KERN WATER BANK
VEGETATION MANAGEMENT PLAN

The purpose of this plan is to describe cost effective vegetation management and restoration practices for the long-term adaptive habitat management and enhancement of the Kern Water Bank. The primary practices under evaluation are: 1) annual and bi-annual mowing, 2) livestock grazing, and 3) prescribed burning. Seeding and planting will be one method considered for erosion control and habitat restoration.

The KWBA will carry out adaptive vegetation management activities on the Kern Water Bank throughout the life of its permits (75 years), and longer if permits are renewed. Protection of existing and newly established sensitive habitats is a high priority for long-term management. Vegetation management of compatible habitat using effective low-cost, adaptive methods is a priority and will continue as specified in annual management plans. Exotic pest plant control is also an important long-term management activity that will be carried out at the KWB.

This management plan is divided into three sections. The first section describes the general cost effective vegetation management practices for use throughout the Kern Water Bank; the second section describes specific methods for enhancement of wetland, sensitive, and compatible habitat; and the third section describes a demonstration program for large scale experimentation with the methods identified in the first section.

I. VEGETATION MANAGEMENT

A. Goals and Objectives

The vegetation management program prescribed for the Kern Water Bank will take a "working with nature approach". Goals of the Vegetation Management Plan are to:

1) Use adaptive management techniques for operations and habitat management which will contribute to the recovery and management of state and federally listed species, and "self-mitigation" of KWB impacts,

2) Establish and maintain intermittent wetland habitat in appropriate locations on recharge basin banks, islands, and canals,

3) Determine and define vegetation management practices for levees and roads, including the need to increase the vegetative cover on roads, road setbacks and levees to reduce erosion, and substantially decrease annual maintenance costs, and to make the desired vegetation cover on levees and roads suitable as habitat or a movement corridor for target species.

4) Specify strategies for control of Russian thistle (*Salsola tragus*) and other invasive exotic pest plants,

5) Provide for erosion control,

6) Control trespass and vandalism that may damage conservation values,

7) Monitor and assess effects on vegetation from recharge basin flooding and drying, and

8) Document successes and failures to help guide future management activities.

Actual treatment for each area will depend on soil disturbance history, existing vegetation, target vegetation, and operational maintenance programs. Restoration of compatible and sensitive areas will focus on enhancing habitat values for the listed species with documented occurrences on the Kern Water Bank as well as other covered species which have the potential to expand into the habitat areas. Restoration of habitat for these species will also benefit other upland species that may occur on the Kern Water Bank, or in nearby locations.

Vegetation types to be managed, enhanced or restored are non-native grassland, saltbush scrub (including mule fat scrub and great valley mesquite scrub), valley sacaton grassland, riparian, and freshwater marsh.

B. Management of Kern Water Bank Facilities

1. New Canal and Levee Construction

Canals are used to convey water between water sources and recharge basins. Levees are structures built to contain water in recharge basins. Newly constructed levees and canal banks will, where applicable, be seeded with grass and shrub seed mixtures upon completion of final grade. KWBA may also put gravel on the levee tops in lieu of and/or in addition to seeding. The grasses may be established by: 1) mechanically tracking seeds using the cleat tracks of a bulldozer, 2) hydro-seeding with a mechanical seeding apparatus, or 3) using herded sheep and/or cattle to track seed. All of the aforementioned techniques will be conducted in the winter months. Erosion control shall be accomplished by broadcasting or straw-blowing clean straw or native grass hay over the newly seeded areas. Native grasses that will be applicable for this application include creeping wild rye (*Leymus triticoides*) and cucamonga brome (*Bromus arizonicus*). Additional species will be specified based on the results of the ongoing studies, with an emphasis on species that would naturally be present, and the use of local stock when possible.

2. Road and Levee Maintenance

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. This maintenance represents significant financial investment for the KWBA. For instance, replacement of gravel on roads costs $12,000 per mile, and road and levee grading costs range from $400 to $500 per mile. The alternative to grading road setbacks and levees is to allow vegetation to grow on the setback and mow the vegetation to about 4 inches. Mowing is estimated to cost $45 per mile.

Vegetation removal from roadways, turnouts, interbasin structures, road crossings and control structures will be accomplished by burning, motor grading, mowing 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, 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 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, listed kangaroo rats, 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 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 herein, while the Interim Measures are in effect. Thereafter, KWBA shall comply with all applicable laws, rules and regulations regarding pesticide uses. If take of covered species occurs as a result of pesticide use, KWBA will enter into consultation with the Resource Agencies and CDPR to determine ways to minimize and/or avoid such take.

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 (*Cyndon*

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 waters edge of existing basins. Native plants currently inhabiting the roadside edges and setbacks include salt grass (*Distichlis spicata*) creeping wild rye (*Leymus triticoidaes*) big salt bush (*Atriplex lentiformus*) 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 during the late spring 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.

The use of vegetative cover including native grass seed will provide a mat of vegetation that can withstand occasional vehicular impact and reduce invasion of weedy species, particularly Russian thistle. Native grasses that will be applicable for this application include creeping wild rye (*Leymus triticoides*) and cucamonga brome (*Bromus arizonicus*).

Much of the damage to roads occurs in the winter when roads are wet. Discouraging travel on wet muddy roads can reduce costs of regrading roads and regraveling.

3. Recharge Basin Bottom Management

The presence of dense vegetation in the recharge basin bottoms limits hydraulic capacity and therefore some vegetation removal may be necessary. It is important that techniques used to remove vegetation not impact the ability of the recharge basins to recharge water. Discing and use of heavy equipment is not recommended unless absolutely necessary because these procedures may reduce water recharge rates. Mowing, grazing and burning are the preferred methods. However the use of livestock grazing may result in the compaction of soils if livestock are allowed to stay in the

recharge basins for an extended period of time. Therefore, if grazing is proposed, grazing frequency, density, and duration will be tested as a means to control vegetation in recharge basin bottoms.

C. Treatment Strategies for Weed Control and Habitat Enhancement

1. Exotic Pest Plant Control

Exotic pest plants are prevalent throughout the Kern Water Bank. There are four strategies for exotic weed control: prescribed burning, mowing, grazing, and herbicide spraying. The goal of all strategies is to decrease weed seed production and plant biomass.

a. Prescribed Burning

Prescribed burning is a common method used to reduce annual grasses and weeds. The grasses and weeds that colonize may create management problems due to biomass production and also create conditions conducive to mosquito production. On fallow farmland annual grasses and weeds inhibit native plant regeneration. Recent research conducted by The Nature Conservancy (Jepson Preserve) and others, describe the benefits of well-timed burning for native plant recruitment and annual grass control. The burning eliminates the decadent weed biomass, destroys the weed seed bank, and increases germination and survivorship of late germinating native annuals that require warm, barren soil for germination. Burning is best conducted in the spring as the vegetation becomes dry, and is most effective prior to seed dispersal.

b. Mowing

Mowing shall 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 in most annual plants. Mowing will be scheduled to coincide with dry, hot weather of the late spring 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. Mowing shall coincide with dry, hot weather when soil moisture has decreased. Typical equipment to be used for mowing will be a tractor mounted flail or rotary mower. An offset hydraulic arm mounted flail mower type of equipment can also be used for steep levees, roads, and canal banks.

c. Grazing

Intensive livestock grazing in areas other than recharge basin bottoms can be an effective vegetation management tool at the Kern Water Bank as it can be used to: 1) decrease annual grass and weed seed production, 2) provide for soil compression for germinating native species, and 3) impact overgrown exotic vegetation.

d. Herbicide Spraying

Some exotic pest plants will require selective herbicide spot spraying. Examples of these are: acacia (*Acacia* spp.), tree tobacco (*Nicotiana glauca*), and Bermuda grass (*Cynodon dactylon*). Herbicide spraying for weed control around existing pump stations, utilities, and control structures is required for KWBA fire protection, inspection, operation and maintenance. All herbicide spraying shall be done using best application practices, and in accordance with State and County laws and regulations. Herbicide applications will not be performed in any areas that contain listed plant species, rather hand weed control methods will be used in these areas.

e. Russian Thistle Control

Russian Thistle (*Salsola tragus*) is a summer annual broadleaf weed commonly found in many of the low precipitation cropland areas of the Western United States. This weed causes serious production problems in croplands, following harvest, and during summer fallow. Russian thistle creates blockage in flood gates and canals.

Management strategies for Russian thistle will focus on preventing seed production, and reducing infestations to manageable levels. There are a number of important biological traits that need to be considered in developing Russian thistle management strategies. Most newly-produced Russian thistle seeds are dormant for a short period of time after maturity in the fall. Seed dormancy increases over winter and is almost nonexistent by spring, allowing germination to occur over a wide range of temperature and moisture conditions. Most seeds are warm soil dependent and germinate later in the spring.

Research indicates that Russian thistle seed viability in the soil declines greatly within two years, especially under moist conditions. Russian thistle seed is soft and porous. These characteristics contribute to its lack of longevity and ability to germinate rapidly. Management strategies that focus on preventing seed production are effective, due to both limited seed dormancy and longevity.

Russian thistle has a unique mechanism for increasing the area of infestation. Mature plants break at the ground level and tumble with the wind to disperse seeds. A layer of cells where the plant is connected to its roots enables plants to break away with the wind during winter months after seeds are mature. Because undisturbed Russian thistle can produce 150,000 to 200,000 seeds and seed distribution is rapid and widespread, there is a high potential for future infestations.

Russian thistle seeds require only a short moist period to permit rapid germination and emergence from the soil. Russian thistle can emerge in significant numbers in disturbed soils after very light rain (about 0.1 inch) on dry soil. Germinating seeds can also withstand several wetting and drying cycles until there is sufficient moisture for emergence and establishment.

Optimum temperature for Russian thistle germination ranges between 45 and 95 degrees F. Seeds can germinate under cooler conditions when night temperatures are below freezing. However, young seedlings are very susceptible to frost. Emergence typically begins late March and early April, extending through the summer when sufficient precipitation occurs.

Flowering begins around mid-June. To prevent seed production and reduce weed competition of Russian thistle grazing and/or mowing within 4 weeks after emergence will be the most effective. Flowering increases greatly after crop harvest, when approximately 90% of the Russian thistle growth and seed set occur. Russian thistle is indeterminate, therefore it continues to flower and produce seed as long as conditions allow. They will continue to thrive until a killing frost or several successive frosts just below freezing occur.

