed off-site areas that are not habitat for covered species.

During construction, KWBA shall post signs and/or place fencing around construction sites to restrict access of vehicles and equipment unrelated to site operations.

#### 3. **Allow Time and Access to USFWS and/or CDFG or their Designees for Salvage or Relocation**

The KWBA will allow time and access to the USFWS and/or CDFG, or their designees, to relocate listed species at the Agencies' expense. The salvage/relocation shall take place in construction areas prior to disturbance of areas that have been identified by the Agencies as having known populations of the animals or plants they wish to salvage or relocate.

At least 20 working days prior to initiating ground disturbance for project facilities in designated salvage/relocation areas, KWBA shall notify the Fresno Field Office of CDFG and the Sacramento Field Office of the USFWS of its intention to begin

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construction activities at a specific location and on a specific date. The Agencies will have 10 working days to notify the KWBA of their intention to salvage or relocate animals or plants in the construction area. If KWBA is notified, it will delay planned construction activities up to an additional 10 working days to allow the salvage/relocation to take place.

### **4. Project Representatives**

KWBA shall designate a specific individual as a contact representative between KWBA, USFWS, and the CDFG to oversee compliance with protection measures detailed in this Chapter. KWBA shall provide written notification of the contact representative to the CDFG and USFWS within 30 days of permit/authorization issuance. Written notification shall also be provided by KWBA to the CDFG and USFWS in the event that the designee is changed.

### **5. Employee Orientation**

An employee orientation program for construction, operation and maintenance crews who will work on-site shall be conducted and shall consist of a brief consultation in which persons knowledgeable in endangered species biology and legislative protection explain endangered species concerns. The program shall include a discussion of the biology of the species covered by this HCP, the habitat needs of these species, their status under the Federal and California Endangered Species Acts, and measures being taken for the protection of these species and their habitats as a part of the project. The orientation program will be conducted on an as-needed basis prior to any new employees commencing work on the KWB. Every two years and at the beginning of construction for the Supply/Recovery canal, a refresher course will be conducted for employees previously trained. A fact sheet conveying this information shall also be prepared for distribution to all employees. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be filed at KWBA's offices and shall be accessible by the CDFG and USFWS.

### **6. Mitigation Measures For Construction, Operation and Maintenance**

Before the Supply/Recovery Canal Project is constructed, KWBA shall conduct a limited SJKF survey to identify any kit fox dens in the construction zone. If any kit fox dens or other individuals or populations of covered species are found, KWBA shall notify USFWS and/or CDFG and allow them access to the area for relocation or salvage.

All construction pipes, culverts, or similar structures with a diameter of three inches or greater that are stored at a construction site on the KWB for one or more overnight periods shall be thoroughly inspected for trapped kit foxes and other animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight shall be capped. If during construction a kit fox or other

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animal is discovered inside a pipe, that section of pipe will not be moved or, if necessary, will be moved only once to remove it from the path of construction activity until the animal has escaped.

Concrete lined canals will have a side slope of 1.5 to 1 or less and the sides will have a concrete finish which will assist in the escape of animals. If canals are determined by CDFG or USFWS to be substantial impediments to movement of animal covered species, plank or pipe crossings will be provided across concrete canals in areas identified as having high animal activity or particular significance to management of the target species. Other solutions, such as variations in crossing or canal designs, shall be evaluated and implemented as necessary as part of annual management planning.

All food-related trash items such as wrappers, cans, bottles, and food scraps generated both during construction and during subsequent facility operation shall be disposed of in closed containers and shall be regularly removed from the site. Food items may attract kit foxes onto a project site, consequently exposing such animals to increased risk of injury or mortality.

To prevent harassment or mortality of kit foxes or destruction of kit fox dens or predation on this species, no domestic dogs or cats, other than working dogs (such as hunting, herding, or guide dogs) under direct control of owners, shall be permitted on-site.

Use of rodenticides and herbicides on the site shall be permitted in accordance with the Vegetation Management Plan, which incorporates by reference the Interim Measures for Use of Rodenticides in Kern County, and which will incorporate by reference any other applicable laws, rules and regulations regarding the use of pesticides as they take effect.

### **7. Notification Regarding Dead, Injured or Entrapped Animals**

Any employee who kills or injures a San Joaquin kit fox, blunt-nosed leopard lizard, Tipton kangaroo rat, San Joaquin antelope squirrel, or other listed species, or who finds any such animal either dead, injured, or entrapped shall report the incident immediately to KWBA's representative who shall, in turn, report the incident or finding to the USFWS and the CDFG. In the event that such observations are of entrapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape unimpeded. In the event that such observations are of injured or dead animals, KWBA shall immediately notify the USFWS and the CDFG by telephone or other expedient means. KWBA shall then provide formal notification to USFWS, and the CDFG, in writing, within three working days of the finding of any such animal(s). Written notification shall include the date, time, location, and circumstances of the incident.

The USFWS contact for this information shall be the Chief, Endangered Species Division, Sacramento Field Office. The CDFG contact shall be the Environmental Services Supervisor at the San Joaquin Valley-Southern Sierra Region Headquarters.



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The USFWS or CDFG will be notified within three days if any listed, proposed, candidate, or other species covered by this plan is found dead or injured.

### **8. Traffic Control**

KWBA's project representative or agent shall establish and issue traffic restraints and signs to minimize temporary disturbances. All construction related vehicle traffic shall be restricted to established roads, construction areas, storage areas, and staging and parking areas. Project related vehicles shall observe a 25 MPH speed limit in all project areas except on county roads and state and Federal highways.

### **9. Take Avoidance Protocol for Fully-Protected Species**

Existing data on the blunt-nosed leopard lizard (BNLL) at the Kern Water Bank indicates that populations occur within habitat set asides (either sensitive, compatible, or conservation bank habitat). Thus the likelihood of take from project construction, operation, and maintenance is negligible. However, in the future adaptive management measures may expand to areas of suitable habitat.

Until such time that the KWBA obtains appropriate authorization for take of the State designated Fully Protected blunt-nosed leopard lizard by the Fish and Game Commission, the following take avoidance protocol shall apply in any areas that contain suitable habitat of the BNLL:

- 1) A qualified biologist shall survey any areas proposed for project related disturbance that contain suitable habitat for the blunt-nosed leopard lizard to determine the likelihood of presence. Suitable habitat consists of valley and foothill grasslands, saltbush scrub land, iodine bush grassland, and alkali flats.
- 2) If BNLLs are found to occur in areas proposed for project facilities construction or maintenance, consideration of avoidance should take place first. If avoidance is not practicable, then the BNLL will be trapped and relocated by qualified persons having all appropriate permits prior to disturbance at KWBA's expense in accordance with the applicable annual management plan. This procedure should avoid any violation of state law.

Three other species which may be found on the Kern Water Bank are also State designated Fully Protected species: American peregrine falcon, Greater sandhill crane, and White-tailed kite. The likelihood of the take of any of these species from project construction, operation, and maintenance is negligible due to their mobility and preferred habitats. However, to avoid any take of these species, the same take avoidance protocol as set out for the BNLL shall apply to each of these three species.

### ***B. MITIGATION OF IMPACTS***

The emphasis of the HCP is on the management of upland compatible and sensitive habitat complexes around recharge basins to benefit the San Joaquin kit fox,

## **KERN WATER BANK HABITAT CONSERVATION PLAN**

Tipton kangaroo rat and blunt-nosed leopard lizard, and to preserve and manage sensitive habitat for the San Joaquin woolly-threads and Hoover's woolly-star. Management of these habitats will also benefit other listed and sensitive species.

### **1. Adaptive Management & Monitoring Parameters**

Upon approval of the HCP the KWBA will implement a vegetation management demonstration program (see Appendix C). The demonstration program will coincide with Kern Water Bank operational activities for a period of five years. The program seeks to increase the level of understanding on the effects of the prescribed management and restoration programs. There are four components to the demonstration study: prescribed burning, grazing, mowing and habitat restoration.

The success of the prescribed burn demonstration will be based on whether: 1) there has been a reduction in annual grass and herbaceous weed composition; 2) there has been good recruitment of native species; 3) habitat has improved for target species; and 4) there has been an increase in target species utilization.

The success of the grazing study will be based on whether: 1) there has been a reduction of annual weed and grass cover on recharge basins, levees, and canals; 2) there has been a trend toward the increase of native plant cover and decrease of exotic pest plants in recharge basins and levees; 3) there has been an increase in the germination and survival rate of seeded native species on erosive, disturbed soils; 4) there has been a reduction of seed production in Russian thistle; and 5) there has been an increase in target species utilization.

Success of the mowing study will be determined by assessing whether there is a measurable trend toward the increase of the percent cover of native vs. exotic vegetation in mowed areas; and whether there has been an increase in target species utilization.

For the habitat restoration study, success will be measured by assessing whether there has been a trend toward an increase of native species and decrease in exotic species, whether there has been any natural native plant species re-generation and/or recruitment; and whether there has been an increase in target species utilization.

Upon completion of the five-year study program, a final report will be prepared which describes the overall results of the study program, and identifies specific management activities for specific areas of the Kern Water Bank. In the future, the methods and areas treated each year will be described in the annual management plan. Continued effectiveness of the large-scale management actions will be evaluated similarly to the demonstration programs.

