

# **Appendix A – Fish & Wildlife Species List and Letter of Concurrence**



**United States Department of the Interior**  
**FISH AND WILDLIFE SERVICE**

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825



August 17, 2010

Document Number: 100817084532

Emily Bowen  
Provost & Pritchard Consulting  
130 N Garden Street  
Visalia, CA 93291

Subject: Species List for Delano-Earlimart Irrigation District Southern Turnipseed Groundwater Basin Expansion

Dear: Ms. Bowen

We are sending this official species list in response to your August 17, 2010 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 15, 2010.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at [www.fws.gov/sacramento/es/branches.htm](http://www.fws.gov/sacramento/es/branches.htm).

Endangered Species Division



**U.S. Fish & Wildlife Service**  
**Sacramento Fish & Wildlife Office**  
**Federal Endangered and Threatened Species that Occur in**  
**or may be Affected by Projects in the Counties and/or**  
**U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 100817084532

Database Last Updated: April 29, 2010

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Quad Lists

Listed Species

Invertebrates

*Branchinecta conservatio*

Conservancy fairy shrimp (E)

*Branchinecta lynchi*

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

*Desmocerus californicus dimorphus*

valley elderberry longhorn beetle (T)

Fish

*Hypomesus transpacificus*

delta smelt (T)

Amphibians

*Rana draytonii*

California red-legged frog (T)

Reptiles

*Gambelia (=Crotaphytus) sila*

blunt-nosed leopard lizard (E)

*Thamnophis gigas*

giant garter snake (T)

Mammals

*Dipodomys nitratooides nitratooides*

Tipton kangaroo rat (E)

*Vulpes macrotis mutica*

San Joaquin kit fox (E)

Plants

*Caulanthus californicus*

California jewelflower (E)

*Eremalche kernensis*

Kern mallow (E)

*Pseudobahia peirsonii*

San Joaquin adobe sunburst (T)

Quads Containing Listed, Proposed or Candidate Species:

DEEPWELL RANCH (263A)

MCFARLAND (263B)  
POND (264A)  
DUCOR (287A)  
SAUSALITO SCHOOL (287B)  
DELANO EAST (287C)  
RICHGROVE (287D)  
PIXLEY (288A)  
DELANO WEST (288D)

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## County Lists

No county species lists requested.

### Key:

- (E) *Endangered* - Listed as being in danger of extinction.
- (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
- (P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat* - Area essential to the conservation of a species.
- (PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
- (C) *Candidate* - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) *Critical Habitat* designated for this species

## Important Information About Your Species List

### How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

### Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

### Surveying

Some of the species on your list may not be affected by your project. A trained biologist

and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

### Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

### Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

## Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

## Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 15, 2010.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846

In Reply Refer To:  
81420-2011-TA-0408

APR 29 2011

## Memorandum

To: David Hyatt, Bureau of Reclamation, South-Central California Area Office,  
Fresno, California

From: *ACTING* Assistant Field Supervisor, Sacramento Fish and Wildlife Office  
Sacramento, California

Subject: Informal Consultation on the Construction of the Delano-Earlimart Irrigation  
District (DEID) Southern Turnipseed Groundwater Basin Expansion, Richgrove,  
Tulare County, California

*Daniel Russell*

This letter responds to your March 8, 2011, request for informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed construction of the Delano-Earlimart Irrigation District's (DEID) Southern Turnipseed Groundwater Basin Expansion (Proposed Project), located near Richgrove, Tulare County, California. We received your request on March 10, 2011. In your memorandum, the Bureau of Reclamation (Reclamation) requested concurrence with the determination that the Proposed Project may affect, but is not likely to adversely affect the San Joaquin kit fox (*Vulpes macrotis mutica*). Our response to this request for concurrence is provided pursuant to section 7(a)(2) of the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the regulations governing interagency consultations (50 CFR§402).

The Service has reviewed your memorandum dated March 8, 2011, and other information on file at the Sacramento Fish and Wildlife Office. This information was sufficient for the Service to concur with the Reclamation's determination that the Proposed Project may affect, but is not likely to adversely affect San Joaquin kit fox.

The Proposed Project consists of converting 80 acres of vineyards to a water recharge facility and the indirect effects from the action, including ongoing operation of the facilities. The Proposed Project would include excavation of an 80-acre parcel and subsequent levee construction to create four 20-acre recharge cells. Up to 100,000 cubic-yards of soil would be excavated from the 80 acre parcel, which would be used to build up the levees. Each cell, from bottom to top, would not exceed 7 feet in depth. Typical water depth in the cell would range from

TAKE PRIDE  
IN AMERICA 

0.5 feet to 3 feet. Water conveyed to the recharge cells would be delivered via the Kern-Friant Canal to the White River utilizing existing water rights. It is anticipated that the cells would be filled seasonally from existing DEID diversions on the White River; however, there may be years when cells would remain dry and other years in which cells would be operated continuously.

Small mammal species have the potential to periodically colonize the facilities and create burrows on the levee banks and when dry, the bottom of the recharge cells. These burrows could be flooded or disturbed by operations of the Proposed Project. San Joaquin kit fox could periodically forage on any small mammals present on the site or utilize ground squirrel burrows as dens. To reduce the potential for small mammals to colonize the levees, the levees would be maintained to suppress growth of vegetation. Species such as ground squirrels would be discouraged (through vegetation control and mechanical discing) to maintain the integrity of the impoundment levees. DEID has not identified that pesticides would be used for vegetation or rodent control as part of their project description, as such the Service has not evaluated any potential effect that pesticides might have on the San Joaquin kit fox.

During periods when the recharge cells are dry, e.g. during periods of drought or when water for percolation might not be available, the basins would be periodically disturbed (disced) to preclude the establishment of vegetation. Because periodic discing would remove vegetation and forage for small mammals, there would be limited opportunity for establishment of prey populations or their burrows, which could be used by San Joaquin kit fox. As such, it is unlikely that San Joaquin kit fox would forage in the affected area, although San Joaquin kit fox might occasionally travel through the area.

The Proposed Project involves construction in a rural agricultural area that has been intensively farmed for several decades. The Proposed Project site is surrounded by vineyards, orchards and row crops. Based on expected low density of San Joaquin kit fox that may be found in the agriculturally dominated landscape surrounding the action area, and because DEID will conduct preconstruction surveys prior to construction, and future maintenance operations will discourage the establishment of small mammal populations and burrows which could be utilized by the San Joaquin kit fox, the Service concurs with Reclamation that the Proposed Project may affect, but is not likely to adversely affect the San Joaquin kit fox.

