

ATTACHMENT K

**SPECIAL-STATUS SPECIES HIGH-PRIORITY NEEDS WITHIN
AREAS POTENTIALLY AFFECTED BY THE CENTRAL
VALLEY PROJECT**

TABLE K-1

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POTENTIALLY AFFECTED BY THE CENTRAL VALLEY PROJECT**

Special-Status Species	Actions by Tool
AMPHIBIANS	
California red-legged frog <i>Rana aurora draytonii</i>	<i>Acquirement</i> - Protect habitat for the California red-legged frog by acquiring land in title or easement, or acquiring development rights.
	<i>Removal of Nonnative Species</i> - Participate in ongoing efforts to control bullfrog populations as deemed appropriate.
	<i>Reestablishment of Species</i> - Provide reintroduction of the species as is determined appropriate to existing public lands.
	<i>Improve Habitat</i> - Participate in ongoing habitat enhancement activities, and implement the protection strategy plan as outlined below.
	<i>Research, Studies, and Planning</i> - (a) Survey distribution and map suitable habitat areas using ARCINFO GIS; (b) Develop a protection strategy plan; (c) Identify habitat for conservation activities; and (d) Contribute to ongoing bullfrog control research.
REPTILES	
blunt-nosed leopard lizard <i>Gambelia (crotaphytus) silus</i>	<i>Acquirement</i> - Acquire from willing sellers, title or easement of properties appropriate for the species conservation plan.
	<i>Improve Habitat</i> - Implement the habitat conservation and management plan, prioritizing protection efforts of natural lands in western Madera County.
	<i>Research, Studies, and Planning</i> - (a) Survey all accessible parcels for existence and map appropriately using ARCINFO GIS; (b) Identify appropriate natural lands in western Madera County; and (c) Develop a conservation plan including protection and acquisition priorities and specific management prescriptions.
giant garter snake <i>Thamnophis gigas</i>	<i>Acquirement</i> - Protect habitat for the giant garter snake by acquiring land or easements.
	<i>Improve Habitat</i> - Implement BMP's and O&M guidelines from the protection strategy plan that provide a better quality of habitat including a reduction of toxic chemical concentrations, and will provide enhancement of habitats areas which are or could provide habitat for the giant garter snake.
	<i>Research, Studies, and Planning</i> - (a) Identify giant garter snake habitat; (b) Survey species distribution and map in ARCINFO GIS; (c) Complete protection strategy plan; (d) Identify giant garter snake rice industry benefits; and (e) Develop and publish O&M guidelines for agricultural activities in giant garter snake habitat.
MAMMALS	
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	<i>Acquirement</i> - Protect habitat for the San Joaquin kit fox by acquiring land in title, easement, or the acquirement of development rights to conserve the species, including the maintaining of habitat corridors where land use changes threaten the species with habitat fragmentation.
	<i>Improve Habitat</i> - Implement the habitat conservation and management plan.

TABLE K-1. CONTINUED

Special-Status Species	Actions by Tool
	<p><i>Research, Studies, and Planning</i> - (a) Survey species distribution and map using ARCINFO GIS; (b) Map existing and proposed conversions of land use from native habitats using ARCINFO GIS; (c) Identify use of agricultural lands by the San Joaquin kit fox; and develop agricultural guidelines for the species using this information in conjunction with the American Farmland Trust; and (d) Develop a species conservation plan with protection and acquisition priorities, and specific management prescriptions, including: 1) the identification of habitat of these conservation of the species, 2) the protection of habitat of the species specifically prioritizing natural lands in western Madera county subsequent to surveying all accessible parcels, and 3) the completion of protection strategy which utilizes the land retirement program within the CVPIA.</p>
<p>San Joaquin Valley woodrat <i>Neotoma fuscipes</i> ssp. <i>Riparia</i></p>	<p><i>Acquirement</i> - Purchase appropriate habitat from willing sellers to be added to the San Joaquin River NWR.</p>
	<p><i>Reestablishment of Species</i> - Provide reintroduction of the species as is determined appropriate to existing public lands.</p>
	<p><i>Improve Habitat</i> - Implement a fire management plan as outlined below, and protect, enhance, and restore riparian habitats and corridors to conserve resources for the species.</p>
	<p><i>Research, Studies, and Planning</i> - (a) Survey and map GIS; (b) Research genetics coordinating with any ongoing work underway; (c) Monitor known populations using non-intrusive methodologies; (d) Establish a species conservation/management plan which will include: 1) the completion of a fire management plan for Caswell Memorial State Park for prevention of excessive burns which might remove too much of the species limited habitat (The plan must provide for continued connectivity of cover to allow for appropriate levels of interbreeding), 2) the completion of a preplan for the reestablishment of the species to suitable habitats including any needed biological and ecological research regarding the parameters which will influence these introductions to unoccupied habitat, 3) the coordination with interested participants to develop one or more safe harbor-like HCP's to aid in conserving the species, and 4) to provision for additional mapping needs for HCP processes; (e) initiate efforts to elicit input from landowners regarding BMP's and other cooperative efforts to aid conservation including funding the publishing of pamphlets and information sheets; and (f) Initiate a research and monitoring program providing annual monitoring of known populations using quantitative but no intrusive methods.</p>
<p>riparian brush rabbit <i>Sylvilagus bachmani</i> ssp. <i>Riparius</i></p>	<p><i>Reestablishment of Species</i> - Establish at least three additional wild populations of the species in the San Joaquin Valley which include areas of flood refugia and a working fire management plan.</p>
	<p><i>Improve Habitat</i> - Construct flood refugia adjacent to habitat at Caswell Memorial State Park including construction of suitable knolls and the establishment of brush and connecting corridors.</p>
	<p><i>Acquisition</i> - Purchase appropriate habitat from willing sellers to be added to the San Joaquin River National Wildlife Refuge.</p>