Operation and maintenance of the Kern Water Bank is not expected to impact adversely the blunt-nosed leopard lizard, San Joaquin antelope squirrel, Hoover's woolly-star, and San Joaquin woolly-threads as these species have been documented to occur only in compatible and sensitive habitat.

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The KWBA will arrange for appropriately-timed rare plant surveys to be carried out in the sensitive habitat areas at least every other year.

The San Joaquin kit fox and Tipton kangaroo rat are more widely distributed throughout the Kern Water Bank and may occur in and around the water recharge basins, canals, levees, and other facilities as well as in compatible, sensitive, and conservation bank lands. Thus these two species will be the subject of KWBA annual species monitoring activities.

An effective method for surveying SJKF and other nocturnal animals is by nighttime spotlighting. Future spotlight surveys will be compared to the 1996 spotlight survey at the Kern Water Bank. Each year, during the appropriate season, the KWBA will arrange for a SJKF spotlighting survey on the Kern Water Bank. The person or persons conducting the spotlighting survey will consult with the Fresno Office of CDFG to determine the timing and specific locations of the annual spotlighting program. The final program will be approved by the KWBA. A goal of the spotlighting survey will also be to document the presence of coyotes as well as other additional predators such as the red fox which might move onto the property.

The Tipton kangaroo rat will also be subject to annual monitoring. The emphasis of the monitoring will be to assess presence or absence in up to three known population areas and to assess whether the population in these areas is declining or increasing. In 1996, two permanent TKR trapping grids were established on the Kern Water Bank. The Strand Grid is located in the northwest quarter of Section 7, Township 30S, Range 26E. The Taft Highway Grid is located in the northeast quarter of Section 36, Township 30S, Range 25E. Both of these locations are within Sensitive Habitat, but the Strand Grid is in close proximity to recharge basins, canals and levees. These locations will continue to be trapped once a year, unless another suitable location or trapping period is determined through consultation with USFWS and CDFG. Comparisons of relative utilization in these areas will be provided on a year to year basis.

BNLL will be monitored on the DWR Mitigation Parcel in accordance with the obligations of DWR regarding such activities assumed by KWBA when the Kern Water Bank was transferred to KWBA.

The KWBA will also permit access to USFWS or CDFG authorized biologists for monitoring, research and management of covered species or other species, provided such actions are scientifically valid, in compliance with the purpose and terms of the HCP, and do not interfere with the normal operations of the Kern Water Bank. KWBA may review the specific protocols of any proposed study, and may establish reasonable restrictions on timing and access for such studies. The appropriate resource agency shall confer with the KWBA regarding the scope and protocol of any studies that may affect interpretation of KWBA compliance with the HCP, or affect Kern Water Bank operations.

Land management activities will also include cooperation with adjacent land owners to allow coordination of land-use activities. Monitoring will be implemented to assess the effectiveness of habitat improvement measures to maintain quality habitat.

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Habitats and populations of listed species will be monitored at a level sufficient to generally evaluate robustness of the populations and detect potentially adverse conditions on the KWB.

The project site shall be monitored for presence of predators that out-compete and degrade habitat of the San Joaquin kit fox. Sightings of predators will be reported to CDFG, and CDFG or other qualified agencies will be allowed access to the property for predator control efforts. Predator management will be done in accordance with a predator control plan approved by the Resource Agencies. Habitat management to control conditions contributing to high populations of red fox or other significant predators and other control efforts shall be evaluated as needed as part of the annual management plan.

Habitat within the KWB has been separated into four categories as follows:

Sensitive Habitat. These areas will be protected from disturbance and managed to provide long-term habitat value for these species. Management activities for these areas will include attempting to control the spread of invasive exotic plant species and maintaining the existing habitat for the native plant communities. Access will be allowed to biologists who are sponsored by either CDFG or USFWS to monitor, manage, or conduct research on populations of covered species. In addition, fencing or signing to protect particularly sensitive resources will be established in these areas.

Compatible Habitat. The compatible habitat vegetation management will focus on habitat management for covered species. Preferred habitats consist of alkaline sink communities, with characteristic shrub vegetation. Common native plant species associated with dry alkaline sinks such as iodine bush (*Allenrolfea occidentalis*) and saltbush (*Atriplex spinifera*, *A. lentiformis*, *A. phyllostegia*) will be encouraged. Test plots will be observed to determine vegetation response to selected management programs such as mowing, grazing, and burning.

Management activities will be aimed at protecting sensitive habitat, and improving habitat quality through restoration or vegetation management. The vegetation management plan contained in Appendix C provides details of activities, as well as success criteria and monitoring protocol.

Compatible habitat may be used for low intensity agricultural (grazing) or recreational uses such as biking, hiking, and nature watching with USFWS and CDFG approval.

Wetlands Habitat. The water recharge process has resulted in the formation of intermittent wetlands. Wetland vegetation, such as willow trees and sedges, are beginning to appear along the basin edges. As the basins continue to hold water they will likely support additional wetland species, and as they go dry wetland resources may disappear or go dormant as has historically happened. Intermittent wetlands will be managed for multiple species/resource uses (e.g. duck hunting) as long as such uses are fully compatible with covered species habitat, and meet the intended goals of the water banking project. Adaptive management will be guided by annual flooding prediction

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models prepared by the KWBA. A hierarchy of basin filling will be established so when water is recharged, specific basin systems will be utilized frequently, while others may only be filled on an occasional basis. In this way wetland habitat may be sustained and provide long-term benefits to wetland species.

As water is available recharge basins will be managed to provide fresh marsh habitat to benefit wetland species. Fresh water marsh habitat is best developed in areas containing nutrient-rich saturated soils in locations with slow-moving water. Marsh species are rapid colonizers and respond to seasonal inundation, and are often associated with riparian woodlands. The City of Bakersfield's 2800 acre recharge site is a prime example of mature marsh and riparian forest habitat. Typical plants of the fresh water marsh include tule (*Scirpus acutus*), willow (*Salix hinsiana*), cattail (*Typha latifolia*), spikerush (*Eleocharis cyperus*) and rushes (*Juncus* spp.) Management programs for fresh water marsh habitat will be dependent upon analysis and selection of suitable marshland habitat within the basin system and proximity to adjacent existing marshes. Placement of the marshland will be determined by availability of water.

The recharge basins and basin edges provide nesting and foraging habitat for waterfowl and shorebirds ("water birds"). Over time and through observation the best criteria for water bird management will be determined including the timing of "water on" versus "water off" for different species, nesting and cover requirements, the potential for avian botulism and ways to prevent it, management of basins, topography to provide micro-relief in the form of islands in the middle of basins, and vegetation management along shorelines.

Field surveys of the Kern Water Bank in 1995 and 1996 revealed that both shorebirds and waterfowl nested successfully on the recharge basins. Many of the islands, peninsulas and exterior levees of the basins provided nesting habitat for shorebirds during the late winter and spring. Nests and nesting pairs of American avocets, black-neck stilt, and killdeer were located on the basins. By the time surveys began, the majority of ducks on the basins had left their nests. There were no recorded cases of any significant numbers of dead waterfowl or shore birds on the Kern Water Bank in 1995 and 1996. However, if ten or more dead birds are found in the recharge basins on any given day, CDFG will be notified and birds will be disposed of in manner recommended by CDFG. See additional discussion of botulism in Appendix C.

Many of the recharge basins have islands and/or peninsulas which are attractive to breeding shorebirds and waterfowl because they afford protection from predators and provide access to waterborne food sources. Basins with islands and peninsulas that held water during most of the late winter and spring of 1996 developed thick stands of vegetation on the perimeter levees, islands and peninsulas. This thick vegetation growth may provide some benefit to waterfowl species by providing areas of cover for nest construction and predator avoidance. Conversely this vegetative growth may exclude shorebirds from establishing nests since shorebirds generally nest in areas of relatively sparse vegetation.

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A management strategy to potentially increase the number of nesting shorebirds and waterfowl would be to experiment with selective removal of vegetation from portions of islands and peninsulas. This may provide attractive sites for shorebird nesting while leaving other areas vegetated to provide habitat for waterfowl nesting. Research has already begun on developing monitoring strategies for waterfowl and shorebirds using the Kern Water Bank. To gain the most information on waterfowl and shorebird use of the Kern Water Bank and the surrounding areas while minimizing expense and the potential for duplication of effort, any research, monitoring or species evaluations should be coordinated with Federal, State and local resource agencies. Waterfowl monitoring is currently conducted on the Kern National Wildlife Refuge, private duck clubs and some of the Southern San Joaquin Valley agricultural evaporation basins. Scheduling monitoring activities on the Kern Water Bank with these other programs will provide greater insight into the site specific and regional management of waterfowl in the southern San Joaquin Valley.

Conservation bank and Commercial Development Land. Some of the Mitigation and Commercial Development land in the southern portion of the project area contains suitable habitat and has documented occurrence of covered species. Although this area will be used for water recovery, this use does not conflict with its designation as a future habitat set aside. These lands will require minimal vegetation management and periodic species monitoring to maintain existing habitat values. Following dedication of credits, conservation bank lands will be managed in perpetuity for the benefit of covered species and their habitats, funded by interest from non-wasting management endowments, and, during the existence of the permits, by KWBA pursuant to the Annual Management Plan. Security. KWBA is responsible for ensuring that the Kern Water Bank is reasonably secure from trespassers. The appropriate security measures will be set out in the Annual Management Plan, subject to revision as neighboring land uses change. KWBA shall eject all trespassers it finds on the Kern Water Bank.