This concludes the Service's review of the Turnipseed Groundwater Basin Expansion project, Richgrove, Tulare County, California, and no further coordination with the Service under the Act is necessary at this time. This concurrence is valid for the project as proposed; any changes to the project (including the use of pesticides), that may adversely affect listed species or critical habitat will require that Reclamation initiate formal section 7 consultation pursuant to 50 CFR 402.14.

Mr. David Hyatt

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We appreciate your efforts to protect and conserve endangered species. If you have any questions regarding this response, please contact Mark Littlefield, Chief, Watershed Planning Branch at (916) 414-6520, or Thomas Leeman, Chief, San Joaquin Valley Branch at (916) 414-6544.

cc:

Justin Sloan, California Department of Fish and Game, Fresno, California

# Appendix B – URBEMIS Files

Page: 1

8/17/2010 10:02:57 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: South Turnipseed Expansion

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10_Dust</u>	<u>PM10_Exhaust</u>	<u>PM10</u>	<u>PM2.5_Dust</u>	<u>PM2.5_Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	0.07	0.52	0.31	0.00	4.80	0.03	4.83	1.00	0.03	1.03	49.71
2011 TOTALS (tons/year unmitigated)	0.11	0.84	0.51	0.00	8.20	0.05	8.25	1.71	0.04	1.76	84.93

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.87	0.00	0.14	0.00	0.00	0.00	0.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.10	0.00	0.01	0.00	0.00	0.00	1.11

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.97	0.00	0.15	0.00	0.00	0.00	1.36

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10_Dust</u>	<u>PM10_Exhaust</u>	<u>PM10</u>	<u>PM2.5_Dust</u>	<u>PM2.5_Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.01	0.00	0.14	0.00	0.00	0.00	0.25
Consumer Products	0.00						
Architectural Coatings	1.86						
<b>TOTALS (tons/year, unmitigated)</b>	<b>1.87</b>	<b>0.00</b>	<b>0.14</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.25</b>

Area Source Changes to Defaults

Percent residential using natural gas changed from 60% to 0%

Percent nonresidential using natural gas changed from 100% to 0%

The number of persons per household for consumer product use changed from 2.861 persons to 0 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Groundwater Recharge Basin	0.10	0.00	0.01	0.00	0.00	0.00	1.11
<b>TOTALS (tons/year, unmitigated)</b>	<b>0.10</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.11</b>

Operational Settings:

Does not include correction for passby trips  
 Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Groundwater Recharge Basin		0.01	acres	80.00	0.80	5.91
					0.80	5.91

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.9	98.9	0.2
Light Truck < 3750 lbs	12.1	2.5	91.7	5.8
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	2.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	59.0	41.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

	Travel Conditions					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Groundwater Recharge Basin				2.0	1.0	97.0

# **Appendix C – CEQA Checklist Signature Page**

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agriculture Resources         | <input type="checkbox"/> Air Quality                        |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils                      |
| <input type="checkbox"/> Greenhouse Gas Emissions        | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality            |
| <input type="checkbox"/> Land Use/Planning               | <input type="checkbox"/> Mineral Resources             | <input type="checkbox"/> Noise                              |
| <input type="checkbox"/> Population/Housing              | <input type="checkbox"/> Public Services               | <input type="checkbox"/> Recreation                         |
| <input type="checkbox"/> Transportation/Traffic          | <input type="checkbox"/> Utilities / Service Systems   | <input type="checkbox"/> Mandatory Findings of significance |

**DETERMINATION:** (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

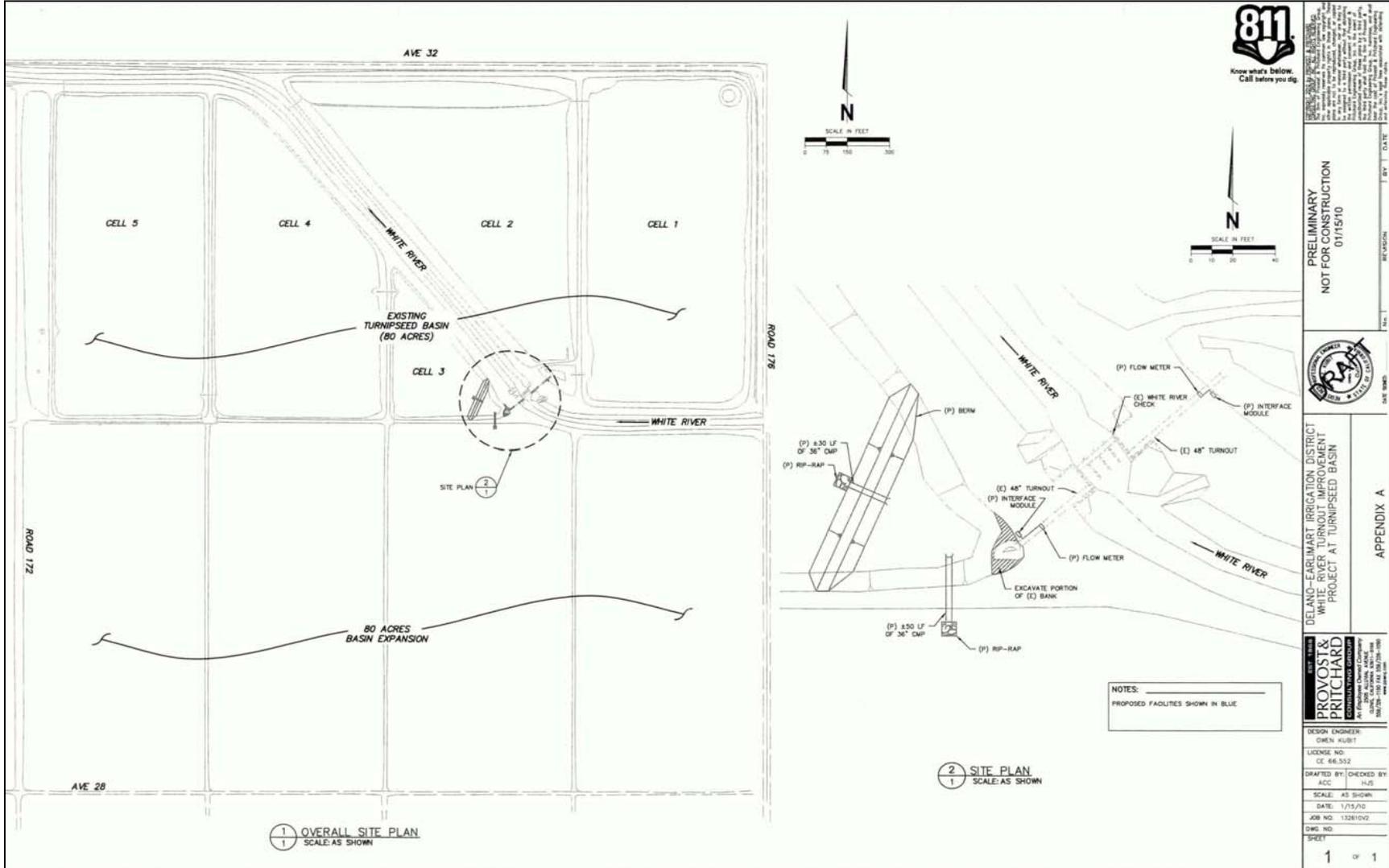
  
\_\_\_\_\_  
Signature

DALE BROGAN  
\_\_\_\_\_  
Printed name

9/29/10  
\_\_\_\_\_  
Date

DELANO - EARLEWART I.D.  
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For