There are four treatment practices recommended for Russian thistle control:

1) Reduce Russian thistle seed production and seedbank in the soil.
2) Reduce wind and water erosion potential.
3) Increase plant cover and natural regeneration.
4) Decrease barren disturbed soil areas.

Competitive Exclusion. Growing a competitive crop is a very important management tool to reduce Russian thistle growth and seed production. Growth of Russian thistle is suppressed greatly when the revegetation crop establishes first, over-tops the weed, and has adequate moisture and nutrients. Planting a sustaining native perennial grass cover of Creeping wild rye (*Leymus triticiodes*) or others and decreasing soil disturbance activities will inhibit Russian thistle from establishing.

Managing Bare Soil Areas. Maintaining enough vegetation on the soil surface to control Russian thistle invasion is a concern for KWBA. The barren, disturbed soils associated with annual road grading and canal maintenance are the primary vectors for Russian thistle spread. Sparse ground cover will be used where appropriate, to reduce Russian thistle invasion.

Managing Levees and Roadways. Russian thistle will be controlled along roadways and levees upwind from disturbed soils to prevent introduction or reinfestation. Due to the high mobility of Russian thistle skeletons in the wind and extensive seed distribution potential, an area-wide control strategy is needed to achieve and maintain effective control. Unless Russian thistle dispersal is controlled, it is difficult to manage this weed.

Repetitive Tillage. In areas where large monocultures of Russian thistle have invaded, repetitive tillage during the summer fallow season will reduce and destroy emerging plants prior to seed production. Repeating fallow tillage operations will prepare areas for future revegetation with native grass and herbaceous plants.

Chemical Control. Where herbicide treatment for Russian thistle is planned, the application will target plants less than 2 inches in height. The first Russian thistle plants that emerge will be the most competitive. Spot spraying with herbicide such as Round-up or Rodeo is a method considered by the KWBA.

Grazing. Cattle relish Russian thistle in the summer months just prior to the flowering period. Grazing is considered a viable management option for Russian thistle control.

2. Ground Squirrel Control

California ground squirrels (*Spermophilus beecheyi*) represent a serious management problem for levee and canal side banks. Ground squirrel burrowing activities cause soil erosion and potential bank failure. One method under consideration to decrease the loose soils associated with ground squirrel activity is to use animal compaction. High numbers of sheep may be contained for a short period on the burrow mounds during the rainy season. The lightly disturbed soils can then be seeded with herbaceous plants. The compaction of the soils and simultaneous seeding will decrease the likelihood of bank failure and erosion. Use of pesticides for ground squirrels will only be done in compliance 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 herein, while the Interim Measures are in effect. Thereafter, KWBA shall comply with all applicable laws, rules and regulations regarding pesticide uses.

3. Sediment Removal and Erosion Control

Sediment build up in canals and recharge basins must be removed to maintain adequate flow and water capacity in canals and to maintain good percolation in the recharge basins. Sediment is typically removed mechanically with an excavator. To minimize transport costs of disposal, the loose soil sediments are typically placed on or near levees and canals. When feasible, islands in the recharge basins will be constructed from the spoil of the removal process. If this practice is to continue, the newly placed soils will be compacted onto the levee side slopes and tops where appropriate in areas that are not known to support kit fox dens, Tipton kangaroo rat burrows, blunt-nosed leopard lizards or burrowing owl holes. Hay mulch may be applied to the bare slopes and seeding would occur at the proper time of year as appropriate. The elimination of bare soil conditions will decrease erosion. In addition, establishing marsh vegetation at the head of stream flow patterns will filter water and reduce sediment transport through the system.

Water conveyance structures and control devices require periodic erosion control protection measures. Concrete riprap is typically used near the structures to prevent excessive erosion. Sidebank blowouts near conveyance structures shall be refilled and revegetated where appropriate.

II. HABITAT ENHANCEMENT

A. Managment Goals

For habitats managed for conservation purposes under this HCP, an initial goal of vegetation management shall be to maintain, and where appropriate to enhance and/or establish, the vegetation communities found on the Kern Water Bank and the surrounding area. An initial, qualitative goal of adaptive vegetation management shall be to approximate the structure and species composition of nearby occurrence of these habitats that are considered to be of high quality.

The Annual Management Plan shall include management goals determined by mutual agreement between KWBA and the Resource Agencies. These management goals shall be used to assess the effectiveness of vegetation management and shall be used as indicators of the need to apply or alter adaptive management practices. The management goals shall be reviewed annually by KWBA and the Resource Agencies in preparation of the subsequent Annual Management Plan, and may be revised by mutual agreement of the Parties.

Only a few of the Covered Species are now known to exist on the Kern Water Bank. KWBA and the Resource Agencies expect that over the life of the permits additional Covered Species may come to occupy the Kern Water Bank. As KWBA and the Resource Agencies learn about new Covered Species occupying the Kern Water Bank and come to understand what attracted the species to the Bank, KWBA and the Resource Agencies will endeavor to shape adaptive management practices 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.

B. Wetlands

Fresh water marsh habitat is best developed in areas containing nutrient-rich saturated soils and in locations with slow-moving water. Marsh species are rapid colonizers, respond to seasonal inundation, and are often associated with riparian woodlands. The City of Bakersfield "2800 acre" recharge area 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.).

Native species regenerating in the moisture rich littoral zone of the recharge basins include willows (*Salix* spp.), common spikerush (*Eleocaris macrostachya*), common tule (*Scirpus californica*), creeping wild rye (*Leymus triticiodes*), salt grass (*Distichis spicata*), and Juncus (*Juncus balticus*). Numerous species of exotic pest plants occur as the soil moisture in the recharge basins decrease. The resulting vegetation is described as ruderal grassland. Common annual grasses include oats (*Avena sativa*), rescue grass (*Bromus catharticus*), red brome (*B. madritensis*), cheatgrass (*B. tectorum*), hare barley (*Hordeum murinum* ssp. *leporinum*), and rat tail fescue (*Festuca megalura*).

Weeds are found throughout dry recharge basin areas. Horseweed (*Conyza canadensis*), lowland cudweed (*Gnaphaleum palustra*), common sowthistle (*Sonchus oleraceus*), and fiddleneck (*Amsinkia menziesii*) are prevalent.

In recharge basins with greater variation of microtopography and where seasonal moisture is retained, riparian habitat will emerge. The common and conspicuous trees predicted to naturally regenerate are Fremont cottonwood (*Populus fremontii*), yellow willow (*Salix lasiandra*), and red willow (*Salix laevigata*). Other species historically found on the banks of the Kern river are Oregon ash (*Fraxinus latifolia*), button willow (*Cephalanthus occidentalis* var. *californica*), big leaf maple (*Acer californica*), and Sycamore (*Platanus racemosa*).

Management programs under consideration for fresh water marsh habitat will be dependent upon analysis and selection of suitable marshland habitat within the recharge basin system. Placement of the marshland will be determined by availability of water.

C. Compatible Habitat Vegetation Management

The compatible habitat vegetation management will focus on habitat management for covered species. Preferred habitats consist of valley sacaton grassland, saltbush scrub, riparian, non-native grassland, and riparian. Test plots will be created and monitored to determine vegetation response to selected management programs such as mowing, grazing, and burning. Success criteria and monitoring will be implemented to assess the effectiveness of habitat improvement measures to maintain quality habitat for the San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, and other species associated with upland habitat.

Common native plant species associated with dry alkaline sinks include: iodine bush (*Allenrolfea occidentalis*), allscale (*Atriplex polycarpa*), and spinescale (*Atriplex spinifera, A. lentiformus, A. phyllostegia*). Valley desert grasslands contain a diversity of wildflowers, some of which are found in isolated remnant native habitat on the Kern Water Bank. Further study is needed to assess historic grassland species composition and identify the physical and ecological characteristics.

A demonstration program will be conducted to determine vegetation response to selected management programs such as mowing, grazing, and burning. Success criteria and monitoring will be implemented to assess the effectiveness of habitat improvement measures to maintain quality habitat. After completion of the demonstration study, cost effective methods will be used on an as needed basis throughout the compatible habitat. The location and area treated each year will be described in the annual management plan to be reviewed by the USFWS and CDFG. During the course of the demonstration study, a goal will be to maintain or increase covered species utilization and habitat quality in the Compatible Habitat, Sensitive Habitat and Conservation Bank.

D. Sensitive Habitat Vegetation Management

The sensitive habitat to be managed is comprised of historic upland native vegetation and non-farmed locations of the KWB. Sensitive habitats include sparse vegetation with scattered grasses and shrubs. Native shrubs such as saltbush (*Atriplex* spp.), goldenbush (*Happlopappas racemosa*), and iodine bush (*Allenrolfea occidentalis*) are widely scattered over poor, thin soils. Grasses historically associated with sub-alkaline soils of this region are: alkali sacaton (*Sporobolus airoides*), nodding needle grass (*Nassella cernua*), salt grass (*Distichlis spicata*), and creeping wild rye (*Leymus triticoides*). The habitat is suitable for the occurrence of the endangered San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard and San Joaquin woolly-threads and the threatened Hoover's woolly-star.

The objective of the management activities for sensitive habitat will be to attempt to control the spread of invasive exotic plant species, maintaining or enhancing the existing habitat quality of the native plant and animal communities, and fencing or signing to protect particularly sensitive resources in the area. Access will be allowed to biologists who are sponsored by either CDFG or USFWS to monitor populations of covered species. Other activities may take place as recommended by CDFG or USFWS in their comments on the KWB annual management plan.

III. FIVE-YEAR DEMONSTRATION PROGRAM

A. Introduction

The purpose of the vegetation management demonstration program is to determine the best methods for vegetation management and restoration of KWBA lands which will improve covered species utilization. Monitoring protocol, performance standards, and adaptive management programs will be prescribed in order to meet vegetation and habitat management goals. Cost analysis of the demonstrations will be compiled to project future costs of annual vegetation management programs. The day to day operations of the KWB will largely define the study program parameters. For example, road maintenance, recharge basin management, and erosion control are operational activities that will be monitored and assessed for benefits to wildlife and changes in vegetation. The monitoring program and performance standards will be developed by KWBA, in consultation with the resource agencies over the course of the demonstration program. Professional review other than resource agency staff or KWB contractors will be sought as part of the development of these plans. These plans may be revised by mutual agreement of the KWBA and the resource agencies.