### ***C. RELATIONSHIP TO OTHER REGIONAL CONSERVATION PLANS***

The Kern Water Bank HCP will complement other large-scale habitat conservation efforts in Kern County. As shown on the attached "Regional Map" (Map 1), the land to be included in the Kern Water Bank is in close proximity to the planning area for the Metropolitan Bakersfield Habitat Conservation Plan, the ARCO Coles Levee Ecosystem Preserve, the State Tule Elk Reserve, and is in the area of other lands with natural values including Naval Petroleum Reserves No. 1 and No. 2. The Kern Water Bank is also in close proximity to lands that have been identified by state and Federal Resource Agencies, pursuant to the Kern County Valley Floor Draft Habitat Conservation Plan, as having long-term wildlife conservation values (see the map of the "Agency Proposed HCP Protected Lands" originally produced by the Interagency Working Group). The following is a brief description of the conservation efforts on these other properties and the relationship to the Kern Water Bank HCP.

Metropolitan Bakersfield Habitat Conservation Plan The Metropolitan Bakersfield HCP (MBHCP) established a program to address impacts to state and Federal

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listed and other species from urban development activities in a 408 square mile area in and around the City of Bakersfield. With certain exceptions, the MBHCP requires the City and County to compensate for the impacts on threatened and endangered species in the planning area through the acquisition of habitat in the MBHCP plan area. The MBHCP plan area includes a portion of the southern San Joaquin Valley. The City and County have adopted ordinances that impose a fee on new development in the permit area to finance the acquisition of new habitat. The MBHCP excluded from the permit area the primary flood plain of the Kern River and the Kern Water Bank area.

ARCO Coles Levee Ecosystem Preserve ARCO Oil and Gas Company, CDFG and USFWS have developed a program to conserve and manage 6,000 acres for habitat and oil and gas purposes in the Coles Levee area. Under the terms of the Conservation Easement Agreement, ARCO will manage the Coles Levee property to benefit a variety of threatened and endangered species. The Coles Levee Ecosystem Preserve is southwest of the Kern Water Bank property.

Kern County Valley Floor Draft Habitat Conservation Plan The County of Kern, U.S. Fish and Wildlife Service, California Department of Fish and Game, other state and Federal agencies, and a number of affected industry groups are developing a habitat conservation plan for the valley floor portion of Kern County outside of the area addressed by the Metropolitan Bakersfield HCP. Although the Valley Floor HCP is still under development, in 1994 the working group of agencies and interest groups recommended a conservation strategy for the HCP. The recommended conservation strategy would create a program of marketable conservation credits to compensate for impacts to threatened and endangered species within the plan area. Landowners could obtain credits by placing natural and restored lands in permanent reserves or by recording conservation easements. Landowners proposing projects in the habitat of endangered species could elect to compensate for such impacts through the acquisition of conservation credits established under the HCP. The state and Federal Resource Agencies have identified areas (the "red zone" and "green zone") in which conservation credits could be created and that would be the focus of conservation efforts under the program. The Kern Water Bank area is bordered on the west and south by areas that are included in the red and green zones. The KWB HCP area is specifically excluded from the Valley Floor HCP.

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## V. ENFORCEMENT, AMENDMENTS AND EVALUATION

### A. *CONSTRUCTION PHASE COMPLIANCE INSPECTIONS AND REPORTING*

Compliance inspections shall be conducted on an ongoing basis and a compliance report shall be provided by KWBA to the USFWS Sacramento Field Office and the Fresno Regional Office of the CDFG. Informal verbal or written compliance updates shall be provided at the beginning, middle, and end of each major project activity. Inspections shall check for compliance with all of the mitigation measures outlined in Section IV.A. above and the exclusion zones shall be checked to ensure that the signs, stakes, and fencing are still intact and that human activities have been restricted in these protective zones.

An annual compliance report shall be prepared and submitted to the USFWS Sacramento Field Office and the CDFG Fresno Regional Office by March 1st for the preceding calendar year ending December 31st. The report shall detail the following: 1) dates of major construction activities that have occurred; 2) pertinent information concerning the KWBA's success in meeting project mitigation measures; 3) known project effects on listed species; and 4) other pertinent information.

The Kern Water Bank Authority and its agents shall grant the USFWS and CDFG reasonable access for compliance inspections and for salvage or active relocation of specimens, injured or dead animals, or rare plant materials.

### B. *ANNUAL MANAGEMENT PLAN*

The KWBA shall submit to USFWS and CDFG an Annual Management Plan each year by May 1st for a July 1st through June 30th operation year which describes the scope of operational activities contemplated for the KWB, as well as the adaptive management activities to be carried out during the next year.

The USFWS and CDFG shall attempt to provide KWBA with comments on the Annual Management Plan within 60 days of receipt of the plan. If either agency cannot respond within the 60 day period, they will request an extension. KWBA will incorporate, to the extent feasible, agency comments into the work plan at the time they are received.

The KWBA and Resource Agencies agree to confer informally on HCP implementation at least four times annually for the first five years of the permits/authorizations, and at least twice annually for the next five years.

If a dispute concerning the proposed management activities arises between the Resource Agencies and the KWBA the parties shall utilize the following steps.



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1. The KWBA, USFWS and CDFG shall meet and confer in an attempt to solve the dispute.
2. If the dispute cannot be resolved informally, the parties will consider in good faith entering into non-binding mediation or other informal dispute resolution procedures.
3. If the informal dispute resolution procedures do not resolve the dispute to the satisfaction of the parties, any party may pursue its legal remedies.

As an alternative to litigation, KWBA has established three funds to secure its obligations under the HCP, as described in greater detail below. In the event the Resource Agencies believe that KWBA has breached its obligations under this HCP, the Resource Agencies have no obligation to look to the security first. However, the parties understand that disputes may well develop over the life of the permits/authorizations, and that it will most likely be in the interests of all the parties, and to the benefit of the covered species, if the Resource Agencies have an alternative to revoking and/or suspending the permits/authorizations.

### ***C. FUNDING***

#### **1. Ongoing Habitat Management**

The KWBA is responsible for the ongoing habitat management as described in the KWB HCP for the life of the permits/authorizations. The KWBA is a joint powers authority which is comprised of five water districts and one mutual water company. In total, the KWBA participants are supported by a tax base in excess of 500,000 acres of land, including all of urban Bakersfield.

The five water districts and their year of formation are as follows:

Kern County Water Agency, (I.D. 4) formed in 1971;  
Semitropic Water District, formed in 1958;  
Dudley Ridge Water District, formed in 1962;  
Tejon-Castac Water District, formed in 1965;  
Wheeler Ridge-Maricopa Water Storage District, formed in 1971.

The mutual water company is Westside Mutual Water Company.

The above participants of the KWBA each fund their proportionate share of the annual budget as approved by the KWBA Board of Directors. Each of the above participants are financially solid, and with the exception of Westside Mutual Water Company, derive their income from property taxes and assessments, and together, comprise a significant portion of the agricultural industry in Kern County. The adopted budgets and service area for each of the participant districts are as follows:

Kern County Water Agency, ID4	\$ 6,304,000	65,500 acres;
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## KERN WATER BANK HABITAT CONSERVATION PLAN

Semitropic Water District	\$15,705,000	42,328 acres;
Dudley Ridge Water District	\$ 4,000,000	27,500 acres;
Tejon Castac Water District	no budget	10,000 acres;
Wheeler Ridge Water Storage District	\$26,583,899	86,606 acres;
Westside Mutual Water Company	Privately owned	

The Kern Water Bank Authority has no outstanding debt; and has sufficient revenue from its participants to cover the cost of implementing measures proposed in the HCP. The KWBA board of directors by resolution has approved submittal of the KWB HCP application and agreed to carry out the terms and conditions and funding requirements of the KWB HCP.

The KWBA operates on a calendar year and adopts its annual general and administrative budget during October of the previous year. The annual budget is then funded by the participants in their proportionate ownership share through quarterly assessments.

Pursuant to KWBA rules and regulations, the participants have granted to the KWBA a security interest in their base share of the KWBA, guaranteeing payment of the assessments to the Authority. The ultimate penalty for non-payment of an assessment by any participant is that they cannot transfer or withdraw any water credited to their account, or use the facilities in any manner to store additional water until all assessments are paid. The participants, at considerable expense, have currently recharged 400,000 acre feet of water onto the Kern Water Bank property.

### **2. Endowment Account**

To ensure funding for the management in perpetuity of any conservation bank lands for which conservation credits have been sold as credits, KWBA will place \$375.00, which will be adjusted annually for inflation based on the Implicit Price Deflator for State and Local Government Purchase of Goods and Services published by the United States Department of Commerce, for every credit sold into an endowment fund (see Conservation Bank Agreement). The Resource Agencies may require other additional payments from the purchaser of credits, and/or on- and off-site actions as appropriate for individual projects.