# Appendix D – Construction Drawing



# **Appendix E – Environmental Protection Measures**

BURROWING OWL SURVEY PROTOCOL  
AND MITIGATION GUIDELINES

Prepared by:

The California Burrowing Owl Consortium

April 1993

## INTRODUCTION

The California Burrowing Owl Consortium developed the following Survey Protocol and Mitigation Guidelines to meet the need for uniform standards when surveying burrowing owl (*Speotyto cunicularia*) populations and evaluating impacts from development projects. The California Burrowing Owl Consortium is a group of biologists in the San Francisco Bay area who are interested in burrowing owl conservation. The following survey protocol and mitigation guidelines were prepared by the Consortium's Mitigation Committee. These procedures offer a decision-making process aimed at preserving burrowing owls in place with adequate habitat.

California's burrowing owl population is clearly in peril and if declines continue unchecked the species may qualify for listing. Because of the intense pressure for development of open, flat grasslands in California, resource managers frequently face conflicts between owls and development projects. Owls can be affected by disturbance and habitat loss, even though there may be no direct impacts to the birds themselves or their burrows. There is often inadequate information about the presence of owls on a project site until ground disturbance is imminent. When this occurs there is usually insufficient time to evaluate impacts to owls and their habitat. The absence of standardized field survey methods impairs adequate and consistent impact assessment during regulatory review processes, which in turn reduces the possibility of effective mitigation.

These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or the resources that support them. The process begins with a four-step survey protocol to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Each project and situation is different and these procedures may not be applicable in some circumstances. Finally, these are not strict rules or requirements that must be applied in all situations. They are guidelines to consider when evaluating burrowing owls and their habitat, and they suggest options for burrowing owl conservation when land use decisions are made.

Section 1 describes the four phase Burrowing Owl Survey Protocol. Section 2 contains the Mitigation Guidelines. Section 3 contains a discussion of various laws and regulations that protect burrowing owls and a list of references cited in the text.

We have submitted these documents to the California Department of Fish and Game (CDFG) for review and comment. These are untested procedures and we ask for your comments on improving their usefulness.

## SECTION 1 BURROWING OWL SURVEY PROTOCOL

### PHASE I: HABITAT ASSESSMENT

The first step in the survey process is to assess the presence of burrowing owl habitat on the project site including a 150-meter (approx. 500 ft.) buffer zone around the project boundary (Thomsen 1971, Martin 1973).

#### **Burrowing Owl Habitat Description**

Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat: both natural and artificial burrows provide protection, shelter, and nests for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also may use man-made structures, such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement.

#### **Occupied Burrowing Owl Habitat**

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Occupancy of suitable burrowing owl habitat can be verified at a site by an observation of at least one burrowing owl, or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992). A site should be assumed occupied if at least one burrowing owl has been observed occupying a burrow there within the last three years (Rich 1984).

The Phase II burrow survey is required if burrowing owl habitat occurs on the site. If burrowing owl habitat is not present on the project site and buffer zone, the Phase II burrow survey is not necessary. A written report of the habitat assessment should be prepared (Phase IV), stating the reason(s) why the area is not burrowing owl habitat.

### PHASE II: BURROW SURVEY

1. A survey for-burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (approx 500 ft.) of the project impact zone. This 150-meter buffer zone is included to account for adjacent burrows and foraging habitat outside the project area and impacts from factors such as noise and vibration due to heavy equipment which could impact resources outside the project area.

2. Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 30 meters (approx. 100 ft.), and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. To efficiently survey projects larger than 100 acres, it is recommended that two or more surveyors conduct concurrent surveys. Surveyors should maintain a minimum distance of 50 meters (approx. 160 ft.) from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.
3. If burrows or burrowing owls are recorded on the site, a map should be prepared of the burrow concentration areas. A breeding season survey and census (Phase III) of burrowing owls is the next step required.
4. Prepare a report (Phase IV) of the burrow survey stating whether or not burrows are present.
5. A preconstruction survey may be required by project-specific mitigations no more than 30 days prior to ground disturbing activity.

### **PHASE III: BURROWING OWL SURVEYS, CENSUS AND MAPPING**

If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site. Surveys in the breeding season are required to describe if, when, and how the site is used by burrowing owls. If no owls are observed using the site during the breeding season, a winter survey is required.

#### **Survey Methodology**

A complete burrowing owl survey consists of four site visits. During the initial site visit examine burrows for owl sign and map the locations of occupied burrows. Subsequent observations should be conducted from as many fixed points as necessary to provide visual coverage of the site using spotting scopes or binoculars. It is important to minimize disturbance near occupied burrows during all seasons. Site visits must be repeated on four separate days. Conduct these visits from two hours before sunset to one hour after or from one hour before to two hours after sunrise. Surveys should be conducted during weather that is conducive to observing owls outside their burrows. Avoid surveys during heavy rain, high winds (> 20 mph), or dense fog.

**Nesting Season Survey.** The burrowing owl nesting season begins as early as February 1 and continues through August 31 (Thomsen 1971, Zam 1974). The timing of nesting activities may vary with latitude and climatic conditions. If possible, the nesting season survey should be conducted during the peak of the breeding season, between April 15 and July 15. Count and map all burrowing owl sightings, occupied burrows, and burrows with owl sign. Record numbers of pairs and juveniles, and behavior such as courtship and copulation. Map the approximate territory boundaries and foraging areas if known.

**Survey for Winter Residents (non-breeding owls).** Winter surveys should be conducted between December 1 and January 31, during the period when wintering owls are most likely to be present. Count and map all owl sightings, occupied burrows, and burrows with owl sign.