TABLE K-1. CONTINUED

Special-Status Species	Actions by Tool
	<p><i>Research, Studies, and Planning</i> - (a) Survey potential habitat for the species on the lower Stanislaus River and the San Joaquin River downstream from Fremont Ford State Park; (b) Research genetics coordinating with any ongoing work underway; (c) Coordinate with interested participants to develop one or more safe harbor-like HCP's to aid in conserving the species; (d) Develop a cooperative recovery program which will implement management elements detailed by Williams (1993); (e) Implement studies which will determine biological information needed for management and design of the program; (f) Protect species by implementing brush and fire control measures to reduce the changes of an intense wildfire consuming too much woody riparian and eliminating necessary brush cover, including the coordination of similar management planning efforts on Corps of Engineers easement properties; (g) Determine likely flood depth requirements; (h) Provide for additional mapping needs for the HCP processes; (i) Initiate efforts to elicit input from landowners regarding BMP's and other cooperative efforts to aid conservation including funding the publishing of pamphlets and information sheets; (j) Develop a preplanning effort to reestablish any extirpated populations; and (k) Institute quantified annual monitoring to track status and trends of the species populations at Caswell Memorial State Park.</p>
<p>Buena Vista Lake ornate shrew <i>Sorex ornatus</i> ssp. <i>Relictus</i></p>	<p><i>Research, Studies, and Planning</i> - (a) Survey and map all accessible suitable habitat in the Tulare basin for the species placing into ARCINFO GIS; (b) Research genetics coordinating with any ongoing work underway; (c) Design and implement biological and ecological studies to determine the recovery and management needs of the species; (d) Provide for both short-term and long-term release of water by gravity flow from existing conveyance facilities to provide suitable habitat for the species; (e) Continue negotiations and provide positive incentives to landowners for the protection of the Kern Lake population of the species; (f) Coordinate to ensure an appropriate consideration of species needs are met in the Kern Fan Water Bank and Tulare Elk Reserve planning processes; (g) Develop a preplan for the introduction of the species into suitable habitat in the Tulare basin; and (h) Monitor species populations annually.</p>
<p>San Joaquin kangaroo rat <i>Dipodomys nitratooides</i> ssp.</p>	<p><i>Improve Habitat</i> - Implement the management plan including efforts to expand the habitat area by potentially retiring additional leased agricultural lands on base.</p> <p><i>Research, Studies, and Planning</i> - (a) Complete studies on the relationships and taxonomic identify of isolated populations of subspecies of San Joaquin kangaroo rats; (b) Institute research and monitoring of known populations peripheral to historic range of the Fresno kangaroo rate; (c) Develop a management plan; (d) Continue and intensify habitat management studies through the Endangered Species Recovery Planning Program and/or other agencies; (e) Coordinate with the Department of Defense (USN) to assist in protecting the species; and (f) Determine fire management objectives.</p>
<p>Fresno kangaroo rat <i>Dipodomys nitratooides</i> <i>exilis</i></p>	<p><i>Acquirement</i> - Acquire from willing sellers, title or easement of properties appropriate for the species conservation plan.</p> <p><i>Improve Habitat</i> - Implement the habitat conservation and management plan.</p> <p><i>Research, Studies, and Planning</i> - (a) Continue and intensify efforts to locate and map populations of the Fresno kangaroo rat within historic ranges within ARCINFO GIS; (b) Complete studies on the relationships and taxonomic identity of isolated populations of subspecies of San Joaquin kangaroo rats; (c) Institute research and monitoring of known populations peripheral to historic range of the Fresno kangaroo rat; (d) Develop and conservation plan, including protection and acquisition priorities, and specific management prescriptions; (e) Identify and protect natural lands in western Madera County subsequent to surveying all accessible parcels; and (f) Develop a preplan to reintroduce the species to suitable habitat, including any additional information needs.</p>