The endowment fund will be a non-wasting investment fund managed by CDFG, or a designee of CDFG. Interest from the fund will be paid semi-annually to KWBA, to be used solely for the management of those conservation bank lands upon which a conservation easement has been granted to CDFG pursuant to the Conservation Bank Agreement. KWBA may choose not to receive interest payments. For example, KWBA may be able to manage those conservation bank lands at a profit through the use of grazing leases, and therefore not need the interest payments. KWBA will use the interest payments for conservation bank land management in accordance with the annual management plans.

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### **3. Threatened/Endangered Species Viability Fund**

This fund will be funded over time in the sum of \$ 75,000. The KWBA will originally deposit the sum of \$ 50,000 into a separate fund with the Kern County Treasurer, and will make up any withdrawals made by the Resource Agencies up to a total commitment of \$ 75,000. The KWBA will send periodic statements for this fund to the Resource Agencies.

This fund is solely for listed animal species. The purpose of this fund is to relieve the KWBA of any responsibility to sustain and/or promote long term viability of listed species populations on the KWB property.

The intent of the fund is that the Resource Agencies collectively must have determined that there is a concern, supported by the best available scientific data, with a listed species on the Kern Water Bank property. In this event, the Resource Agencies may draw up to \$10,000 per year from the Viability Fund to be spent at the direction of the Resource Agencies to address their concerns.

The criteria for using the funds will be as follows:

- a) The Resource Agencies must provide KWBA with scientific evidence to justify their concern regarding the purported cause of decline in a threatened or endangered species population on the property.
- b) The Resource Agencies must provide KWBA with their plan of action and methodology for achieving their desired goal.
- c) The Resource Agencies cannot use these funds to import or reintroduce covered species onto the KWB, unless KWBA provides its written consent.

### **4. Notes and Deeds of Trust**

As security for KWBA's obligation to fund the activities required by the Annual Management Plan and the Vegetation Management Plan and as a source of funds for Adaptive Management activities that KWBA will not agree to engage in, KWBA has issued a note in the original principal amount of \$200,000 bearing interest at the rate of inflation to the Department, and secured the note with a deed of trust on farmland located within the Kern Water Bank on the western edge. The Resource Agencies may make a demand on the note and, if the demand is not paid, to foreclose on the deed of trust if the Resource Agencies maintain that an Adaptive Management technique must be put in place, but KWBA, following consultation with the Resource Agencies, does not agree to do so. The Resource Agencies are to use the proceeds from foreclosure to fund the proposed Adaptive Management technique. Excess proceeds will be placed in an interest-bearing account to be drawn upon by the Resource Agencies for the next time that KWBA does not agree to engage in a particular Adaptive Management technique.

The Implementation Agreement requires KWBA to prepare a Permanent Management Plan for all land within the KWB which is covered by a conservation

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easement at the termination of the permits, to take effect after the termination of the Permits/Authorizations. The Permanent Management Plan will commence being prepared in approximately seventy years. As security for KWBA's obligation to manage the property covered by conservation easements in perpetuity, KWBA has issued a note in the original principal amount of \$300,000 bearing interest at the rate of inflation to the Department, and secured the note with a deed of trust on farmland located within the Kern Water Bank on the western edge, adjacent to the farmland securing the \$200,000 note. At any time following the termination of the permits/authorizations issued pursuant to this HCP, the Resource Agencies may make a demand on the note, and if the demand is not paid to foreclose on the deed of trust if the Resource Agencies maintain KWBA has failed to manage the conservation easement lands in a manner consistent with the Permanent Management Plan and the recorded conservation easements. The Resource Agencies are to use the proceeds from foreclosure to fund appropriate management measures. Excess proceeds will be placed in an interest-bearing account to be drawn upon by the Resource Agencies in accordance with the Permanent Management Plan.

### ***D. ADMINISTRATIVE MODIFICATIONS***

In order to facilitate Adaptive Management of the KWB and operation of the water recharge facilities, the KWBA, in its sole discretion and without the approval of any other party, may modify the Map 4, Land Use Plan, to redistribute the lands constituting the Recharge Basins and Other Water Banking Facilities, Compatible Habitat, and the Sensitive Habitat under two circumstances:

1. The boundaries of the recharge basins as laid out in the Land Use Plan (Map 4) will change as recharge basins are filled. As more accurate information, expected to be primarily from aerial photographs, becomes available regarding the recharge basin boundaries, KWBA may modify the Land Use Plan to reflect more accurately the locations of the recharge basins. KWBA will redraw the Land Use Plan such that: (a) there will be no net reduction in the total number of acres of Sensitive Habitat; and (b) in the aggregate with all other administrative modifications, there will not be more than a 10% reduction in the amount of Compatible Habitat in each half section.

2. KWBA also requires certain flexibility to deal with the unknown. Therefore, KWBA may revise the Land Use Plan at any time, and from time to time, so long as the changes, in the aggregate with all other administrative modifications: (a) will not reduce the amount of Sensitive Habitat in each quarter section by more than 10%, (b) will not reduce the amount of Compatible Habitat in each half section by more than 10%, (c) will not affect the permanent mitigation land covered by conservation easements, (d) will not result, to KWBA's knowledge based on a survey of Sensitive Habitat, in the taking of any visible or known listed plant species, and (e) will not result, to KWBA's knowledge based on a survey of Sensitive Habitat, in the taking of any state Fully Protected species.

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## *E. PERMITS/AUTHORIZATIONS AMENDMENTS*

### **1. Amendments**

Amendments to the HCP may be proposed by any party to this HCP. The party proposing the amendment shall provide to all other parties a statement of the reason for the amendment, an analysis of the effects of the amendment on the covered species, and measures to mitigate the effects. If the proposed amendment is a Minor Amendment, then the KWB HCP shall be deemed amended upon the approval by KWBA, USFWS and CDFG of the proposed Minor Amendment.

#### **a. Minor Amendments to the HCP**

Minor amendments to the HCP shall not require amendment of the Implementation Agreement or of the Permits/Authorizations. Minor amendments include, but are not limited, to:

- An increase or decrease of 15% of the total size of the Recharge Basins and Other Water Banking Facilities so long as the land taken from, or added to, the Compatible Habitat, Sensitive Habitat, Farming and/or Conservation bank Land. If taken from, or added to, the Conservation Bank Land an amendment to the Conservation Bank Agreement will be required.
- An increase of permanent water bank facilities beyond 481 acres so long as additional permanent mitigation land is set aside to mitigate impacts of additional permanent facilities. The compensation requirements will be negotiated between KWBA, USFWS, and CDFG.
- Development within the designated commercial development zone.
- An increase in the number of conservation credits available to the KWBA due to an agreement among the KWBA, USFWS and CDFG that the KWBA record conservation easements over land within the Sensitive Habitat Land and sell conservation credits representing Sensitive Habitat Land acreage protected in perpetuity.
- An increase in the number of conservation credits available to KWBA due to the acquisition by KWBA of land from adjoining neighbors.
- Changes in the permitted uses on the KWB whereby the Resource Agencies authorize third persons to use the KWB for recreational and scientific purposes.

#### **b. Major Amendments to Project and Master Permits/Authorizations**

All other amendments will be considered major amendments. Major amendments require formal amendment of the Section 10(a)(1)(B) permit, additional notice in the Federal Register, compliance with NEPA, and re-initiation of the intra-Service

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consultation. Major amendments to the 2081/2835 management authorization require formal amendment to the Management Authorization or Memorandum of Understanding.

### **2. Unforeseen Circumstances; the “No Surprises” Policy**

“Unforeseen circumstances“ means a significant and substantial adverse change in the population of a covered species on the KWB. In deciding whether unforeseen circumstances exist for a particular species or subspecies, USFWS shall consider, among others, the following factors:

- the size of the current range of the affected species;
- the percentage of the range of the species that has been adversely affected by the activities on the KWB;
- the percentage of the range of the species conserved on the KWB;
- the ecological significance of that portion of the range of the species affected by the activities on the KWB;
- the level of knowledge about the affected species;
- whether failure to adopt additional conservation measures will appreciably reduce the likelihood of survival of the affected species; and
- whether this HCP was originally designed to provide an overall net benefit to the affected species.

USFWS may make a finding of unforeseen circumstances only if it determines, following consultation with KWBA, that new or different adaptive management methods cannot adequately address the concerns of USFWS. In the event the USFWS makes a finding of unforeseen circumstances, USFWS may instruct KWBA to alter the manner in which it operates the KWB, but USFWS cannot require KWBA to reduce the acreage dedicated to recharge basins. USFWS cannot require that KWBA acquire additional land outside the KWB for mitigation, nor can it require that KWBA provide any additional financial compensation.

#### ***F. REVOCATION OF CERTIFICATES OF INCLUSION TO MASTER PERMITS/AUTHORIZATIONS***

The Resource Agencies can revoke or suspend the incidental take permit/authorization authority provided to third parties under the Master Permits/Authorizations under FESA and/or CESA if the third party fails to comply with the terms or conditions of the permit/authorization (including the terms and conditions of the agreement between them). Any suspension or revocation with regard to the activities of a third party shall not effect the continued validity of the Project Permits/Authorizations or of the Master Permits/Authorizations with regard to other third parties or with regard to KWBA activities.