Surveys Outside the Winter and Nesting Seasons. Positive results, (i.e., owl sightings)- outside of the above survey periods would be adequate to determine presence of owls on site. However, results of these surveys may be inadequate for mitigation planning because the numbers of owls and their pattern of distribution may change during winter and nesting seasons. Negative results during surveys outside the above periods are not conclusive proof that owls do not use the site.

**Preconstruction Survey.** A preconstruction survey may be required by project-specific mitigations and should be conducted no more than 30 days prior to ground disturbing activity.

## **PHASE IV: RESOURCE SUMMARY, WRITTEN REPORT**

A report should be prepared for CDFG that gives the results of each Phase of the survey protocol, as outlined below.

### **Phase I: Habitat Assessment**

1. Date and time of visit(s) including weather and visibility conditions; methods of survey.
2. Site description including the following information: location, size, topography, vegetation communities, and animals observed during visit(s).
3. An assessment of habitat suitability for burrowing owls and explanation.
4. A map of the site.

### **Phase II: Burrow Survey**

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.
2. A more detailed site description should be made during this phase of the survey protocol including a partial plant list of primary vegetation, location of nearest freshwater (on or within one mile of site), animals observed during transects.
3. Results of survey transects including a map showing the location of concentrations of burrow(s) (natural or artificial) and owl(s), if present.

### **Phase III: Burrowing Owl Surveys, Census and Mapping**

1. Date and time of visits including weather and visibility conditions; survey methods including transect spacing.
2. Report and map the location of all burrowing owls and owl sign. Burrows occupied by owl(s) should be mapped indicating the number of owls at each burrow. Tracks, feathers, pellets, or other items (prey remains, animal scat) at burrows should also be reported.
3. Behavior of owls during the surveys should be carefully recorded (from a distance) and reported. Describe and map areas used by owls during the surveys. Although not required, all behavior is valuable to document including feeding, resting, courtship, alarm, territorial, parental, or juvenile behavior.
4. Both winter and nesting season surveys should be summarized. If possible include information regarding productivity of pairs, seasonal pattern of use, and include a map of the colony showing territorial boundaries and home ranges.
5. The historical presence of burrowing owls on site should be documented, as well as the source of such information (local bird club, Audubon society, other biologists, etc.).

# Burrowing: Owl Survey Protocol

April 1993

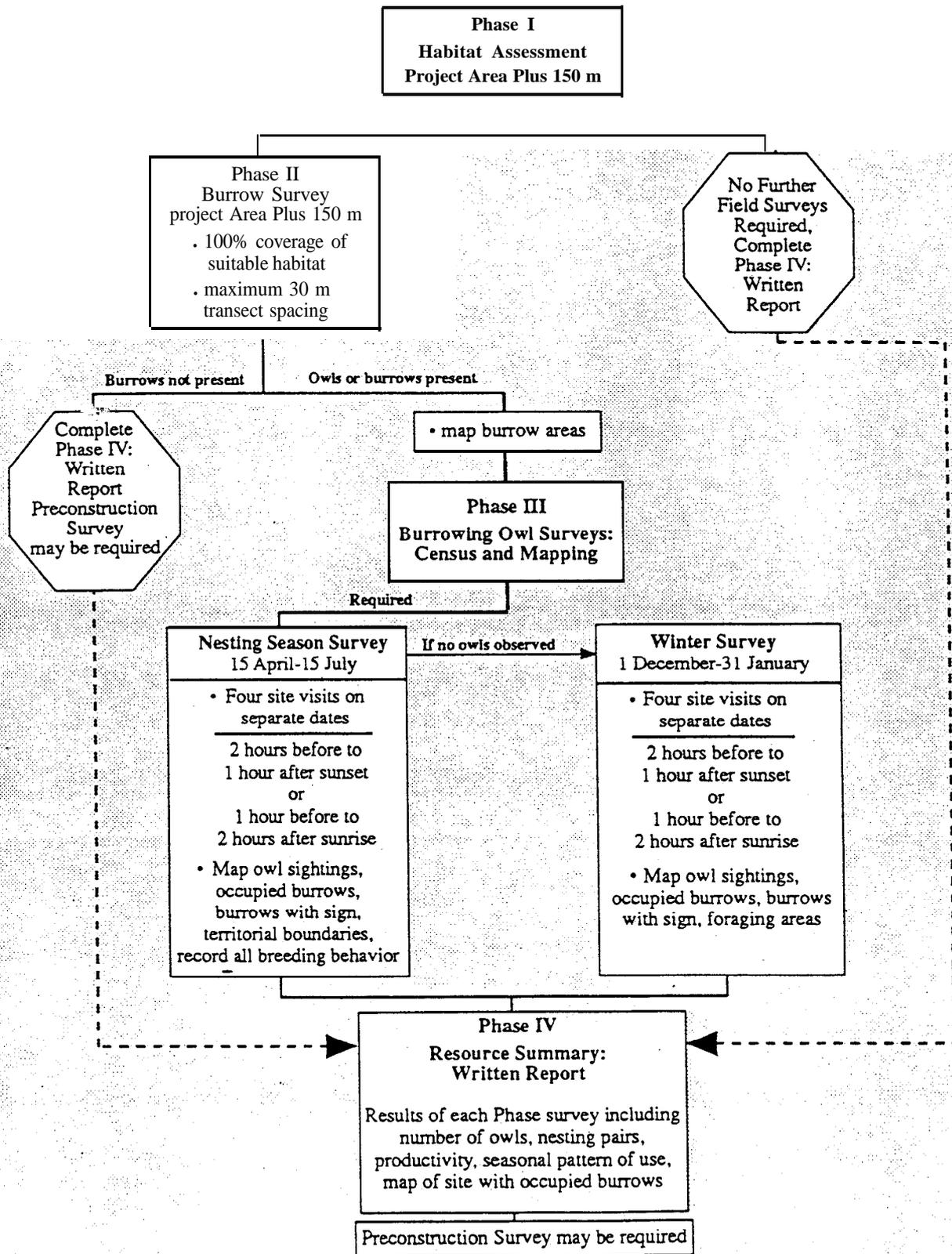


Figure 1.

## SECTION 2 BURROWING OWL MITIGATION GUIDELINES

The objective of these mitigation guidelines is to minimize impacts to burrowing owls and the resources that support viable owl populations. These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or their resources. The process begins with a four-step survey protocol (see *Burrowing Owl Survey Protocol*) to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures described below are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Mitigation actions should be carried out prior to the burrowing owl breeding season, generally from February 1 through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activity may vary with latitude and climatic conditions. Project sites and buffer zones with suitable habitat should be resurveyed to ensure no burrowing owls have occupied them in the interim period between the initial surveys and ground disturbing activity. Repeat surveys should be conducted not more than 30 days prior to initial ground disturbing activity.