TABLE K-1. CONTINUED

Special-Status Species	Actions by Tool
INVERTEBRATES	
<p>Doyen's Trigonoscuta dune weevil <i>Trigonoscuta doyeri</i></p>	<p><i>Reestablishment of Species</i> - Establish at least four viable populations of the species through introductions into suitable habitat.</p> <p><i>Research, Studies, and Planning</i> - (a) Locate and map the extant population of the species into ACRINFO GIS; (b) Research the biology and natural history of the species to determine its habitat and management needs; (c) Determine the ownership and use of the land parcel(s) at the site of the extant population of the species; (d) Pursue opportunities to implement the measures needed to conserve the species; and (e) Encourage the publication of the scientific name and description of the species.</p>
PLANTS	
<p>large-flowered fiddleneck <i>(Amsinckia grandiflora)</i></p>	<p><i>Acquirement</i> - Protect habitat for the large-flowered fiddleneck by acquiring land in title or easement, or acquiring development rights.</p> <p><i>Reestablishment of Species</i> - Provide care for existing populations of large-flowered fiddleneck, and implement the long-term plan established below.</p> <p><i>Improve Habitat</i> - Restore existing bunch grass type habitat areas.</p> <p><i>Research, Studies, and Planning</i> - (a) Identify and map (ARCINFO GIS) existing potential habitat by using soil maps and digital elevation data; (b) Develop a protection strategy plan; (c) Establish a long-term management agreement for all lands acquired for the species; and (d) Monitor existing known populations.</p>
<p>Palmate-bracted birds-beak <i>Cordylanthus palmatus</i></p>	<p><i>Acquirement</i> - Protect habitat and existing populations of the palmate-bracted bird's-beak by acquiring title, easement, or development rights associated with management purposes for conservation of the species.</p> <p><i>Improve Habitat</i> - Participate in ongoing habitat enhancement activities, and implement protection strategy and conservation/management plan as outlined below.</p> <p><i>Research, Studies, and Planning</i> - (a) Survey, identify and map habitat distribution of the species using ARCINFO GIS; (b) Research ecology of the palmate-bracted bird's-beak including hydrology, soil characteristics, genetics, fire ecology pollinators, exotic competition, and other habitat factors; (c) Develop a conservation plan, including protection and acquisition priorities, and specific management prescriptions; and (d) Identify and protect natural lands in western Madera county subsequent to surveying all accessible parcels.</p>
<p>Kern mallow <i>Eremalche kernensis</i></p>	<p><i>Research, Studies, and Planning</i> - (a) Map all subpopulations of the species and place into ARCINFO GIS; (b) Research genetics, coordinating with any ongoing work underway; (c) Do ecological research study of the conservation significant of pollinators, fire, grazing, exotic species competition, reproductive biology (including introgression where applicable), soil characteristics, etc., in CVP affected area; (d) Do population viability analyses including population structure and census data; (e) Coordinate with Chevron's Lokern mitigation bank and the Kern County Valley Floor HCP planning processes to ensure the protection of at least 90 percent of the remaining occupied habitat; (f) Do studies on the effects of herbicides and pesticides spraying on pollinators; and (g) Begin a monitoring program including the establishment of photo points, field data sheets (including insect visitors, grazing observations, soil moisture and phenologic conditions), and visit each population 1-4 times per year.</p>
<p>Bakersfield cactus <i>Opuntia basilaris</i> var. <i>treleasei</i></p>	<p><i>Acquirement</i> - Acquire lands in fee title or by easement from willing sellers as needed to meet the goals that cannot be protected in a timely manner via the implementation of the HCP process.</p>