The study program will provide information regarding best practice vegetation management. The monitoring and reporting will determine alternative vegetation management based on the relative success or failure of the prescribed management. Adaptive management will focus on implementation costs, efficacy of exotic plant control, and levels of success or failure of the prescribed management. If prescribed

management programs fail to achieve desired results, alternative management will be prescribed. Final recommendations pertaining to long-term KWBA management prescriptions will be based on the results of the monitoring program. The sites planned for the demonstration program are shown on Map 5 (Vegetation Management Study Plan).

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. If desired thresholds of success are not achieved, then further study may be required. The following study plan elements will be implemented on the Kern Water Bank. Success of each study program will be determined when positive trends of the following criteria are achieved.

1. Density of vegetation is conducive for listed species.
2. Ground cover is established which controls exotic pest plants.
3. Native plant and animal species are encouraged

B. Analysis of Results of Habitat Improvement Trials on DWR Mitigation Parcel

Habitat enhancement activities were conducted by DWR on the DWR mitigation parcel in January and November of 1993. Enhancement activities included creation of microtopography, introduction of native grasses and forbs, and control of tumbleweed. The goal of the improvement trials was to enhance mitigation lands for listed species. DWR conducted a preliminary evaluation of the trials on October 5, 1995. Initial efforts to restore desert shrub habitat were mostly unsuccessful. Final results of the improvement trials will be analyzed in 1997 to determine the feasibility of continuing the prescribed vegetation enhancement program on the subject parcel as well as at other locations on the Kern Water Bank.

C. Selection of Study Sites and Monitoring Protocol

Demonstration program study sites will be identified and mapped using KWBA baseline information. Locations for management demonstrations include: areas historically occupied by listed species, compatible habitat areas, sensitive habitat, DWR habitat improvement areas, and roadway and levee areas.

Prior to implementing the vegetation management demonstrations, the existing pre-management site conditions baseline data will be determined. The vegetation will be described in terms of vegetation type, vegetation components, soil, drainage, and other physical characteristics. Photo documentation will be recorded from a permanent datum location. Vegetation analysis will occur over a timespan of four months, beginning in March of 1997.

There will be a five year monitoring period during which time progress and results of the program will be observed and documented. The monitoring program will seek to document and qualify the trends, success or failure, and value of each related management activity. If stated thresholds of success or measure of trend is not achieved within the five year monitoring program, adaptive management and alternative management programs will be incorporated into the study program.

An annual report describing the results of the demonstration study will be submitted by KWBA to the FWS, and DFG. The report will include: 1) observational and analytical data, 2) photo documentation, 3) notes pertaining to the success or failure of the restoration activities, and 4) future management recommendations.

D. Specific Demonstration Studies

1. Prescribed Burning

The purpose of the prescribed burn demonstration is to determine the efficacy of prescribed fire on the reduction of annual grasses and weeds.

An approximately 90 acre area will be tested for prescribed fire management of recharge basin bottoms and levees. The site is located in the southwest quarter of Section 9 (see Figure 5). The timing of the burn demonstration will be in the late spring, prior to shatter of annual grass seeds. Burning will be conducted upon approval of the local Air Quality Control District.

The following are the tasks needed to complete the prescribed burn demonstration study:

1) Select suitable recharge basins that represent vegetation to be managed.
2) Demarcate test plot areas and control.
3) Survey and analyze vegetation.
4) Describe physical characteristics.
5) Develop burn plan components.
6) Implement controlled burn program.
7) Monitor and evaluate burn.
8) Analyze per acre costs.
9) Reporting and final recommendations.

Answers to the following questions will help determine the success of the prescribed burn study: 1) how much reduction is there in annual grass and herbaceous weed composition?, 2) is there good recruitment of native plant and animal species?, and 3) has habitat improved for listed species?

The method for analyzing the results of the burn demonstration include preliminary vegetation analysis and subsequent post treatment analysis. An untreated

plot shall serve as a control. Permanent photo documentation stations will be established at each plot.

Monitoring of this activity shall include data collections and field observations. If preliminary results of the burn program do not meet anticipated thresholds of success, then the timing of the burn may be adjusted. Also, if necessary, relative biomass shall be controlled by pre-burn mowing and/or grazing.

2. Grazing Study

The purpose of the grazing demonstration is to determine the efficacy of livestock grazing on the reduction of annual grasses and weeds, control of Russian thistle, and re-vegetation of native plants and grasses using animal impact. The study will help determine the most effective grazing management strategy by answering the following questions: 1) when is the best time to graze? 2) what kind and how many animals per acre should be used? 3) what is the most appropriate size of a grazing area?, and 4) what impacts do grazing animals have on listed species and native vegetation?

The livestock grazing program will begin in February and continue through summer, ending in August. Sheep or cattle are considered for the grazing program

A livestock grazing management plan will be developed which defines water sources, facilities, lease arrangements, costs, and management goals. In addition to controlling weed growth, cattle will be used as a means to distribute native plant seeds throughout the area. Direct seeding may occur prior to withdrawal of cattle in highly disturbed areas.

Data will be collected to determine changes in vegetation composition and exotic weed dominance, and to assess re-vegetation success, and impacts on wildlife.

The grazing demonstration program will take place on a 79 acre site located in the northern half of section P-11 Lateral in Section 10 (see Map 5, Vegetation Management Study Plan).

The method for determining the results of the grazing demonstration will include preliminary vegetation analysis and subsequent post treatment analysis. Control plots shall be established. Permanent photo documentation stations will be established at each plot.

Success shall be determined by answering the following questions:

1) Is there a reduction of annual weed and grass cover on recharge basins, levees, and canals?
2) It there a trend toward the increase of native plant cover and decrease of exotic pest plants in recharge basins and levees?

3) Has there been an increase in the germination and survival rate of seeded native species on erosive, disturbed soils?
4) Has there been a reduction of flowering and seed production in Russian thistle?
5) Has there been an increase in target plant and animal species?

The following are the tasks needed to complete the grazing demonstration study:

1) Select suitable areas that represent vegetation to be managed.
2) Demarcate test plot areas and control.
3) Survey and analyze vegetation.
4) Determine forage value, stocking and density rates.
5) Determine suitable grazing locations.
6) Implement grazing program.
7) Monitor and evaluate grazing.
8) Reporting and final recommendations.

Monitoring for this activity shall include data collections and field observations. If thresholds of success are not achieved within the five year monitoring period, the stocking rate, timing and frequency will be adjusted to better meet vegetation management objectives.

3. Mowing Study

The purpose of the mowing demonstration is to investigate the effects of mowing road and levee bank vegetation. The goal of the mowing study is to reduce weedy vegetation and control Russian thistle seed production. Mowing shall be done in the late spring, prior to shatter of annual seeds. Data will be collected to assess the effectiveness of mowing for weed reduction and biomass control along levees, roads, and canals. Results of the study will strive to answer the following questions: 1) what is the cost per mile? 2) how effective is mowing for exotic weed control? 3) how does mowing affect native plant cover? and 4) does mowing impact or benefit wildlife utilization?

The mowing demonstration will take place along a one mile section of roads and levees along recharge basin S1 (see Map 5).

The following are the tasks needed to complete the mowing demonstration study:

1) Select suitable roads and levees that represent vegetation to be managed.
2) Demarcate test plot areas and control.
3) Survey and analyze vegetation.
4) Describe physical characteristics.
5) Develop mowing plan components.
6) Implement mowing program.
7) Monitor and evaluate mowing.
8) Reporting and final recommendations.

Success 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. Control plots shall be established for a basis in which to evaluate impacts on wildlife. The demonstration program will include appropriate control plots and other monitoring as necessary to allow discrimination between treatment effects and natural variation in vegetation populations of target plants and animals, and habitat use by target species. Permanent photo documentation stations will be established at each plot.

Monitoring of the mowing demonstration shall include data collections and field observations. If thresholds of success are not achieved within the five year monitoring period, the mowing timing and frequency will be adjusted to better meet vegetation management objectives.

4. Habitat Restoration Study

The purpose of the habitat restoration demonstration is to assess the ability of different techniques to restore fallowed agriculture land to desert grassland and alkaline sink shrub habitat. The goal of the habitat restoration demonstration study is to reestablish successful native vegetation communities comprised of native alkaline sink and desert grassland species. The primary means of reestablishment will be to use strategic mowing, burning, selective herbicide and grazing techniques to encourage reproduction and spread of native species over exotic pest species.

The method for determining the results of restoration demonstrations will include preliminary vegetation analysis and subsequent post treatment analysis. Permanent photo documentation stations will be established at each plot. Seeds from native species may be collected and redistributed.

The following are the tasks needed to complete the habitat restoration demonstration study:

1) Select study areas.
2) Survey and analyze vegetation.
3) Describe physical characteristics.
4) Survey for presence or absence of federally listed plant species.
5) Implement restoration and re-vegetation program.
6) Reporting and final recommendations.
7) Assess presence/absence, level of use, or other relevant natural history parameters for target wildlife species.

The following are the success criteria for the habitat restoration demonstration study:

1) Success will be determined by species composition. During the monitoring period, a trend toward an increase of native species and decrease in exotic species

shall be measured in each treatment plot. Each monitoring report will estimate species composition by percent cover estimates and cover estimate methods.

2) Success will be determined by fecundity. Any natural native plant species re-generation and/or recruitment will be measured and applied to the required number of plants over the five year monitoring period.

3) Determination of success will include as a secondary standard the status of wildlife populations in the restored areas.

Monitoring of the habitat restoration demonstrations shall include photo documentation, data collections and field observations.

United States
Environmental Protection
Agency

November 25, 1996

Pesticides And Toxic Substances (H-7506C)

Protecting Endangered Species

Interim Measures for Use of

Rodenticides in Kern County

The federal Endangered Species Act is intended to protect and promote the recovery of animals and plants that are in danger of becoming extinct due to human activities. Under the Act, the U.S. Environmental Protection Agency (U.S. EPA) must ensure that the use of pesticides it registers will not result in harm to the species listed as endangered or threatened by the U.S. Fish and Wildlife Service, or to habitat critical to those species' survival. This program will protect endangered and threatened species from harm due to pesticide use.

The information provided in this bulletin is similar to what U.S. EPA expects to distribute once the Endangered Species Protection Program is in effect. Individuals who use pesticides during this interim period are not legally required to comply with these suggested measures. At the present time, compliance with the requirements specified on the pesticide product labeling will satisfy all legal requirements regarding pesticides and endangered species protection. While these pesticide use conditions do not yet have the force of law, they are being provided now for your use in voluntarily protecting endangered and threatened species.

Your comments are needed regarding the information presented in this publication. Please contact us to let us know whether the information is clear and correct. Also tell us to what extent following the recommended measures would affect your pesticide use program. This information will be considered by U.S. EPA during the final stages of program development.