### DEFINITION OF IMPACTS

1. Disturbance or harassment within 50 meters (approx. 160 ft.) of occupied burrows.
2. Destruction of burrows and burrow entrances. Burrows include structures such as culverts, concrete slabs and debris piles that provide shelter to burrowing owls.
3. Degradation of foraging habitat adjacent to occupied burrows.

### GENERAL CONSIDERATIONS

1. Occupied burrows should not be disturbed during the nesting season, from February 1 through August 31, unless the Department of Fish and Game verifies that the birds have not begun egg-laying and incubation or that the juveniles from those burrows are foraging independently and capable of independent survival at an earlier date.
2. A minimum of 6.5 acres of foraging habitat, calculated on a 100-m (approx. 300 ft.) foraging radius around the natal burrow, should be maintained per pair (or unpaired resident single bird) contiguous with burrows occupied within the last three years (Rich 1984, Feeney 1992). Ideally, foraging habitat should be retained in a long-term conservation easement.

3. When destruction of occupied burrows is unavoidable, burrows should be enhanced (enlarged or cleared of debris) or created (by installing artificial burrows) in a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.
4. If owls must be moved away from the disturbance area, passive relocation (see below) is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows.
5. The mitigation committee recommends monitoring the success of mitigation programs as required in Assembly Bill 3180. A monitoring plan should include mitigation success criteria and an annual report should be submitted to the California Department of Fish and Game.

## **AVOIDANCE**

### **Avoid Occupied Burrows**

No disturbance should occur within 50 m (approx. 160 ft.) of occupied burrows during the non-breeding Season of September 1 through January 31 or within 75 m (approx. 250 ft.) during the breeding Season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird (Figure 2).

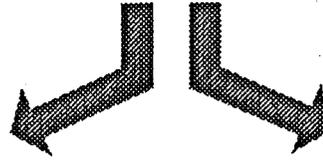
## **MITIGATION FOR UNAVOIDABLE IMPACTS**

### **On-site Mitigation**

On-site passive relocation should be implemented if the above avoidance requirements cannot be met. Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 m from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls (Figure 3). Relocation of owls should only be implemented during the non-breeding season. On-site habitat should be preserved in a conservation easement and managed to promote burrowing owl use of the site.

Owls should be excluded from burrows in the immediate impact zone and within a 50 m (approx. 160 ft.) buffer zone by installing one-way doors in burrow entrances: One-way doors should be left in place 48 hours to insure owls have left the burrow before excavation. One alternate natural or artificial burrow should be provided for each burrow that will be excavated in the project impact zone. The project area should be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags should be inserted into the tunnels

# AVOIDANCE



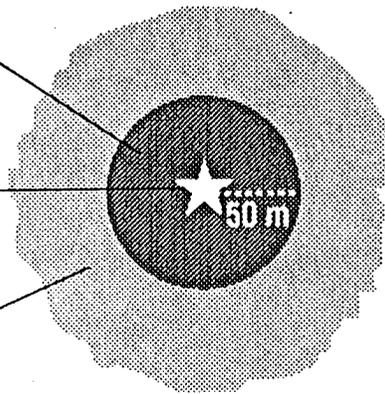
## Non-breeding season

1 Sept. - 31 Jan.

No impacts within  
50 m of occupied  
burrow

Occupied  
burrow

Maintain  
at least 6.5 acres  
foraging habitat



## Breeding season

1 Feb. - 31 Aug.

No impacts within  
75 m of occupied  
burrow

Occupied  
burrow

Maintain  
at least 6.5 acres  
foraging habitat

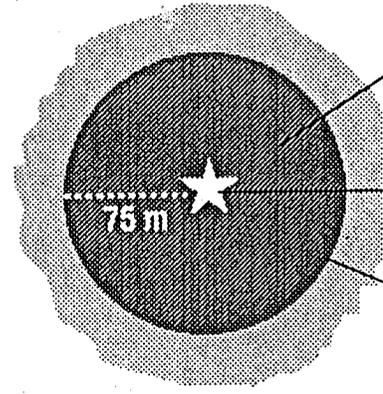


Figure 2. Burrowing owl mitigation guidelines.

## ON-SITE MITIGATION IF AVOIDANCE NOT MET

(More than 6.5 acres suitable habitat available)

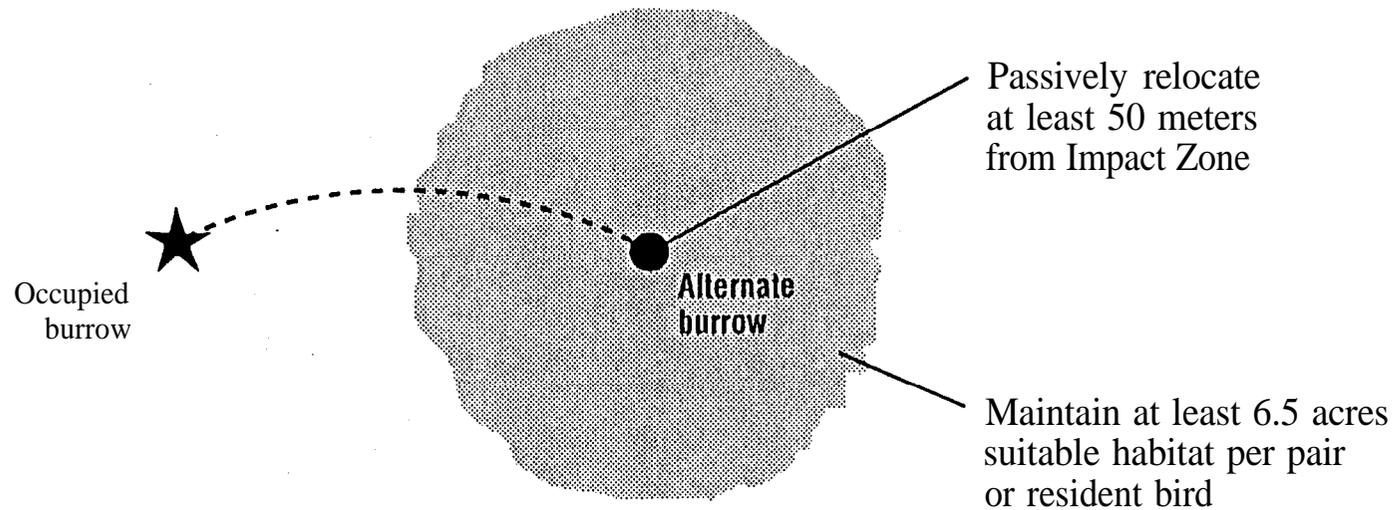


Figure 3. Burrowing owl mitigation guidelines.

during excavation to maintain an escape route for any animals inside the burrow.