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## G. ALTERNATIVES

### 1. No Action/No Take Alternative

The No Action/No Take Alternative means that the incidental take Permits/Authorizations are not issued. Without the permits, no incidental take of listed species could lawfully occur. Implementation of the HCP would not be carried out and no additional recharge facilities would be constructed in areas that contain potential habitat of listed species. Under this alternative, water recovery and delivery facilities for the existing ponds that could result in take of listed species would not be constructed.

The existing interim Permits/Authorizations expire on July 31, 1997. This alternative limits the recharge basins to the 1,518 acres created for Phase I of the interim project. Under this alternative, use of water recharge facilities would be dependent on surveys showing the absence of covered species. The recovery facilities would be limited to the existing facilities on the property unless they can be constructed in areas free of covered species. All operations on the KWB, including vegetation management and basin and levee maintenance, would be done at KWBA's peril for any take of listed species, even an accidental take. Due to the potential for liability for noncompliance with FESA, the no permit alternative would most likely terminate the project.

This alternative would eliminate take of the San Joaquin kit fox and Tipton kangaroo rat. Since, under the Preferred Project alternative, other covered species do not occur in areas that will be subject to flooding or project facilities construction, there is no impact reduction from this alternative for these other covered species.

As a condition of the interim recharge project Permits/Authorizations, Kern Water Bank Authority provided the Department of Fish and Game with a deed of trust for land containing approximately 640 acres located in Kings County (Township 24 South, Range 20 East, Section 4). The condition stipulated that "in the event that the equivalent 445 acres of habitat management lands are not provided as part of the long-term Kern Water Bank conservation program described above the Department will have the ability to foreclose on, and obtain title to, the 640 acres". Thus, no project alternative would result in the transfer of the secured parcel to the CDFG.

This alternative would result in the least amount of land set aside for upland habitat and no management of intermittent wetland habitat. Under this alternative the project would require less land which would increase the amount of land available for sale as surplus for farming and other development. Land not used for recharge ponds and mitigation may be used for farming or other high intensity uses not compatible with habitat needs if the KWB provided that no listed species occur on those lands.

This no action alternative would not meet the water resource objectives of the Project.

The no action alternative is not practical since issuance of the interim permit allowed the construction of 3,034 acres of basins most of which are currently in

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operation. Although water recharge is taking place as a result of the construction of the basins, recovery of the water in the aquifer requires the construction of additional recovery facilities which are part of the permanent project. Without construction of new recovery facilities, water recovery would be severely limited and costly. Without access to the banked water, there is no social benefit to the increased water supply.

Without implementation of the full HCP, the sole mitigation for the interim project is the transfer of the 640 acre parcel in Kings County which was held as security. Under the no action alternative, that parcel would be deeded to CDFG. No biological mitigation would be in effect within the Kern Water Bank after expiration of the interim Permits/Authorizations in July of 1997.

### **2. No Master Permit**

This alternative examines the scenario whereby the CDFG and USFWS issue the Project Permit, but deny the issuance of the Master Permit. Under this alternative, the KWBA may or may not create a conservation bank on 3,267 acres of the Kern Water Bank. If the Bank is created, land could be sold to third-parties who did not need take authorization, or who already have take authorization, such as Metropolitan Bakersfield HCP, other authorized HCPs, or section 7 incidental take authority recipients. If the KWBA decided not to establish a conservation bank, the 3,267 acres would remain as surplus with little or no protection or vegetation management. Also, the covered species living there would not get the benefit of the creation of a large, contiguous parcel of land protected in perpetuity.

Any future use of the surplus land that involves ground disturbance would either require an additional take permit/authorization from USFWS and CDFG or an amendment to the approved take permit/authorization.

With no Master Permit, eligible third-parties would not have a simplified permitting process available.

### **3. Monterey Agreement EIR, Alternative A**

On December 1, 1994, the water contractors of the State of California and others entered into the Monterey Principles, a mediated agreement to change a number of provisions of the contracts governing the administration of the State of California water project (SWP). Pursuant to the Monterey Principles, DWR sold KWB to Kern County Water Agency (KCWA) on August 9, 1996 in exchange for 45,000 acre feet of SWP entitlement. KCWA subsequently transferred KWB to KWBA.

The environmental effects of the Monterey Principles were analyzed in a Program Environmental Impact Report entitled "Final Program Environmental Impact Report, Implementation of the Monterey Agreement Statement of Principles by the State Water Contractors and the State of California, Department of Water Resources for Potential Amendments to the State Water Supply Contracts" (State Clearinghouse No. 95023035.) (the "Monterey Agreement EIR").



## KERN WATER BANK HABITAT CONSERVATION PLAN

The Monterey Agreement EIR analyzed the following land use scenario for the Kern Water Bank: “Of the 20,546 acres comprising the KFE [Kern Fan Element] (including the Rosedale-Rio Bravo Property [which is not included in the Kern Water Bank project]), 3,258 acres would be used for water recharge and extraction facilities. Approximately 2,000 acres would be maintained as native and disturbed vegetation. Of the remaining acreage, 14,798 acres would be classed as previously irrigated agricultural land/undesigned use, and 490 acres would continued to be occupied by non-project roads, canals, and oil and gas facilities on non-native and disturbed vegetation land.” (Monterey Agreement EIR, at p. 2-14.)

This alternative would reduce the amount of land used for recharge facilities, however, it would only set aside 2,000 acres of land as native and disturbed habitat. Much of the land would remain un-designated.

### **H. EVALUATION**

#### **1. Endangered Species Act Section 10(a)(1)(B) Permit**

Section 10(a)(1)(B) of the Endangered Species Act (FESA) requires that a conservation plan be prepared to support a permit application. According to the USFWS which administers the FESA, the conservation plan must contain the elements listed below in *italic* type face. Chapter and section references are included after each element description to show where each of these elements is covered in the KWB HCP.

- 1) *A description of the impacts likely to result from the proposed taking of the listed wildlife species.* See Chapter III.B. Estimate of Take and Chapter III.C Estimate of Take Under Master Permit.

*The HCP must also include:*

- a. Delineation of the HCP boundary.* See Map 2 Project Permit Area and Map 3 Credit Area.
- b. Collection and synthesis of biological data for all listed and candidate species being addressed in the HCP.* See Chapter III.A. Covered Species, and Appendix B, Species Accounts.
- c. Identification of activities that may result in take.* Incidental take may occur as a result of development and operation of the Kern Water Bank as well as during management of the compatible habitat and other covered activities. See Chapter II. Project Description. Incidental take may also be caused by qualified third parties for their projects and by KWBA for its other projects covered by the Master Permit/Authorization. See Chapter II.F. Master Permits/Authorizations.

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- d. Quantify anticipated take levels either in terms of habitat loss (acres) or numbers of individual animals. See Chapter III.B. Estimate of Take and Chapter III.C. Estimate of Take Under Master Permit.*
- 2) *Measures the applicant will undertake to monitor, minimize, and mitigate such impacts; the funding that will be made available to undertake such measures; and the procedures to deal with unforeseen circumstances;*
- a. Monitor. See Chapter IV.A. Minimization of Impacts and the Project Requirements Agreements/CESA MOUs between the Resource Agencies and the Included Parties, made and entered pursuant to the Conservation Bank Agreement.*
- b. Minimize. See Chapter IV.A. Minimization of Impacts and the Project Requirements Agreements/CESA MOUs between the Resource Agencies and the Included Parties, made and entered pursuant to the Conservation Bank Agreement.*
- c. Mitigate. See Chapter IV.B. Mitigation of Impacts and the Project Requirements Agreements/CESA MOUs between the Resource Agencies and the Included Parties, made and entered pursuant to the Conservation Bank Agreement.*
- d. Funding. All HCP activities will be funded by the Kern Water Bank Authority.*
- e. Unforeseen circumstances. See Chapter V.E.2. and the Implementation Agreement.*
- 3) *Alternative actions the applicant considered that would not result in take, and the reasons why such alternatives are not being utilized. Two (2) alternatives were considered (see section V.F. above).*
- 4) *Additional measures the Service may require as necessary or appropriate for purposes of the plan. The KWB HCP will be implemented through a legal Implementation Agreement between the KWBA, USFWS, and CDFG. Third parties, and KWBA for other projects, may obtain incidental take authority under the Master Permits/Authorizations pursuant to the Conservation Bank Agreement between KWBA, USFWS, and CDFG.*

### **2. California Endangered Species Act and California Dept. of Fish and Game 2081/2835 Management Authorization**

The California Endangered Species Act (State Act) is focused on the conservation of all State listed threatened or endangered species.

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The CESA/NCCP authorization being issued by CDFG is an authorization issued in accordance with the Implementation Agreement and this HCP under CESA (including but not limited to California Fish and Game Code section 2081) and/or the NCCP Act (including but not limited to California Fish and Game Code sections 2825(c) and 2835), to permit the Take of a species listed under CESA as threatened or endangered, or of a species which is a candidate for such a listing, or of a species identified pursuant to section 2835. These legal authorities are wholly independent of each other.

The KWB HCP addresses potential impacts on the San Joaquin antelope squirrel, a state listed species only, and provides a mitigation program to mitigate the potential impacts (see Chapter IV.)