Please submit comments to:
DPR Pesticide Registration Branch
1020 N Street, Room 332
Sacramento, CA 95814
(916) 324-3881

About This Publication

This publication contains a county map showing the area where pesticide use should be limited to protect listed species. The areas where listed species are present are identified on the map by a shaded pattern. The areas are also described in terms of township, range and section for specific detail.

The Table of Use Limitation Codes lists the species addressed in this bulletin and categorizes them by species group. Species have been placed in logical groups based on their similar characteristics or behaviors.

The Use Limitation Codes table also lists the limitation codes for each of the species groups. The codes indicate the specific limitations that are necessary to protect the species. The table titled Table of Limitations on Pesticide Use explains the codes.

Does This Information Apply To You?

To determine whether this information applies to your use of a pesticide, review the questions below. The information applies only if you answer "yes" to both questions:

- Do you intend to use pesticides within the shaded area on the county map (pages 4-5)?
- Are any of the ingredients included in your pesticide product named in the "Table of Use Limitation Codes" (page 6)?

If you answer "yes" to both questions, you should follow the instructions on "How to Use This Information" to help protect listed species.

If you answer "no" to either question, you should follow the usage directions on the pesticide product label.

How to Use This Information

1 On the map provided with this bulletin, find the shading pattern that covers the area where you will apply pesticides. If the site is clearly outside of the shaded area, refer to the label for general fish and wildlife protection, this bulletin does not apply. If the site clearly is in th shaded area or you are not sure from the map, please refer to the section list (beginning on P. 7) for mor detailed information.

2 If the section where you will apply pesticides is not listed in the section list, then see the label for general fish and wildlife protection, this information does not apply to you. If the section where you will apply pesticides is listed, the species that are likely to be found in the section are listed in the next column.

3 In the Table of Use Limitation Codes (page 6), look up the species and note the numbered use limitation code(s) that apply to each section where you will apply pesticides.

4 In the Table of Limitations on Pesticide Use (pages 7-10), look up the code number of the use limitation that applies to each section where you will apply pesticides. Follow the limitation(s) that apply to each section where you will apply a pesticide that is subject to the provisions of this bulletin.

5 If you are applying more than one listed active ingredient or applying a listed active ingredient in an area with more than one listed species, multiple limitations may apply. If multiple use limitations conflict, you should follow the most restrictive limitation.

Alternatives

The following alternatives should be considered in place of pesticide applications or to reduce the amount and/ or frequency of pesticide applications for control of vertebrate pests. Use of these alternatives may result in reduced costs, greater control and less long-term need for pesticide applications.

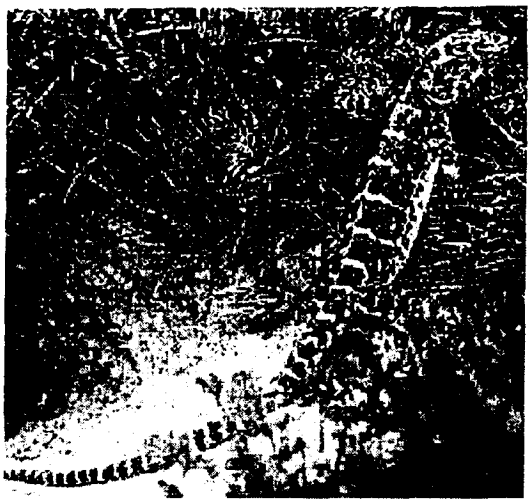
- Trapping may be very effective for control of vertebrate pests in areas of limited size, especially burrowing rodents such as gophers and ground squirrels. For example, Conibear No. 110-type traps are effective for ground squirrels. To minimize threats to non-target species, traps should be placed only in active burrows. If there is any doubt about burrow activity, the burrow opening should be closed with soil and traps should be placed only in burrows that are re-opened. Stake all traps during placement. To reduce risk to non-target species, spring all traps before nightfall and reset the following morning as needed.

- Shooting, where safe and appropriate, may be effective for limited infestations of day-active species such as ground squirrels.

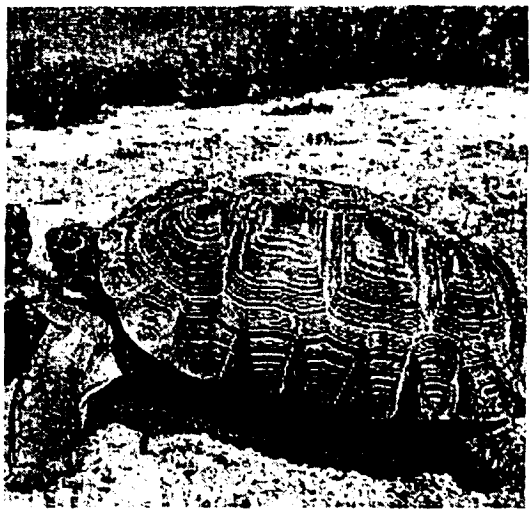
- Repellents may reduce feeding damage to young trees.

- Habitat modification including vegetation management (e.g. removal of brush piles) may reduce abundance of pest species.