### **Off-site Mitigation**

If the project will reduce suitable habitat on-site below the threshold level of 6.5 acres per relocated pair or single bird, the habitat should be replaced off-site. Off-site habitat must be suitable burrowing owl habitat, as defined in the *Burrowing Owl Survey Protocol*, and the site approved by CDFG. Land should be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation should use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.
2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.
3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

## SECTION 3 LEGAL STATUS

The burrowing owl is a migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter, any migratory bird listed in 50 C.F.R. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). Sections 3503, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 - August 15, annually). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend is considered “taking” and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g., MBTA).

The burrowing owl is a Species of Special Concern to California because of declines of suitable habitat and both localized and statewide population declines. Guidelines for the Implementation of the California Environmental Quality Act (CEQA) provide that a species be considered as endangered or “rare” regardless of appearance on a formal list for the purposes of the CEQA (Guidelines, Section 15380, subsections b and d). The CEQA requires a mandatory findings of significance if impacts to threatened or endangered species are likely to occur (Sections 21001(c), 21083. Guidelines 15380, 15064, 15065). Avoidance or mitigation must be presented to reduce impacts to less than significant levels.

### CEQA AND SUBDIVISION MAP ACT

CEQA Guidelines Section 15065 directs that a mandatory finding of significance is required for projects that have the potential to substantially degrade or reduce the habitat of, or restrict the range of a threatened or endangered species. CEQA requires agencies to implement feasible mitigation measures or feasible alternatives identified in EIR’s for projects which will otherwise cause significant adverse impacts (Sections 21002, 21081, 21083; Guidelines, sections 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a)).

To be legally adequate, mitigation measures must be capable of “avoiding the impact altogether by not taking a certain action or parts of an action”; “minimizing impacts by limiting the degree or magnitude of the action and its implementation”; “rectifying the impact by repairing, rehabilitating or restoring the impacted environment”; “or reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.” (Guidelines, Section 15.370).

Section 66474 (e) of the Subdivision Map Act states “a legislative body of a city or county shall deny approval of a tentative map or parcel map for which a tentative map was not required, if

it makes any of the following findings:... (e) that the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish and wildlife or their habitat". In recent court cases, the court upheld that Section 66474(e) provides for environmental impact review separate from and independent of the requirements of CEQA (Topanga Assn. for a Scenic Community v. County of Los Angeles, 263 Cal. Rptr. 214 (1989).). The finding in Section 66174 is in addition to the requirements for the preparation of an EIR or Negative Declaration.

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**U.S. FISH AND WILDLIFE SERVICE  
STANDARDIZED RECOMMENDATIONS  
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX  
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office  
January 2011

## INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

## IS A PERMIT NECESSARY?

**Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens.** Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process.

All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to any survey or monitoring work occurring.

### **SMALL PROJECTS**

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

**If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.**

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

### **OTHER PROJECTS**

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

### EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied <u>and</u> unoccupied)	Service must be contacted

**\*Known den:** To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**\*\*Potential and Atypical dens:** Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

## **DESTRUCTION OF DENS**

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection.

**Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.**

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

**Natal/pupping dens:** Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

**Known Dens:** Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

**The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

### **CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS**

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe

- may be moved only once to remove it from the path of construction activity, until the fox has escaped.
4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
  5. No firearms shall be allowed on the project site.
  6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
  7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.
  8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.
  9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
  10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is

disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.
12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.
13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.
14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division  
2800 Cottage Way, Suite W2605  
Sacramento, California 95825-1846  
(916) 414-6620 or (916) 414-6600

**EXHIBIT “A” - DEFINITIONS**

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Popping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

# **Appendix F – ITA and Cultural Resources Determinations**

## Inthavong, Michael T

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**From:** Rivera, Patricia L  
**Sent:** Thursday, October 07, 2010 10:18 AM  
**To:** Inthavong, Michael T  
**Subject:** RE: ITA Request Form (EA/IS-10-063)

Michael,

I reviewed the proposed action to aware Delano-Earlimart Irrigation District (DEID) with a 2010 WaterSMART Grant and a 2010 Field Services Grant to help the district fund the expansion of the existing Turnipseed Recharge Basin. The Proposed Action would include excavation of an 80-acre parcel and subsequent levee construction to create four 20-acre recharge cells. Up to 100,000 cubic-yards of soil would be excavated from the parcel, which would be used to build up the levees. Each cell, from bottom to top, would not exceed 7 feet in depth. In addition, two new flow meters would be installed in DEID's two turnouts off the White River.

As weather allows, construction for the Proposed Action would start as soon as permitted, take 4-6 weeks, and completed by late summer in 2011. Equipment to be used include: drill rig, scraper, excavator, bulldozer, and backhoe.

The proposed action does not have a potential to affect Indian Trust Assets. The nearest ITA is Tule River Reservation which is approximately 23 miles NE of the project location.

Patricia

## Inthavong, Michael T

---

**From:** Overly, Stephen A  
**Sent:** Tuesday, August 24, 2010 4:52 PM  
**To:** Inthavong, Michael T  
**Cc:** Barnes, Amy J; Bruce, Brandee E; Goodsell, Joanne E; Ramsey, Dawn; Nickels, Adam M; Perry, Laureen (Laurie) M  
**Subject:** RE: 09-SCAO-349.1 Section 106 Consultation Complete  
**Attachments:** 09-SCAO-349.1\_CASHPO\_Concurrence.pdf; 09-SCAO-349\_CASHPO\_Concurrence.pdf

09-SCAO-349.2

Michael,

As long as the project footprint is the same and the only thing that has changed is that Reclamation is adding yet another funding source, then the Section 106, NHPA consultation for 09-SCAO-349 and 09-SCAO-349.1 cover this supplemental action for the DEID Project.

Reclamation's subsidization of this project is already covered in the two earlier consultations and resulted in a no adverse effect determination and concurrence from SHPO (both attached). Therefore, the use of additional federal funds from another Reclamation source does not require another consultation. Please keep a copy of this e-mail and the concurrences with administrative record for this new action. Please notify us if the project changes again so that we may conduct additional cultural resources review and consultation, as necessary, with SHPO.

Thank you for providing the opportunity to comment.