### **3. NEPA/CEQA Compliance**

USFWS will be the lead agency for NEPA compliance. The environmental assessment prepared by USFWS for review of the KWB HCP will be used for the NEPA requirements.

The KWBA will be the lead agency for the CEQA compliance. The KWBA prepared an initial study which resulted in an addendum being prepared to the Environmental Impact Report prepared for the implementation of the Monterey Agreement, a Statement of Principles by the State Water Contractors and the State of California, Department of Water Resources for Potential Amendments to the State Water Supply Contracts (State Clearinghouse No. 95023035).

# KERN WATER BANK HABITAT CONSERVATION PLAN

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U.S. Fish and Wildlife Service, Office of Endangered Species, Sacramento

Peter Cross

Cay Goude

Heather Bell

Dana Jacobsen, Office of the Solicitor

California Department of Fish and Game, Fresno

Chris Beale

Dale Mitchell

Jeff Single

California Department of Water Resources, Bakersfield

Steve Juarez

Jenny Marr

Kern Water Bank Authority, Bakersfield

Ken Bonesteel

Scott Hamilton

Bill Phillimore

William Vanherweg, Biological Consultant, Bakersfield

Paul Kephart, Restoration Ecologist

Wes Rhodehamel, Director of Biological Sciences Division, QUAD Consultants

### B. *BIBLIOGRAPHY*

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# KERN WATER BANK HABITAT CONSERVATION PLAN

## *C. REPORT PREPARERS*

### Main Document and Appendix B, Species Accounts

Thomas Reid Associates  
505 Hamilton Avenue, Suite 201  
(P.O. Box 880)  
Palo Alto, CA 94301  
Tel: (415) 327-0429  
Fax: (415) 327-4024  
Tom Reid, Principal and Project Manager  
Victoria Harris, Senior Associate

### Appendix A, Operations Manual

Kern Water Bank Authority  
P.O. Box 80607  
Bakersfield, Ca 93380-0607  
Tel: (805) 399-8735  
Fax: (805) 399-9751  
Ken Bonesteel, Project Manager

### Appendix C, Vegetation Management Plan

Rana Creek Ranch  
35351 E. Carmel Valley Road  
Carmel Valley, Ca 93924  
Tel: (408) 659-3820  
Fax: (408) 659-4851  
Paul Kephart, Restoration Ecologist

### Appendix D, Waterfowl Management Plan

Kern Water Bank Authority  
P.O. Box 80607  
Bakersfield, Ca 93380-0607  
Tel: (805) 399-8735  
Fax: (805) 399-9751  
Ken Bonesteel, Project Manager

Technical assistance:

Buena Vista Biological  
P.O.Box 9325  
Bakersfield, CA 93389-9325  
Tel: (805) 839-0375  
Fax: (805) 322-8056  
Bill Vanherweg, Certified Wildlife Biologist