Species Addressed in This Bulletin

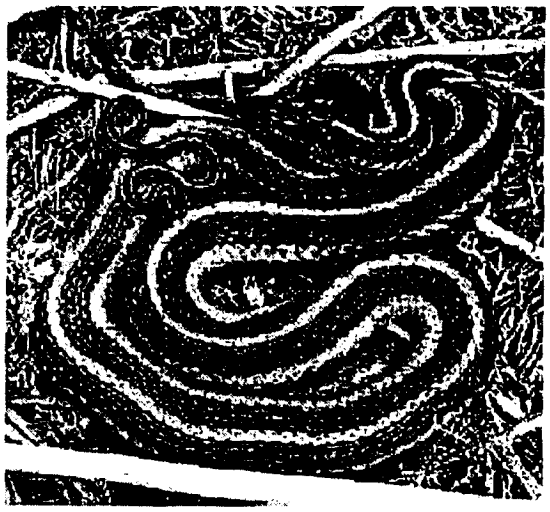


Blunt-nosed Leopard Lizard



Desert Tortoise

Giant Kangaroo Rat

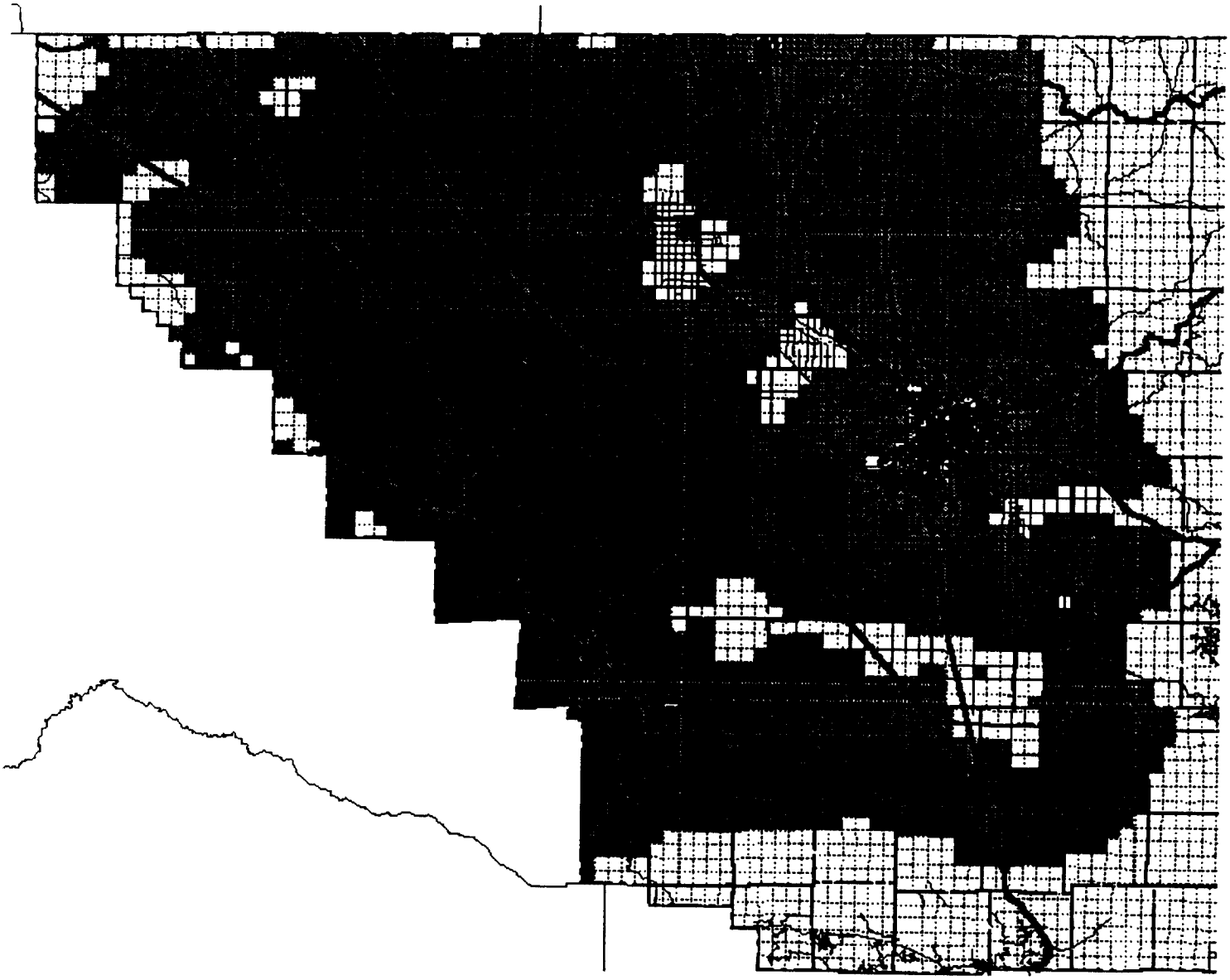


Giant Garter Snake

San Joaquin Kit Fox

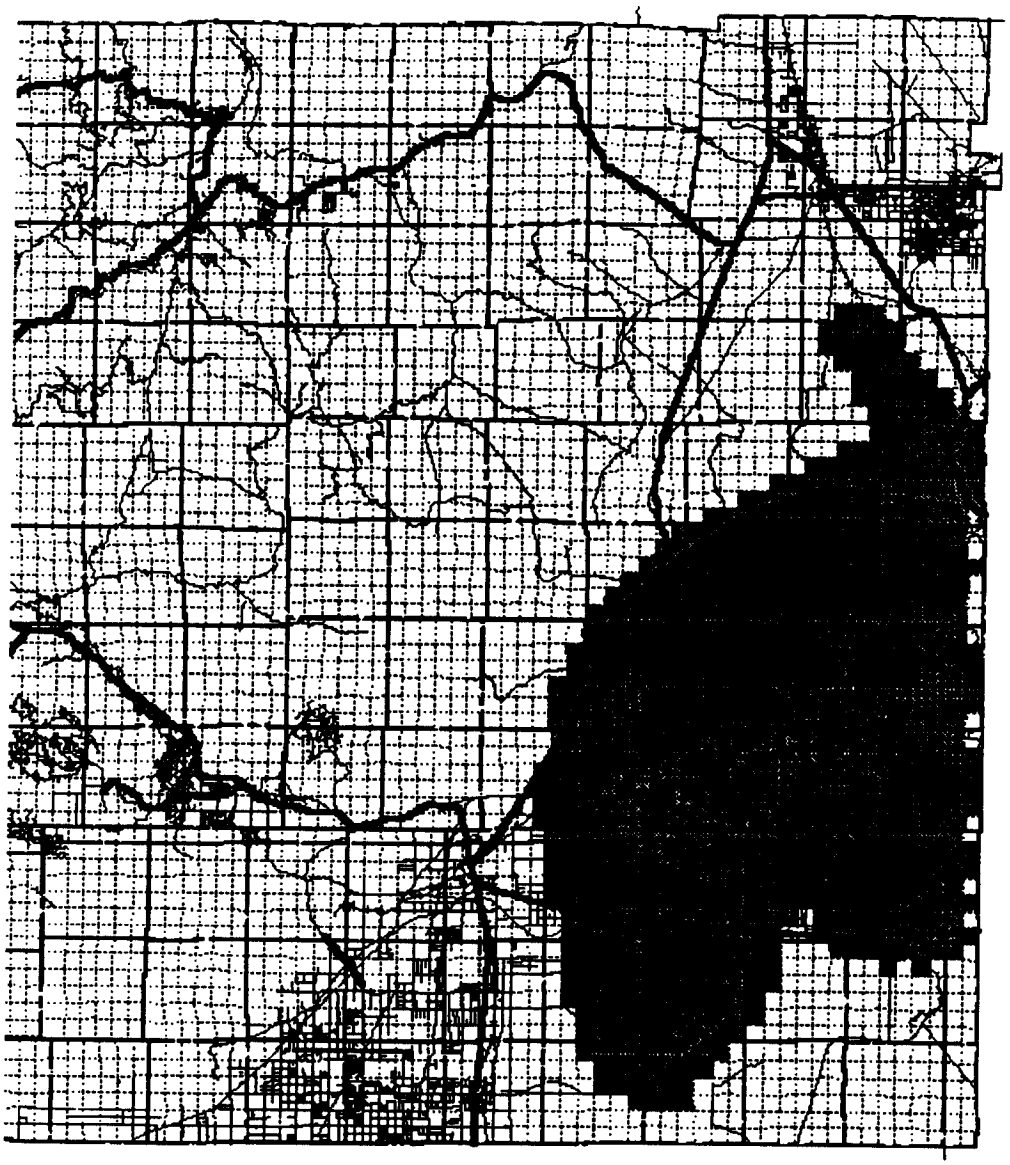
Tipton Kangaroo Rat

Distribution of Species Addressed in This Bulletin



Western Kern County

Distribution of Species Addressed in This Bulletin



Eastern Kern County

Table of Use Limitation Codes

Limitation Codes / Shading Key

Use limitations apply to the shaded area (■) when any of the following active ingredients are used as above ground grain baits or pelletized rodenticides (left three columns) or burrow fumigants (right column). See the Section List in this bulletin for more detail on species locations.

Species	Commensal Rodent Baits (Structural Use)	Field Use Anticoagulant Baits	Field Use Acute Baits	Burrow Fumigants
	Brodifacoum Bromadiolone Bromethalin Chlorophacinone Difenacoum Difethialone Diphacinone Pival Vitamin D3 Warfarin Zinc phosphide	Chlorophacinone Diphacinone	Zinc phosphide	Acrolein Aluminum phosphide Magnesium phosphide Sodium nitrate Potassium nitrate (Smoke cartridge)
Blunt-nosed Leopard Lizard **Giant Garter Snake***	--	--	--	5, 31
Giant Kangaroo Rat **Tipton Kangaroo Rat**	8	8	8	5
San Joaquin Kit Fox	7	1, 2, 3, 4	3	5

*** Species not listed in the 1993 Vertebrate Pesticide Biological Opinion**

Table of Limitations on Pesticide Use

Code	Limitation
1A	**Bait station applications:** ***Formulation:*** The active ingredient shall not exceed 0.005% in the formulated bait.
1B	***Bait Station Design and Use:*** Bait stations shall be designed with an opening that prevents access to non-target species (not to exceed 3") and controls bait spillage by feeding rodents. See your county agricultural commissioner for recommended designs and suggestions to retrofit existing stations. Bait stations shall be secured (e.g. staked) upright to prevent tipping and access by non-target animals. Bait stations shall not be filled beyond design capacity and in no case shall bait stations be filled with more than 10 lbs of bait.
1C	***Station Monitoring:*** While treated baits are in use, bait stations shall be inspected for spillage, evidence of disturbance by non-target animals, excess moisture from irrigation systems, etc. Problems shall be corrected before baiting is resumed. Any spilled baits shall be promptly cleaned up (scattering limitied quantities of spilled bait in non-crop areas is acceptable if allowed by labeling). Bait stations shall be replenished with treated baits as needed to provide continuous exposure. After treated baits are accepted, as evidenced by consumption of baits, depletion of bait in the bait station shall be inspected at least weekly for depletion of bait and refilled until feeding ceases. Treated baits shall be promptly removed (or bait stations shall be sealed) from all stations after feeding has ceased. If subsequent baiting is needed, a two week period without use of treated baits shall be observed before baiting is resumed. This is to keep the period when treated bait is exposed to a minimum without jeopardizing good pest control.
1D	***Carcass Survey and Disposal:*** Carcass survey and disposal shall be performed in the treated area beginning on the third day following the initial exposure of toxic baits. Any exposed carcasses shall be disposed of (e.g., completely buried) in a manner inaccessible to wildlife. Carcass surveys shall continue for at least 5 days after toxic baiting has ceased and thereafter until no more carcasses are found. Carcasses should be handled with care to avoid contact with parasites such as fleas.
1E	***Pre-baiting (optional):*** Pre-baiting of bait stations with non-toxic (untreated) grains such as oats, oat groats or barley is optional, but may reduce the time period for carcass surveys. Pre-baiting will acclimate the pest species to feed in bait stations and should be continued until most of the target population is feeding from the stations. The period of toxic bait exposure may be shortened as will the period when pest carcasses may be exposed. The untreated grain need not be the same as the treated grain, but milo or cracked corn **should be strictly avoided** due to their attractiveness to birds.

Table of Limitations on Pesticide Use

Code	Limitation
2A	**Broadcast (mechanical) and spot (hand) applications** ***Formulation:*** The active ingredient shall not exceed 0.01% in the formulated bait.
2B	***Test Baiting/Bait Acceptance*** : Prior to the main application of toxic baits by spot or broadcast method, a small amount of the bait shall be applied to determine bait acceptance Test baits shall be broadcast by the same method that will be used for control baiting.
2C	***Use of Treated Baits*** : Use of treated baits shall begin only when bait acceptance is confirmed by consumption of test baits. Piling of baits shall be avoided. No additional applications shall be made whenever significant quantities of previously applied bait remain. Do not place baits directly into burrows. Do not exceed label application rates. **Spot Baiting**- Scatter a handful of bait (about 10 handfulls per pound) evenly over 40 to 50 square feet near active burrows or runways. Repeat every other day until feeding ceases. **Mechanical Spreader**- Apply at the rate of 10 pounds per swath acre through infested area. Follow with a second application in 2 to 3 days.
2D	***Carcass Survey and Disposal:*** See Limitation Code 1D.
3	Use of pelletized formulations for control of ground squirrels is prohibited, except in bait stations as described in Limitation Code 1 (A, B, C, E).
4	Jackrabbits may be controlled by using self-dispensing bait stations provided that: Bait acceptance is first determined. Carcasses are removed and stations are monitored as described in Limitation Codes 1C and 1D respectively. Baiting ceases when feeding stops. Baits are placed only where jackrabbits are active. Use of pelletized baits is prohibited.

Table of Limitations on Pesticide Use

Code	Limitation
5	Use shall be supervised by a person (wildlife biologist, county agricultural commissioner, university extension advisor, state or federal official or others) who is trained to distinguish dens and burrows of target species from those of non-target species. Use shall occur only in the<u>active</u> burrows of target species. The person responsible for supervision shall be aware of the conditions at the site of application and be available to direct and control the manner in which applications are made (per Section 6406 of Title 3, California Code of Regulations). Contact your county agricultural commissioner for information on training.
7	For commensal rodent control, outdoor use must be in tamper resistant bait boxes placed in areas inaccessible to wildlife.
8	For commensal rodent control, outdoor use must be in tamper resistant bait boxes placed in areas inaccessible to wildlife. Use is prohibited EXCEPT under any ONE of the following conditions (in all cases where toxic baits are applied, any spilled baits shall be immediately removed or buried to prevent exposure to non-target species): An approved bait station (see your county agricultural commissioner for approved designs) is used that is fitted with an entrance that provides selective access to pest species but does not allow access to kangaroo rats, OR Bait is placed only in bait stations that are elevated to preclude exposure to kangaroo rats, and designed to prevent spillage by rodents feeding (see your county agricultural commissioner for specifications), OR Baits are placed in bait stations during daylight hours only and are removed (or entrances are closed) by dusk each day, OR Broadcast application of baits is allowed in fields under active cultivation with the maintenance of a 10 yard wide border of untreated crops where fields are adjacent to areas of natural vegetation. For purposes of this provision, fields under active cultivation means fields that have been tilled within the last one year OR that such fields are irrigated by furrow, flood or overlapping sprinkler method.

Table of Limitations on Pesticide Use

Code	Limitation
31	Use is prohibited from October 1 through April 30, EXCEPT: a) in cultivated areas, or b) on the water side of water supply channels

Section List

The following is an index to Townships, Ranges and Sections where the species addressed in this bulletin are likely to be found. In the Table of Limitations on Pesticide Use, habitat descriptions are included to identify specific land uses where pesticide use limitations do not apply.