Tony

Stephen (Tony) Overly, M.A. Archaeologist  
U.S. Bureau of Reclamation, Mid-Pacific Region  
2800 Cottage Way, MP-153  
Sacramento, CA 95825  
916-978-5552



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**From:** Inthavong, Michael T  
**Sent:** Tuesday, August 24, 2010 1:35 PM  
**To:** Overly, Stephen A  
**Cc:** Barnes, Amy J; Bruce, Brandee E; Goodsell, Joanne E; Ramsey, Dawn; Nickels, Adam M; Perry, Laureen (Laurie) M  
**Subject:** 09-SCAO-349.1 Section 106 Consultation Complete

Tony,

For project 09-SCAO-349.1, your concurrence covered not only the NEPA proposed action but also the eventual construction of the entire new 80-acre basin...well, DEID applied for and was awarded a WaterSMART grant for partial funding to construct the new 80-acre basin (which the NEPA for 09-SCAO-349.1 did not cover). Question: Can I use the same concurrence for this new expansion area (tentatively entered in my NEPA log as EA-10-63)?

I've attached the draft EA/IS that the district's consultant provided for reference.

Let me know if there's anything you need from me,  
Michael I

---

**From:** Overly, Stephen A  
**Sent:** Monday, August 02, 2010 2:37 PM  
**To:** Inthavong, Michael T  
**Cc:** Fogerty, John A; Barnes, Amy J; Bruce, Brandee E; Goodsell, Joanne E; Leigh, Anastasia T; Nickels, Adam M; Perry, Laureen (Laurie) M; Ramsey, Dawn  
**Subject:** 09-SCAO-349.1 Section 106 Consultation Complete

Hello Michael,

The proposed undertaking to provide federal appropriations to the Delano-Earlimart Irrigation District (DEID) through the American Recovery and Reinvestment Act (ARRA) and through Water for America Challenge Grant for the construction of the Turnipseed Groundwater Bank Project in Tulare County was determined to be the type of action that had the potential to affect historic properties.

As a result, Reclamation entered into consultation with the California State Historic Preservation Office (SHPO) on a finding of no adverse effect to historic properties pursuant to the regulations at 36 CFR Part 800.5(b). Reclamation received concurrence from SHPO on January 29, 2010 that the Phase 1 and Phase 2 of the project as a whole would result in no adverse effect to historic properties.

Since that time, Reclamation has been notified that DEID has added another component to the project that now includes additional modifications to the existing basin, modifications to the turnout at the channelized White River, and the addition of another 80 acre basin to the south. Modifications proposed to existing facilities include installation of new flow meters in DEID's 48 inch turnout off the White River, excavation and levee modifications to a portion of Cell 3 in the current recharge area, and the installation of a new 30 foot long pipeline in Cell 3. Additional work proposed for the new recharge basin involves installation of a 50 foot long pipe to transport water from the northern basin into the southern area, surface grading, and levee building to form chambers similar to those built in the northern basin.

Since these new actions enlarged the APE and had the potential to cause effects to historic properties pursuant 36 CFR Part 800.3(a), Reclamation reinitiated the Section 106 consultation process. Reclamation determined that the new area of potential effects (APE) totals another 85 acres encompassing the new 80 acre recharge basin, the areas subject to modification in the existing facility, and the staging and lay-down areas. Consulting archaeologists hired by DEID conducted a record search at the appropriate regional information center, contacted the Native American Heritage Commission, and individual tribal members, and completed a pedestrian survey of the entire APE on April 28, 2010, producing a report entitled, *A Cultural Resources Assessment for the DEID Turnipseed Groundwater Banking Project Supplemental Project Area, Tulare County, California* by RSO Consulting (2010). Reclamation consulted with the Tule River Indian Tribe regarding the Extension and Turnout Improvement Project, sending a letter on June 9th, 2010 to invite their assistance in identifying sites of religious and cultural significance pursuant to the regulations at 36 CFR 800.3(f)(2) and 36 CFR Part 800.4(a)(4).

Based in part on these identification efforts, Reclamation determined that the channelized White River comprised the only historic property in the APE and that the enlarged project still resulted in no adverse effect to historic properties pursuant to 36 CFR part 800.5(b). Reclamation submitted these findings on the revised project to SHPO on July 14, 2010 seeking concurrence on a finding of no adverse effect to historic properties. In a letter dated July 22, 2010 and received at Reclamation on July 27, 2010, SHPO concurred with Reclamation's finding that the project as a whole would result in no adverse effect to historic properties (attached).

After receiving the SHPO concurrence on Reclamation's findings, the Section 106 process is complete. Please retain a copy of this e-mail memo with the Administrative Record for this project. Please note that if project plans or actions change, this may require additional Section 106 consideration including consultation with the SHPO.

Thank you for providing the opportunity to comment.

Tony

Stephen (Tony) Overly, M.A. Archaeologist  
U.S. Bureau of Reclamation, Mid-Pacific Region  
2800 Cottage Way, MP-153  
Sacramento, CA 95825  
916-978-5552





**OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896  
SACRAMENTO, CA 94296-0001  
(916) 653-6624 Fax: (916) 653-9824  
calshpo@ohp.parks.ca.gov  
www.ohp.parks.ca.gov

BUREAU OF RECLAMATION  
OFFICIAL FILE COPY  
RECEIVED

JAN 29 2010

CODE	ACTION	SURNAME & DATE
150	✓	S. O. [unclear] 2-4-10

January 26, 2010

In Reply Refer To: BUR100125A

Michael A. Chotkowski  
Regional Environmental Officer  
United States Department of the Interior  
Bureau of Reclamation  
Mid-Pacific Regional Office  
2800 Cottage Way  
Sacramento, CA 95825-1898

Re: Delano-Earlimart Irrigation District (DEID) Turnipseed Groundwater Bank Project, Tulare County, California (Project No. 09-SCAO-349).

Dear Mr. Chotkowski:

Thank you for consulting with me regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (BUR) is the lead Federal agency for this undertaking and is seeking my comments on the effects that the proposed project will have on historic properties. The BUR is proposing to provide a Water for America Challenge Grant and funds from the American Recovery and Reinvestment Act (ARRA) to the DEID for construction of the Turnipseed Groundwater Bank Project in Tulare County. The BUR has identified this use of federal funds as an undertaking pursuant to review under Section 106 regulations.

The BUR has determined that the area of potential effects (APE) consists of the entirety of the existing 80-acre recharge basin that will be converted to a recharge/extraction facility under this project and adjacent areas totaling an additional five acres. The undertaking will consist of the following elements: Phase I; drilling of one extraction well and five monitoring wells, Phase II; drilling of three extraction wells and the excavation of the basin by approximately one foot to both deepen the basin and raise the surrounding berms (with excavated soil). In addition to your letter of January 21, 2010, you have submitted the following document as evidence of your efforts to identify and evaluate historic properties in the APE:

- A Cultural Resources Assessment for the DEID Turnipseed Groundwater Banking Project, Tulare County, California (Rebecca S. Orfila, RSO Consulting: November and December 2009).