TABLE K-1. CONTINUED

Special-Status Species	Actions by Tool
	<p><i>Research, Studies, and Planning</i> - (a) Do population viability analyses including population structure and census data; (b) Research genetics, coordinating with any ongoing work underway; (c) Do ecological research study of conservation significant of pollinators, fire, grazing, exotic species competition, reproductive biology (including introgression, where applicable), soil characteristics, etc., in CVP affected areas; (d) Coordinate with Metropolitan Bakersfield HCP implementation and the Kern County Valley Floor HCP planning processes to protect at least 90 percent of the remaining occupied habitat; (e) Do studies on the effects of herbicides and pesticides spraying on pollinators; and (f) Begin a monitoring program including the establishment of photo points, field data sheets (including insect visitors, grazing observations, soil moisture and phenologic conditions), and visit each population 1-4 times per year.</p>
<p>Bakersfield smallscale <i>Atriplex tularensis</i></p>	<p><i>Acquirement</i> - Protect the Kern Lake site from the potential of agricultural, and municipal and industrial conversion by purchase or easement.</p>
	<p><i>Improve Habitat</i> - Protect the species by conserving habitat at the Kern Lake site including the negotiation and acquirement of a short-term water right and subsequent long-term water supply to maintain suitable habitat conditions.</p>
<p>oil neststraw <i>Stylocline citroleun</i></p>	<p><i>Improve Habitat</i> - Until exact sites of occurrence are known, protect the general areas of all known occurrences of the species from disturbance.</p>
	<p><i>Research, Studies, and Planning</i> - (a) Survey, map existing populations in ACRINFO GIS, and characterize microsites within the Elk Hills area; (b) Map suitable habitat throughout appropriate ecological zones of Kern County for new populations in ACRINFO GIS; (c) Begin a monitoring program including the establishment of photo points, field data sheets (including insect visitors, grazing observations, soil moisture and phenologic conditions), and visit each population 1-4 times per year.</p>
<p>Keck's sidalcea <i>Sidalcea keckii</i></p>	<p><i>Improve Habitat</i> - Implement the habitat protection plan as appropriate, depending on the location of new populations and cooperation of landowners, and seek permission to visit known occurrences on private lands to look for additional occurrences and remove exotic weeds that may be crowding out the species.</p>
	<p><i>Research, Studies, and Planning</i> - (a) Survey and map (focusing on public and private lands allowing access) potential habitat of the species to locate any new populations placing into ACRINFO GIS; (b) Develop and institute a safe harbor-like program; (c) Establish a conservation plan, including habitat protection for the species; (d) Preplan reintroduction strategies and studies; and (e) Do quantified annual monitoring of any known populations subsequent to approval by landowners.</p>

TABLE K-1. CONTINUED

Special-Status Species	Actions by Tool
Gabbro Soils Habitat	<i>Acquirement</i> - Acquire the Gabbro Soils Plant Preserve.
	<i>Improve Habitat</i> - Implement the acquisition and management plan for the preserve.
	<i>Research, Studies, and Planning</i> - Develop an acquisition and management plan for the preserve which includes fire management planning.
Vernal Pool Habitat	<i>Improve Habitat</i> - Implement the vernal pool protection strategy plan to protect vernal pool habitat.
	<i>Research, Studies, and Planning</i> - (a) Survey, identify, and map vernal pool complex habitats into ARCINFO GIS; (b) Research the ecology of vernal pool species; (c) Develop a protection strategy plan which specifically prioritizing actions regarding Sacramento orcutt grass populations near the Sacramento Landfill, the Springtown Alkali Sink area, and Ollcott Lake, Vina Plains, Haystack Mountain, and Table Mountains areas; (d) Develop and disseminate guidelines to agricultural and Municipal and Industrial developers on avoidance of vernal pool areas (slick spots); and (e) Investigate the potentials for artificial vernal pool creation.
Riparian Habitat	<i>Acquirement</i> - Acquire title or development rights for riparian habitats that contribute to the conservation of listed and proposed riparian and aquatic species.
	<i>Improve Habitat</i> - Implement the riparian management plan mentioned below.
	<i>Research, Studies, and Planning</i> - (a) Survey and map (ARC/INFO GIS) suitable riparian habitat; (b) Develop protection strategies and an implementation plan which will identify and protect riparian habitat suitable for the conservation of listed and proposed riparian and aquatic species; (c) Consider sites with potential for natural reversion to riparian functionality where applicable; and (d) Wherever possible acquire associated water rights simultaneous to land acquisitions.
Woodland Habitat	<i>Acquirement</i> - Acquire woodland habitats in fee or easement to provide for associated sensitive species.
	<i>Research, Studies, and Planning</i> - Provide appropriate planning and management efforts associated with the acquisition efforts mentioned previously.
General Chemical Use	<i>Research, Studies, and Planning</i> - Promote cost-share voluntary grant programs that reduce chemical uses including participation in ongoing programs such as BIOS and BIFS administered by the University of California.