## **KERN WATER BANK HABITAT CONSERVATION PLAN**

QUAD Consultants

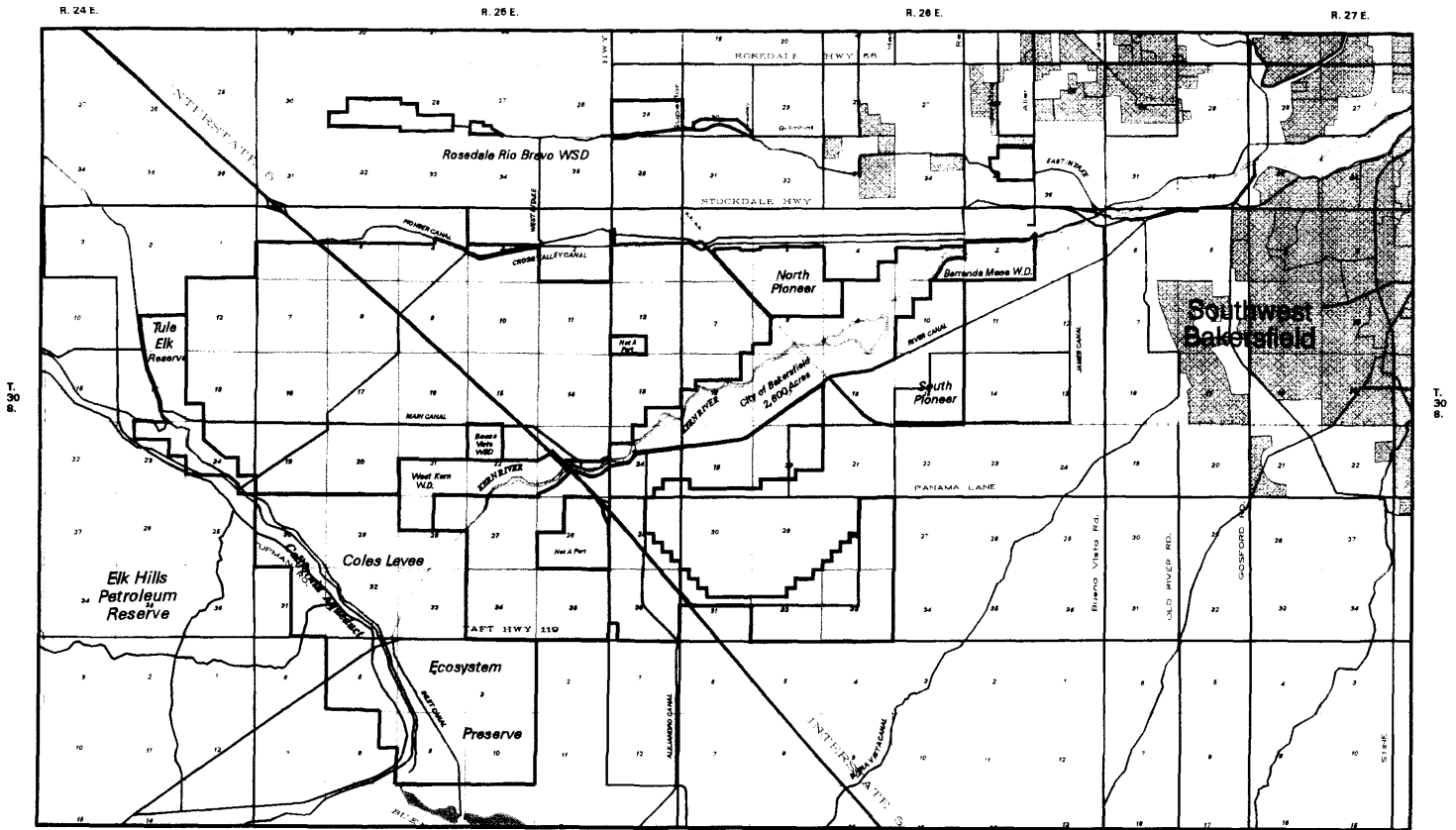
5500 Ming Ave, Suite 410

Bakersfield, Ca 93309

Tel: (805) 835-8300

Fax: (805) 835-8311

Wes Rhodehamel, Director of Biological Sciences Division



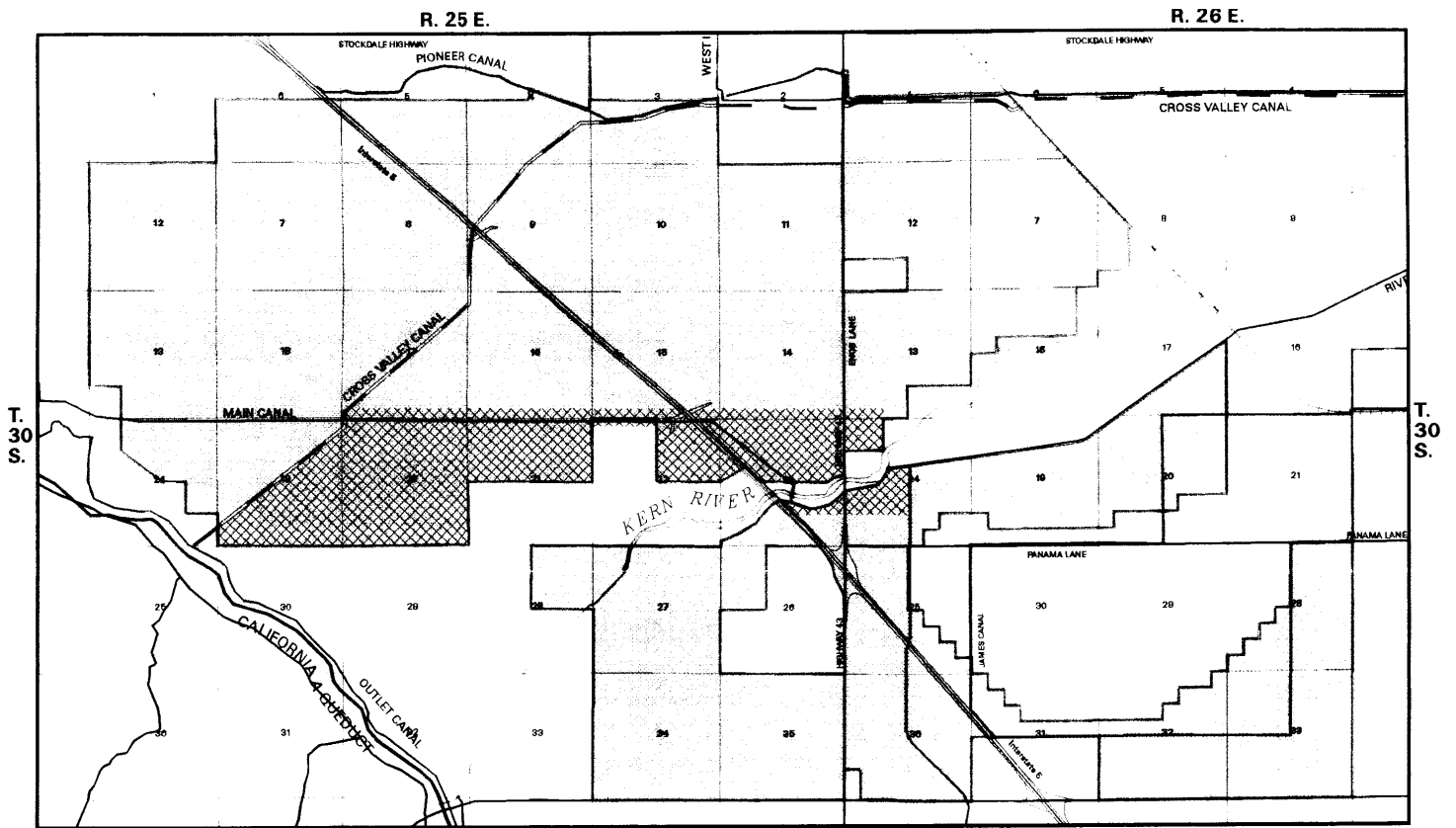
# Region Map

- Kern Water Bank Project
- Designated Reserve/Preserve
- Neighboring Water Banking Projects
- Urban Development

**Kern Water Bank Authority**



Map 1



## Permit Area

KWB HCP Permitted Area
  Supply/Recovery Canal Zone

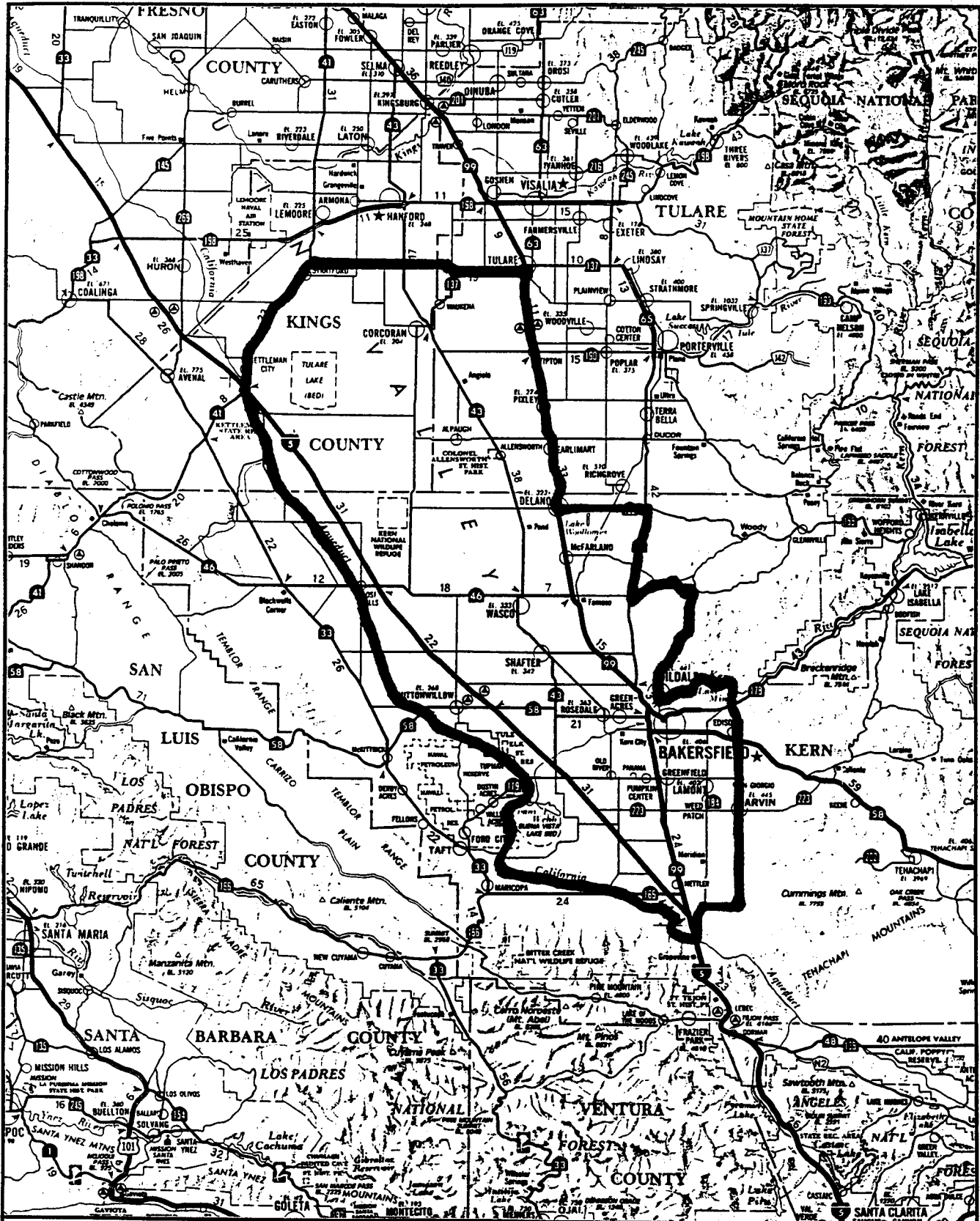
*Kern Water Bank Authority*



1" = 1 mile

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Map 2

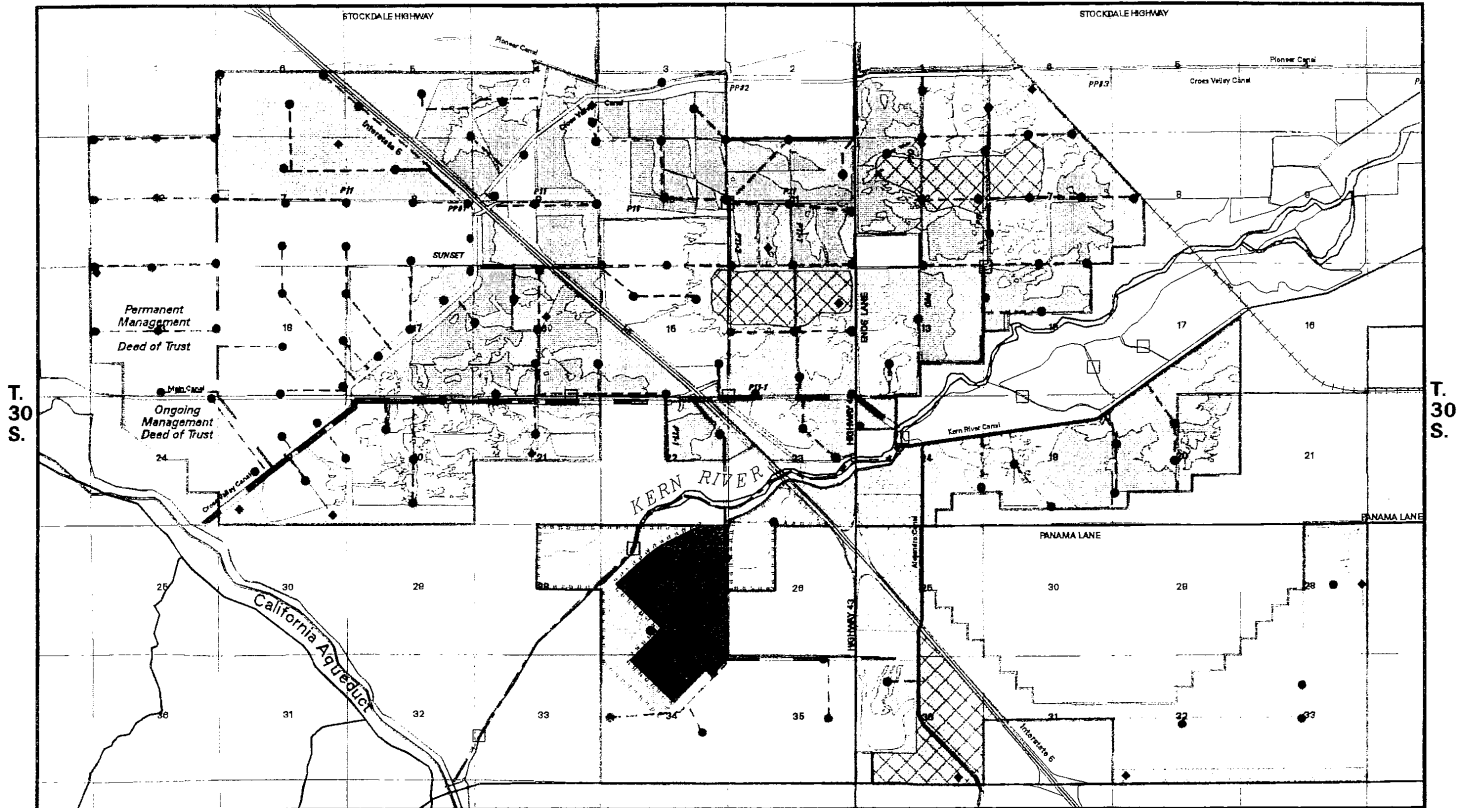


**KERN WATER BANK MASTER PERMIT CREDIT AREA**

May 5, 1997

R. 25 E.

R. 26 E.



# Kern Water Bank Land Use Plan

- |                         |                                  |                            |                                  |
|-------------------------|----------------------------------|----------------------------|----------------------------------|
| Compatible Habitat      | DWR Mitigation Easement          | Existing Monitoring Well   | Proposed Underground Pipeline    |
| Existing Recharge Basin | Sensitive Habitat                | Existing Canal             | Proposed Canal                   |
| Proposed Recharge Basin | Potential Commercial Development | Existing Recovery Pipeline | Proposed Kern River Reverse Flow |
| Conservation Bank       | KWB Mitigation Easement          | Existing Recovery Canal    | Proposed Pump Station            |
| Farming                 | Existing Water Well              | Proposed Water Well        |                                  |