Efforts to identify historic properties in the APE have concluded there is one historic property within the proposed project location, the existing channelized White River.

Classification ENV 300  
Project 214  
Control No. 1000 6269  
Folder No. 1114340  
Date Input & Initials 1-29-2010 [initials]

which bisects the recharge basin. The White River, originally a meandering Central Valley watercourse, now functions essentially as an irrigation canal due to its restriction to a straightened, levee-restricted channel, and has existed in this configuration for over 50 years. Currently lacking the resources to fully document this linear water conveyance structure, the BUR has proposed to assume that it is eligible, for the purposes of this undertaking only, for the National Register of Historic Places under criterion A for its significance in the development of irrigated agriculture in this portion of the San Joaquin Valley. Based on this strategy, the BUR has concluded that the project as designed will have no adverse effect to the qualities of this channelized section of the White River that would impart eligibility for the NRHP, and that a finding of No Adverse Effect is appropriate pursuant to 36 CFR Part 800.5(b).

After reviewing your letter and supporting documentation, I have no objection to your finding of No Adverse Effect. Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the BUR may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist, at phone 916-654-4614 or email [wsoule@parks.ca.gov](mailto:wsoule@parks.ca.gov).

Sincerely,

*Susan H Stratton for*

Milford Wayne Donaldson, FAIA  
State Historic Preservation Officer

**OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION**

1725 23<sup>rd</sup> Street, Suite 100  
SACRAMENTO, CA 95816-7100  
(916) 445-7000 Fax: (916) 445-7053  
calshpo@parks.ca.gov  
www.ohp.parks.ca.gov



July 22, 2010

In Reply Refer To: BUR100715A

Michael, A. Chotkowski  
Regional Environmental Officer  
United States Department of the Interior  
Bureau of Reclamation, Mid-Pacific Regional Office  
2800 Cottage Way  
Sacramento, CA 95825-1898

CS-1 119  
JUL 27 2010

BUREAU OF RECLAMATION OFFICIAL FILE COPY		
CODE	ACTION	SURNAME & DATE
153		Stine 7-27-10
153		L Perry 7/27/2010

Re: MP-153, ENV-3.00; Delano-Earlimart Irrigation District (DEID) Turnipseed Groundwater Recharge Basin Extension and Turnout Improvement Project, Tulare County, California (Tracking #09-SCAO-349.1)

Dear Mr. Chotkowski:

Thank you for consulting with me regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (BUR) is the lead Federal agency for this undertaking and is seeking my comments on the effects that the proposed project will have on historic properties. The BUR proposes to grant funding to the DEID for the Turnipseed Groundwater Recharge Basin Extension and Turnout Improvement Project.

The undertaking will involve the grant funding for several alterations and constructions relating to groundwater recharge basins. The existing basin and the turnout at the channelized White River will both be modified. Another 80 acre basin of similar design to the one approved January 26, 2010 by this office to the north will be constructed to the south of the previous basin. This will include installation of new flow meters in DEID's 48-inch turnout off the White River, excavation of Cell 3 of the current recharge area, and the installation of a new 30-foot long pipeline in Cell 3. Additional work proposed for the new recharge basin involves installation of a 50-foot long pipe to transport water from the northern basin into the southern area, surface grading, and levee building to form chambers similar to those built in the northern basin.

The Area of Potential Effects has been identified as approximately 85 acres south of the existing recharge basin, encompassing the new 80 acre recharge basin, the areas in the existing facility to be modified, and the staging and lay-down areas. You have submitted in addition to your letter of July 14, 2010, the following document as evidence of your efforts to identify historic properties in the APE:

- A Cultural Resources Assessment for the DEID Turnipseed Groundwater Banking Project Supplemental Project Area, Tulare County, California (Rebecca Orilla and Linda Baker; RSO Consulting; May 2010)

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Project	214
Control No.	10055427
Folder I.D.	1114652
Date Input & Initials	7-27-10 B

Identification efforts included a records search at the Southern San Joaquin Valley Information Center and a pedestrian survey of the APE. No previous surveys have been conducted within one mile of the project area. No sites have been previously recorded within the APE. RSO Consulting contacted the Native American Heritage Commission for a Sacred Lands Search and contacted the Santa Rosa Rancheria, Ryan Garfield, Kathy Morgan, David Laughinghorse Robinson, Ron Wermuth, Donna Begay, Frank Arredondo, and Delia Dominguez. BUR consulted with the Tule River Indian Tribe in a letter sent out on June 9, 2010.

Efforts to identify historic properties in the APE have concluded there is one historic property within the proposed project locations, the existing channelized White River, of which a turnout will be modified with the installation of new flow meters; however, the White River itself will not be affected. The White River originally a meandering Central Valley watercourse, now functions essentially as an irrigation canal due to its restriction to a straightened, levee-restricted channel, and has existed in this configuration for over 50 years. Currently lacking the resources to fully document this linear water conveyance structure, the BUR has proposed to assume that it is eligible, for the purposes of this undertaking only, for the National Register of Historic Places under criterion A for its significance in the development of irrigated agriculture in this portion of the San Joaquin Valley. Based on this strategy, the BUR has concluded that the project as designed will have no adverse effect to the qualities of this channelized section of the White River that would impact eligibility for the NRHP, and that a finding of No Adverse Effect is appropriate pursuant to 36 CFR 800.5(b).

The APE has been seasonally washed by the flow of Terwer Creek. This has likely re-deposited soils and eroded many cultural resources out of the APE. No resources were located during investigation of cut banks.

Pursuant to 36 CFR 800.5(c)(1), I have no objection to your finding of No Adverse Effects. Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, especially for contamination mitigation if necessary, the BUR may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact Trevor Pratt of my staff at phone 916-445-7017 or email [tpratt@parks.ca.gov](mailto:tpratt@parks.ca.gov).

Sincerely,

*Susan K Stratton for*

Milford Wayne Donaldson, FAIA  
State Historic Preservation Officer

**The Office of Historic Preservation has moved to a new location as of July 14, 2010. The new address for the office is 1725 23rd Street, Suite 100, Sacramento CA 95816. Please update your records accordingly. The entire office also received new phone numbers, and those numbers are posted on our website at [www.ohp.parks.ca.gov](http://www.ohp.parks.ca.gov)**