The section lists are subject to ongoing updates coordinated by the Department of Fish and Game (DFG) Pesticide Investigations Unit and the county agricultural commissioner. Bulletins will be updated every six months and each bulletin is valid for six months from the date on its cover. Bulletins are available from the county agricultural commissioner or via the Internet:

(http://www.cdpr.ca.gov/docs/es/qb/overview.htm).

If a section is suspected to be no longer suitable for a listed species, or if additional sections should be included, please contact the county agricultural commissioner. These lists are maintained for pesticide regulatory purposes only.

Section	Species
08N07W: S6	Desert Tortoise
08N08W: S1-2, 5-6	Desert Tortoise
09N10W: S2-10, 16-21	Desert Tortoise
09N11W: S1-4, 10-15, 24	Desert Tortoise
10N07W: S6	Desert Tortoise
10N08W: S1-6, 9, 11	Desert Tortoise
10N09W: S1, 5-8, 17-19, 30	Desert Tortoise
10N10W: S1-36	Desert Tortoise
10N11W: S1-5, 8-17, 20-28, 33-36	Desert Tortoise
10N18W: S2-10, 16-18	San Joaquin Kit Fox
10N19W: S1-8	San Joaquin Kit Fox
10N19W: S9-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
10N19W: S12-13	San Joaquin Kit Fox
10N19W: S14-16	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
10N19W: S17-20	San Joaquin Kit Fox
10N19W: S21-23	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
10N19W: S24	San Joaquin Kit Fox
10N20W: S1-14, 23-24	San Joaquin Kit Fox
10N21W: S1-8, 11-12	San Joaquin Kit Fox
10N22W: S1-12	San Joaquin Kit Fox
10N23W: S1-12, 18	San Joaquin Kit Fox
10N24W: S1-5, 8-15	San Joaquin Kit Fox
10N24W: S16-17	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
10N24W: S18-19	Blunt Nosed Leopard Lizard
10N24W: S20-21	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
10N24W: S22-24	San Joaquin Kit Fox
10N24W: S29-30	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
10N24W: S32	Blunt Nosed Leopard Lizard

Section	Species
11N07W: S5-8, 18-20, 30-32	Desert Tortoise
11N08W: S1-36	Desert Tortoise
11N09W: S1-26, 28-32, 35-36	Desert Tortoise
11N10W: S1-36	Desert Tortoise
11N11W: S1-29, 32-36	Desert Tortoise
11N17W: S5-7, 18	San Joaquin Kit Fox
11N18W: S1-36	San Joaquin Kit Fox
11N19W: S1-2, 7-8, 11-14, 17-36	San Joaquin Kit Fox
11N20W: S3-22	San Joaquin Kit Fox
11N20W: S23-26	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N20W: S27-34	San Joaquin Kit Fox
11N20W: S35-36	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N21W: S1-5	San Joaquin Kit Fox
11N21W: S6-7	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N21W: S8-17	San Joaquin Kit Fox
11N21W: S18	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N21W: S19-36	San Joaquin Kit Fox
11N22W: S1-2	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N22W: S3-10	San Joaquin Kit Fox
11N22W: S11-14	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N22W: S15-36	San Joaquin Kit Fox
11N23W: S1-2	San Joaquin Kit Fox
11N23W: S3-4	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N23W: S5-7	San Joaquin Kit Fox
11N23W: S8-10	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N23W: S11-14	San Joaquin Kit Fox
11N23W: S15-17	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N23W: S18-19	San Joaquin Kit Fox
11N23W: S20-22	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N23W: S23-26	San Joaquin Kit Fox
11N23W: S27-29	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N23W: S30-32	San Joaquin Kit Fox
11N23W: S33	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
11N23W: S34-36	San Joaquin Kit Fox
11N24W: S1-5, 8-17, 20-29, 32-36	San Joaquin Kit Fox
12N07W: S31	Desert Tortoise
12N08W: S31-36	Desert Tortoise
12N09W: S31-36	Desert Tortoise
12N10W: S31-36	Desert Tortoise
12N11W: S31-36	Desert Tortoise
12N17W: S29-32	San Joaquin Kit Fox
12N18W: S25-36	San Joaquin Kit Fox
12N19W: S25-26, 35-36	San Joaquin Kit Fox

Section	Species
12N20W: S27-34	San Joaquin Kit Fox
12N21W: S25-36	San Joaquin Kit Fox
12N22W: S25-36	San Joaquin Kit Fox
12N23W: S25-28, 30-36	San Joaquin Kit Fox
12N24W: S25-36	San Joaquin Kit Fox
12N25W: S36	San Joaquin Kit Fox
25S17E: S2	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S17E: S3, 11	San Joaquin Kit Fox
25S17E: S12	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S17E: S13, 23-27, 33-36	San Joaquin Kit Fox
25S18E: S7	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S18E: S8-12	San Joaquin Kit Fox
25S18E: S13	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S18E: S14-22	San Joaquin Kit Fox
25S18E: S23-26	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S18E: S27-36	San Joaquin Kit Fox
25S19E: S1	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S19E: S7-17	San Joaquin Kit Fox
25S19E: S18-19	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S19E: S20-23, 27-29	San Joaquin Kit Fox
25S19E: S30	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S19E: S31-32	San Joaquin Kit Fox
25S19E: S33-34	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S19E: S35	San Joaquin Kit Fox
25S20E: S1-18, 21-26	San Joaquin Kit Fox
25S20E: S27	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S20E: S28-29, 32	Blunt Nosed Leopard Lizard
25S20E: S33-36	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S1-16	San Joaquin Kit Fox
25S21E: S17	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S18	San Joaquin Kit Fox
25S21E: S19	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S20	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S21	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S22-24	San Joaquin Kit Fox
25S21E: S25	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S21E: S26-27	San Joaquin Kit Fox
25S21E: S28	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S29	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S30-31	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S21E: S32-35	San Joaquin Kit Fox
25S21E: S36	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S22E: S1	San Joaquin Kit Fox

Section	Species
25S22E: S2-3	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S22E: S4	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S22E: S7	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S22E: S8-9	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S22E: S10-11	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S22E: S12	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S22E: S13-15	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S22E: S16-21	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S22E: S22-27	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S22E: S28-34	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S22E: S35-36	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S4-6	San Joaquin Kit Fox
25S23E: S7	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S8	San Joaquin Kit Fox
25S23E: S9-10	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S11	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S12-13	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S23E: S14-16	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S17	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S23E: S18-20	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S21-24	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S23E: S25	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S26-31	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S32-33	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S34-35	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S23E: S36	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S1	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S2	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S24E: S3-4	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S5-6	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S7	Tipton Kangaroo Rat, San Joaquin Kit Fox

Section	Species
25S24E: S8-9	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S10-11	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S24E: S12	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S13-14	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S24E: S15-17	San Joaquin Kit Fox
25S24E: S18	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S24E: S19-22	San Joaquin Kit Fox
25S24E: S23	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S24	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S24E: S25	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S26-27	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S24E: S28-33	San Joaquin Kit Fox
25S24E: S34-36	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S3-4	San Joaquin Kit Fox
25S25E: S5	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S6-7	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S8-10	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S11-14	San Joaquin Kit Fox
25S25E: S15	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S16	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S17	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S18-19	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S25E: S20	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S21-22	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S23-24	San Joaquin Kit Fox
25S25E: S25-27	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S25E: S28	San Joaquin Kit Fox
25S25E: S29-30	Tipton Kangaroo Rat, San Joaquin Kit Fox
25S25E: S31-33	San Joaquin Kit Fox
25S25E: S34-36	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
25S26E: S1-36	San Joaquin Kit Fox
25S27E: S2-36	San Joaquin Kit Fox
25S28E: S1, 7-36	San Joaquin Kit Fox
25S29E: S7, 18-19, 30-31	San Joaquin Kit Fox
26S16E: S13, 24	San Joaquin Kit Fox
26S17E: S1-5, 7-20	San Joaquin Kit Fox
26S17E: S21-23	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S17E: S24-25	San Joaquin Kit Fox
26S17E: S26-28	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox

Section	Species
26S17E: S29, 32	San Joaquin Kit Fox
26S17E: S33-35	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S17E: S36	San Joaquin Kit Fox
26S18E: S1-19, 24-25, 33-36	San Joaquin Kit Fox
26S19E: S1	San Joaquin Kit Fox
26S19E: S2-4	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S19E: S5-8	San Joaquin Kit Fox
26S19E: S9-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S19E: S12	San Joaquin Kit Fox
26S19E: S13-15	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S19E: S16-21	San Joaquin Kit Fox
26S19E: S22-27	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S19E: S28-36	San Joaquin Kit Fox
26S20E: S1-5	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S20E: S6-10	San Joaquin Kit Fox
26S20E: S11-12	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S20E: S13-36	San Joaquin Kit Fox
26S21E: S1-5	San Joaquin Kit Fox
26S21E: S6	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S21E: S7-10	San Joaquin Kit Fox
26S21E: S11-14	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S21E: S15-21	San Joaquin Kit Fox
26S21E: S22-24	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S21E: S25-26	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S21E: S27	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S21E: S28-34	San Joaquin Kit Fox
26S21E: S35-36	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S22E: S1-5	Tipton Kangaroo Rat, San Joaquin Kit Fox
26S22E: S6	San Joaquin Kit Fox
26S22E: S7	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S22E: S8-14	Tipton Kangaroo Rat, San Joaquin Kit Fox
26S22E: S15-17	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S22E: S18	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S22E: S19-23	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S22E: S24	Tipton Kangaroo Rat, San Joaquin Kit Fox
26S22E: S25-31	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S22E: S32	Tipton Kangaroo Rat, San Joaquin Kit Fox
26S22E: S33	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox