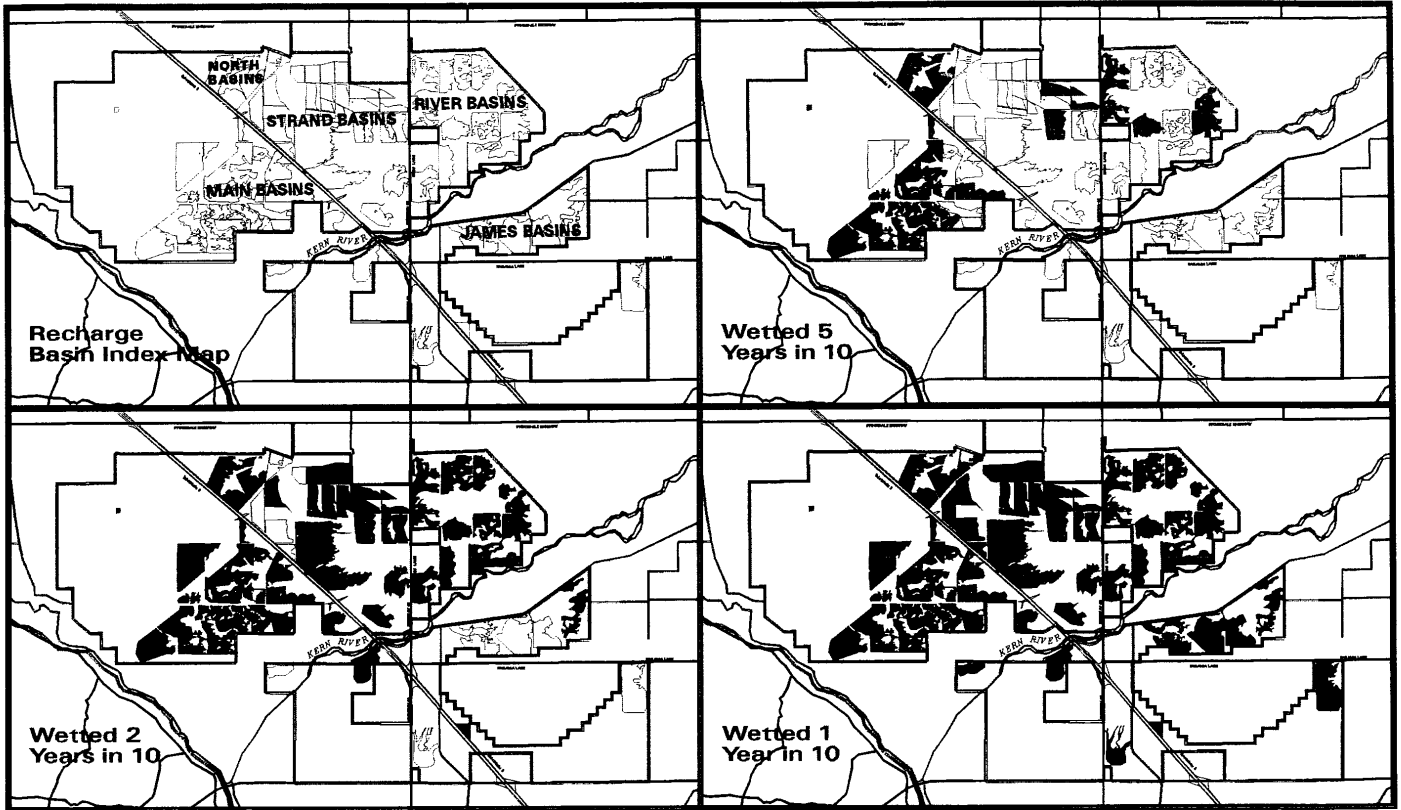
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1" = 1 mile

Map 4



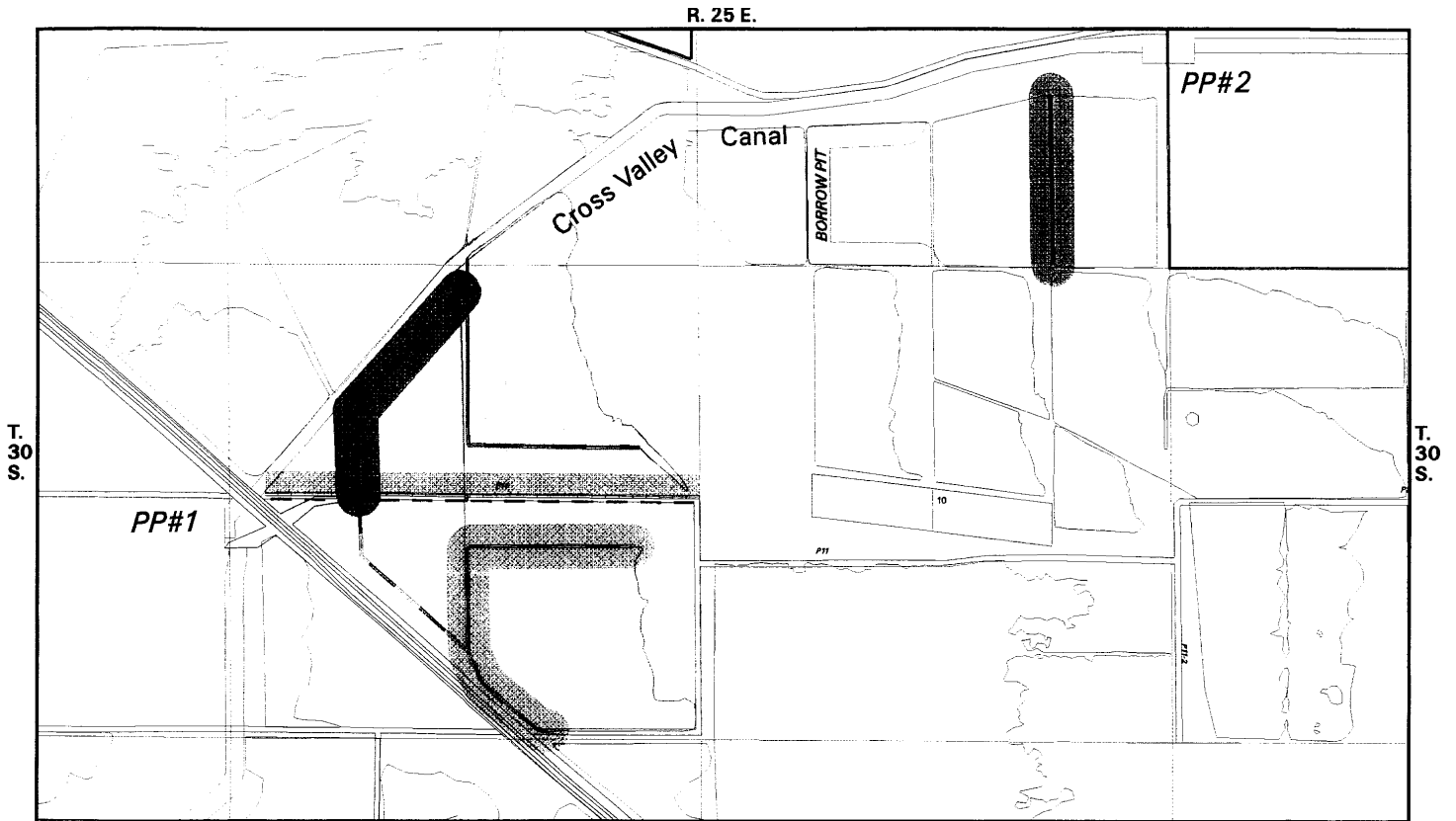


# Recharge Frequency Plan











*Kern Water Bank Authority*



Map 5



## Vegetation Management Study Plan

- |   |   |
|---|---|
|  Burning                   |  Pond Bottom Burning |
|  Erosion Control - Seeding |  Pond Bottom Grazing |
|  Grazing                   |  Lateral             |
|  Mowing                    |  Levee               |
|  Revegetation - Seeding    |  Dirt Road           |

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1" = 1500'

05/05/97 Lmetzger-pendmap.apr1

Map 6