Section	Species
26S22E: S34-36	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S23E: S1	San Joaquin Kit Fox
26S23E: S2	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S23E: S3-5	San Joaquin Kit Fox
26S23E: S6-7	Tipton Kangaroo Rat, San Joaquin Kit Fox
26S23E: S8-16	San Joaquin Kit Fox
26S23E: S17-21	Tipton Kangaroo Rat, San Joaquin Kit Fox
26S23E: S22-29	San Joaquin Kit Fox
26S23E: S30-33	Tipton Kangaroo Rat, San Joaquin Kit Fox
26S23E: S34-36	San Joaquin Kit Fox
26S24E: S1-3	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S24E: S4-9	San Joaquin Kit Fox
26S24E: S10-14	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S24E: S15-21, 24-25, 29-32, 36	San Joaquin Kit Fox
26S25E: S1-3	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S25E: S4-36	San Joaquin Kit Fox
26S26E: S1	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S26E: S2-11	San Joaquin Kit Fox
26S26E: S12-13	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S26E: S14-36	San Joaquin Kit Fox
26S27E: S1-4	San Joaquin Kit Fox
26S27E: S5-8	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S27E: S9	San Joaquin Kit Fox
26S27E: S10-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S27E: S12	San Joaquin Kit Fox
26S27E: S13-15	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S27E: S16	San Joaquin Kit Fox
26S27E: S17-18	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S27E: S19-21	San Joaquin Kit Fox
26S27E: S22-24	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
26S27E: S25-36	San Joaquin Kit Fox
26S28E: S1-36	San Joaquin Kit Fox
26S29E: S6-7, 18-20, 28-34	San Joaquin Kit Fox
27S17E: S3	San Joaquin Kit Fox
27S18E: S1	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S18E: S2-5, 8-17, 20-28, 36	San Joaquin Kit Fox
27S19E: S1-8	San Joaquin Kit Fox
27S19E: S9-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S19E: S12-13	San Joaquin Kit Fox
27S19E: S14-16	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S19E: S17-20	San Joaquin Kit Fox
27S19E: S21-23	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S19E: S24-36	San Joaquin Kit Fox
27S20E: S1-36	San Joaquin Kit Fox
27S21E: S1	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S21E: S2-36	San Joaquin Kit Fox
27S22E: S1-2	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox

Section	Species
27S22E: S3-14	San Joaquin Kit Fox
27S22E: S15-16	Tipton Kangaroo Rat, San Joaquin Kit Fox
27S22E: S17-20	San Joaquin Kit Fox
27S22E: S21-23	Tipton Kangaroo Rat, San Joaquin Kit Fox
27S22E: S24	San Joaquin Kit Fox
27S22E: S25-27	Tipton Kangaroo Rat, San Joaquin Kit Fox
27S22E: S28-34	San Joaquin Kit Fox
27S22E: S35-36	Tipton Kangaroo Rat, San Joaquin Kit Fox
27S23E: S1	San Joaquin Kit Fox
27S23E: S2-3	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S23E: S4	San Joaquin Kit Fox
27S23E: S5	Tipton Kangaroo Rat, San Joaquin Kit Fox
27S23E: S6-8	San Joaquin Kit Fox
27S23E: S9-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S23E: S12-13	San Joaquin Kit Fox
27S23E: S14-16	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S23E: S17-18	San Joaquin Kit Fox
27S23E: S19-20	Tipton Kangaroo Rat, San Joaquin Kit Fox
27S23E: S21-28	San Joaquin Kit Fox
27S23E: S29-33	Tipton Kangaroo Rat, San Joaquin Kit Fox
27S23E: S34-35	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S23E: S36	San Joaquin Kit Fox
27S24E: S4-6	San Joaquin Kit Fox
27S24E: S7-8	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S24E: S9, 16	San Joaquin Kit Fox
27S24E: S17-18	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S24E: S19-21, 29-32	San Joaquin Kit Fox
27S25E: S1-6, 9-15, 22-28, 32-36	San Joaquin Kit Fox
27S26E: S1-36	San Joaquin Kit Fox
27S27E: S1-12	San Joaquin Kit Fox
27S27E: S13-16	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S27E: S17-19	San Joaquin Kit Fox
27S27E: S20-32	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
27S27E: S33-36	San Joaquin Kit Fox
27S28E: S1-36	San Joaquin Kit Fox
27S29E: S3-10, 16-20	San Joaquin Kit Fox
27S39E: S33-35	Desert Tortoise
28S18E: S13, 23-26	San Joaquin Kit Fox
28S19E: S1-10	San Joaquin Kit Fox
28S19E: S11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S19E: S12-13	San Joaquin Kit Fox
28S19E: S14	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S19E: S15-27, 29-33, 35-36	San Joaquin Kit Fox
28S20E: S1-36	San Joaquin Kit Fox
28S21E: S1-36	San Joaquin Kit Fox
28S22E: S1-11	San Joaquin Kit Fox
28S22E: S12-13	Tipton Kangaroo Rat, San Joaquin Kit Fox

Section	Species
28S22E: S14-36	San Joaquin Kit Fox
28S23E: S1	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S23E: S2-4	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S23E: S5	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S23E: S6	San Joaquin Kit Fox
28S23E: S7	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S23E: S8-9	San Joaquin Kit Fox
28S23E: S10-11	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S23E: S12-15	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S23E: S16-17	San Joaquin Kit Fox
28S23E: S18-19	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S23E: S20-24	San Joaquin Kit Fox
28S23E: S25-26	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S23E: S27-33	San Joaquin Kit Fox
28S23E: S34-35	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S23E: S36	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S24E: S4-17	San Joaquin Kit Fox
28S24E: S18-19	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S24E: S20-27	San Joaquin Kit Fox
28S24E: S28-29	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S24E: S30-31	San Joaquin Kit Fox
28S24E: S32-33	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S24E: S34	San Joaquin Kit Fox
28S24E: S35	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S24E: S36	San Joaquin Kit Fox
28S25E: S1-32	San Joaquin Kit Fox
28S25E: S33-34	Tipton Kangaroo Rat, San Joaquin Kit Fox
28S25E: S35	San Joaquin Kit Fox
28S26E: S1-7, 9-15, 18, 23-25, 36	San Joaquin Kit Fox
28S27E: S1-7	San Joaquin Kit Fox
28S27E: S8-10	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S27E: S11-14	San Joaquin Kit Fox
28S27E: S15-17	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S27E: S18-19	San Joaquin Kit Fox
28S27E: S20-21	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
28S27E: S22-36	San Joaquin Kit Fox
28S28E: S1-36	San Joaquin Kit Fox
28S29E: S2-24, 26-36	San Joaquin Kit Fox
28S39E: S1-5, 8-16, 22-27, 35-36	Desert Tortoise
28S40E: S18-20, 28-34	Desert Tortoise
29S19E: S4-6	San Joaquin Kit Fox
29S20E: S1-4	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S20E: S5-8	San Joaquin Kit Fox

Section	Species
29S20E: S9-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S20E: S12-13	San Joaquin Kit Fox
29S20E: S14-15	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S20E: S16-17, 21-28, 31, 34-36	San Joaquin Kit Fox
29S21E: S1	San Joaquin Kit Fox
29S21E: S2	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S21E: S3-10	San Joaquin Kit Fox
29S21E: S11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S21E: S12-36	San Joaquin Kit Fox
29S22E: S1-12	San Joaquin Kit Fox
29S22E: S13	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S22E: S14	Giant Kangaroo Rat, San Joaquin Kit Fox
29S22E: S15-19	San Joaquin Kit Fox
29S22E: S20-21	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S22E: S22	San Joaquin Kit Fox
29S22E: S23	Giant Kangaroo Rat, San Joaquin Kit Fox
29S22E: S24-25	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S22E: S26	Giant Kangaroo Rat, San Joaquin Kit Fox
29S22E: S27	San Joaquin Kit Fox
29S22E: S28-30	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S22E: S31	San Joaquin Kit Fox
29S22E: S32-34	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S22E: S35-36	Giant Kangaroo Rat, San Joaquin Kit Fox
29S23E: S1	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S23E: S2	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S23E: S3-12	San Joaquin Kit Fox
29S23E: S13-15	Giant Garter Snake, San Joaquin Kit Fox
29S23E: S16	San Joaquin Kit Fox
29S23E: S17	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S23E: S18-20	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S23E: S21	San Joaquin Kit Fox
29S23E: S22-27	Giant Garter Snake, San Joaquin Kit Fox
29S23E: S28	Giant Kangaroo Rat, San Joaquin Kit Fox
29S23E: S29-31	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S23E: S32-34	Giant Kangaroo Rat, San Joaquin Kit Fox
29S23E: S35-36	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S24E: S1-2	San Joaquin Kit Fox
29S24E: S3-5	Tipton Kangaroo Rat, San Joaquin Kit Fox
29S24E: S6	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S24E: S7-9	Tipton Kangaroo Rat, San Joaquin Kit Fox

Section	Species
29S24E: S10	San Joaquin Kit Fox
29S24E: S11-14	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S24E: S15	San Joaquin Kit Fox
29S24E: S16-17	Tipton Kangaroo Rat, San Joaquin Kit Fox
29S24E: S18-20	San Joaquin Kit Fox
29S24E: S21-22	Tipton Kangaroo Rat, San Joaquin Kit Fox
29S24E: S23-30	San Joaquin Kit Fox
29S24E: S31	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S24E: S32-36	San Joaquin Kit Fox
29S25E: S3-11, 14-18	San Joaquin Kit Fox
29S25E: S19-20	Tipton Kangaroo Rat, San Joaquin Kit Fox
29S25E: S21-23, 25-30	San Joaquin Kit Fox
29S25E: S31-34	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S25E: S35-36	San Joaquin Kit Fox
29S26E: S1-3, 9-17, 20-36	San Joaquin Kit Fox
29S27E: S1-8, 13, 15-22, 27-33	San Joaquin Kit Fox
29S28E: S1-15, 17-18, 22-26, 33-36	San Joaquin Kit Fox
29S29E: S1-14	San Joaquin Kit Fox
29S29E: S15-22	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S29E: S23-26	San Joaquin Kit Fox
29S29E: S27-30	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
29S29E: S31-36	San Joaquin Kit Fox
29S30E: S5-8, 17-21, 28-34	San Joaquin Kit Fox
29S38E: S24-27, 32-36	Desert Tortoise
29S39E: S1, 10-17, 19-36	Desert Tortoise
29S40E: S1-35	Desert Tortoise
30S20E: S1-2, 10-14, 23-26, 35-36	San Joaquin Kit Fox
30S21E: S1-11	San Joaquin Kit Fox
30S21E: S12-13	Giant Kangaroo Rat, San Joaquin Kit Fox
30S21E: S14-23	San Joaquin Kit Fox
30S21E: S24	Giant Kangaroo Rat, San Joaquin Kit Fox
30S21E: S25-29, 33-36	San Joaquin Kit Fox
30S22E: S1	Giant Kangaroo Rat, San Joaquin Kit Fox
30S22E: S2	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S22E: S3-5	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S22E: S6-7	San Joaquin Kit Fox
30S22E: S8-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S22E: S12-16	San Joaquin Kit Fox
30S22E: S17-20	Giant Kangaroo Rat, San Joaquin Kit Fox
30S22E: S21-26	San Joaquin Kit Fox
30S22E: S27-30	Giant Kangaroo Rat, San Joaquin Kit Fox
30S22E: S31	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S22E: S32-34	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S22E: S35	Giant Kangaroo Rat, San Joaquin Kit Fox
30S22E: S36	San Joaquin Kit Fox

Section	Species
30S23E: S1-2	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S23E: S3-6	Giant Kangaroo Rat, San Joaquin Kit Fox
30S23E: S7-8	San Joaquin Kit Fox
30S23E: S9-10	Giant Kangaroo Rat, San Joaquin Kit Fox
30S23E: S11-12	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S23E: S13-36	San Joaquin Kit Fox
30S24E: S1-2	San Joaquin Kit Fox
30S24E: S3	Giant Garter Snake, San Joaquin Kit Fox
30S24E: S4-5	San Joaquin Kit Fox
30S24E: S6-7	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S24E: S8	San Joaquin Kit Fox
30S24E: S9-10	Giant Garter Snake, San Joaquin Kit Fox
30S24E: S11	Tipton Kangaroo Rat, Giant Garter Snake, San Joaquin Kit Fox
30S24E: S12	San Joaquin Kit Fox
30S24E: S13	Tipton Kangaroo Rat, San Joaquin Kit Fox
30S24E: S14	Tipton Kangaroo Rat, Giant Garter Snake, San Joaquin Kit Fox
30S24E: S15-16	Tipton Kangaroo Rat, Giant Kangaroo Rat, Giant Garter Snake, San Joaquin Kit Fox
30S24E: S17	Tipton Kangaroo Rat, Giant Kangaroo Rat, San Joaquin Kit Fox
30S24E: S18-19	San Joaquin Kit Fox
30S24E: S20-22	Tipton Kangaroo Rat, Giant Kangaroo Rat, San Joaquin Kit Fox
30S24E: S23-24	Tipton Kangaroo Rat, San Joaquin Kit Fox
30S24E: S25-26	San Joaquin Kit Fox
30S24E: S27-28	Tipton Kangaroo Rat, Giant Kangaroo Rat, San Joaquin Kit Fox
30S24E: S29-36	San Joaquin Kit Fox
30S25E: S1-2	San Joaquin Kit Fox
30S25E: S3-6	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S25E: S7	San Joaquin Kit Fox
30S25E: S8-10	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S25E: S11-27	San Joaquin Kit Fox
30S25E: S28	Giant Garter Snake, San Joaquin Kit Fox
30S25E: S29-31	San Joaquin Kit Fox
30S25E: S32-33	Giant Garter Snake, San Joaquin Kit Fox
30S25E: S34	Giant Garter Snake, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S25E: S35	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S25E: S36	San Joaquin Kit Fox
30S26E: S1-32	San Joaquin Kit Fox
30S26E: S33	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
30S26E: S34-36	San Joaquin Kit Fox
30S27E: S6-8, 13-36	San Joaquin Kit Fox
30S28E: S1-5, 8-23, 27-36	San Joaquin Kit Fox
30S29E: S1-12, 16-18, 25-28, 32-36	San Joaquin Kit Fox
30S30E: S2-11, 16-17, 30-35	San Joaquin Kit Fox
30S37E: S1, 11-15, 21-29, 31-36	Desert Tortoise

Section	Species
30S38E: S1-36	Desert Tortoise
30S39E: S1-36	Desert Tortoise
30S40E: S2-11, 13-23, 26-35	Desert Tortoise
31S22E: S1	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S2	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S3	Giant Kangaroo Rat, San Joaquin Kit Fox
31S22E: S4-5	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S6-8	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S9-10	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S11-14	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S15	San Joaquin Kit Fox
31S22E: S16	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S17	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S18	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S19	San Joaquin Kit Fox
31S22E: S20	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S21-22	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S23-24	San Joaquin Kit Fox
31S22E: S25	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S26	San Joaquin Kit Fox
31S22E: S27-29	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S22E: S30-36	San Joaquin Kit Fox
31S23E: S1-3	San Joaquin Kit Fox
31S23E: S4-5	Giant Kangaroo Rat, San Joaquin Kit Fox
31S23E: S6-7	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S23E: S8-9	Giant Kangaroo Rat, San Joaquin Kit Fox
31S23E: S10-11	San Joaquin Kit Fox
31S23E: S12-14	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S23E: S15-16	San Joaquin Kit Fox
31S23E: S17	Giant Kangaroo Rat, San Joaquin Kit Fox
31S23E: S18	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S23E: S19-22	San Joaquin Kit Fox
31S23E: S23-26	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S23E: S27	San Joaquin Kit Fox
31S23E: S28-34	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S23E: S35-36	San Joaquin Kit Fox
31S24E: S1-10	San Joaquin Kit Fox
31S24E: S11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S24E: S12	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox

Section	Species
31S24E: S13	Tipton Kangaroo Rat, Giant Garter Snake, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S24E: S14-15	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S24E: S16-17	San Joaquin Kit Fox
31S24E: S18-20	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S24E: S21	San Joaquin Kit Fox
31S24E: S22-23	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S24E: S24	Tipton Kangaroo Rat, Giant Garter Snake, Blunt Nosed Leopard Lizard
31S24E: S25	Giant Garter Snake
31S24E: S26-29	San Joaquin Kit Fox
31S24E: S30	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S24E: S31-35	San Joaquin Kit Fox
31S25E: S1	Tipton Kangaroo Rat, San Joaquin Kit Fox
31S25E: S2	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S25E: S3	Tipton Kangaroo Rat, Giant Garter Snake, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S25E: S4-5	Tipton Kangaroo Rat, Giant Garter Snake, San Joaquin Kit Fox
31S25E: S6	San Joaquin Kit Fox
31S25E: S7-8	Tipton Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S25E: S9-15	Tipton Kangaroo Rat, San Joaquin Kit Fox
31S25E: S16	Tipton Kangaroo Rat
31S25E: S17-20	Tipton Kangaroo Rat, Giant Garter Snake, Blunt Nosed Leopard Lizard
31S25E: S24	Tipton Kangaroo Rat, San Joaquin Kit Fox
31S25E: S29-30	Giant Garter Snake
31S26E: S1-3	San Joaquin Kit Fox
31S26E: S4	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S26E: S5-8	Tipton Kangaroo Rat, San Joaquin Kit Fox
31S26E: S9-17	San Joaquin Kit Fox
31S26E: S18-19	Tipton Kangaroo Rat, San Joaquin Kit Fox
31S26E: S20-22	Giant Kangaroo Rat, San Joaquin Kit Fox
31S26E: S23-26	San Joaquin Kit Fox
31S26E: S27-29	Giant Kangaroo Rat, San Joaquin Kit Fox
31S26E: S30	San Joaquin Kit Fox
31S26E: S32	Giant Kangaroo Rat
31S26E: S33-34	Giant Kangaroo Rat, San Joaquin Kit Fox
31S26E: S35-36	San Joaquin Kit Fox
31S27E: S1-36	San Joaquin Kit Fox
31S28E: S1-24	San Joaquin Kit Fox
31S28E: S25	Tipton Kangaroo Rat, San Joaquin Kit Fox
31S28E: S26-36	San Joaquin Kit Fox

Section	Species
31S29E: S1-26, 28-36	San Joaquin Kit Fox
31S30E: S2-11, 14-20	San Joaquin Kit Fox
31S30E: S21-23	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S30E: S26	Blunt Nosed Leopard Lizard
31S30E: S27-28	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
31S30E: S29-33	San Joaquin Kit Fox
31S36E: S12-13, 23-26, 35-36	Desert Tortoise
31S37E: S1-36	Desert Tortoise
31S38E: S1-36	Desert Tortoise
31S39E: S1-36	Desert Tortoise
31S40E: S2-35	Desert Tortoise
32S22E: S1	San Joaquin Kit Fox
32S23E: S1-2	San Joaquin Kit Fox
32S23E: S3-11	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
32S23E: S12-13	San Joaquin Kit Fox
32S23E: S14-15	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
32S23E: S16	Giant Kangaroo Rat, Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
32S23E: S17-18	San Joaquin Kit Fox
32S23E: S19-20	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
32S23E: S21	San Joaquin Kit Fox
32S23E: S22	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
32S23E: S23-36	San Joaquin Kit Fox
32S24E: S2-11	San Joaquin Kit Fox
32S24E: S12	Giant Kangaroo Rat, San Joaquin Kit Fox
32S24E: S13-27	San Joaquin Kit Fox
32S24E: S28	Blunt Nosed Leopard Lizard, San Joaquin Kit Fox
32S24E: S29-36	San Joaquin Kit Fox
32S25E: S5-6	Giant Kangaroo Rat
32S25E: S7	Giant Kangaroo Rat, San Joaquin Kit Fox
32S25E: S8	Giant Kangaroo Rat
32S25E: S13	San Joaquin Kit Fox
32S25E: S17-18	Giant Kangaroo Rat, San Joaquin Kit Fox
32S25E: S19-20	Tipton Kangaroo Rat, San Joaquin Kit Fox
32S25E: S21	San Joaquin Kit Fox
32S25E: S22-23	Tipton Kangaroo Rat
32S25E: S24-28	San Joaquin Kit Fox
32S25E: S29	Tipton Kangaroo Rat, San Joaquin Kit Fox
32S25E: S30-36	San Joaquin Kit Fox
32S26E: S7-8	Tipton Kangaroo Rat, San Joaquin Kit Fox
32S26E: S9-10, 13-36	San Joaquin Kit Fox
32S27E: S1-2, 18-19, 24-36	San Joaquin Kit Fox
32S28E: S1-3	Tipton Kangaroo Rat, San Joaquin Kit Fox
32S28E: S4-6, 10-12, 19	San Joaquin Kit Fox
32S28E: S22	Tipton Kangaroo Rat

Section	Species
32S28E: S30-31	San Joaquin Kit Fox
32S29E: S1-16, 21-28, 32-36	San Joaquin Kit Fox
32S30E: S5-8, 17-20, 27-34	San Joaquin Kit Fox
32S36E: S1-2, 11-15, 22-27, 34-36	Desert Tortoise
32S37E: S1-36	Desert Tortoise
32S38E: S1-36	Desert Tortoise
32S39E: S1-36	Desert Tortoise
32S40E: S2-35,	Desert Tortoise