DRAFT

ENVIRONMENTAL ANALYSIS

for

California Rangeland Conservation Coalition Voluntary Local Program

Under the

California Endangered Species Act

LEAD AGENCY:

State of California
The Resources Agency
Department of Fish and Game
1416 Ninth Street
Sacramento, California 95814

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SCH#2008022078

November 2009

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PREFACE

This Environmental Analysis (EA) addresses the California Rangeland Conservation Coalition Voluntary Local Program proposed for approval and issuance of an authorization pursuant to Section 2086 of the California Fish and Game Code (FGC) and implementing regulations in Section 786 *et seq.* of Title 14 of the California Code of Regulations (CCR). Upon the approval of a Voluntary Local Program (VLP) (which must include management practices), the Take of candidate, threatened, or endangered species incidental to routine and ongoing agricultural activities that occurs while the specified management practices are followed is not prohibited (FGC §2086(c)).

The VLP is a certified regulatory program pursuant to California Environmental Quality Act (CEQA) Section 15251(p). The California Department of Fish and Game (DFG) is the Lead Agency and has prepared this draft EA. The procedures followed to prepare this EA are consistent with the CEQA requirements for a certified regulatory program, as provided in PRC §21080.5 and Article 17 of the State CEQA Guidelines (CCR §§15250 – 15253). The DFG procedures are set forth in CCR §786 *et seq.*

ACRONYMS and ABBREVIATIONS

CCA	California Cattlemen's Association
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CRCC	California Rangeland Conservation Coalition
DFG	Department of Fish and Game, State of California
EA	Environmental Analysis
EIR	environmental impact report
ESA	federal Endangered Species Act
FGC	Fish and Game Code
FWS	U.S. Fish and Wildlife Service
NOP	notice of preparation
NRCS	U.S. Natural Resources Conservation Service
PRC	Public Resources Code
SHA	safe harbor agreement
ssp	sub-species
spp	species
VLP	voluntary local program
WCB	California Wildlife Conservation Board

ENVIRONMENTAL CHECKLIST

1. Project title: California Rangeland Conservation Coalition Programmatic Safe Harbor Agreement and Voluntary Local Program
2. Lead agency name and address: California Department of Fish and Game, Habitat Conservation Planning Branch, 1416 Ninth Street, Suite 1260, Sacramento, CA 95814
3. Contact person and phone number: Ms. Jennifer Hogan (916) 651-8711
4. Project location: Non-federal rangelands in Butte, Glenn, Shasta, and Tehama counties
5. Project sponsor's name and address: California Cattlemen's Association, 1221 H Street, Sacramento, CA 95814
6. General plan designation: Butte County, Grazing and Open Land; Glenn County, Shasta County, Agriculture, Natural Resource Protection, Open Space; Tehama County, Upland Agriculture. Valley Floor Agriculture.
7. Zoning: Butte County: TM-40 thru TM-160, A-40 thru A-160, FR-40 thru FR-160, R-C, C-F, TP-160, PA-C. Shasta County: A-C, A-G, AP, EA, HP, OS. Tehama County; E-A, AP, NR.

8. Description of project:

The California Cattlemen's Association (CCA) is requesting approval of the California Rangeland Conservation Coalition Programmatic Safe Harbor Agreement and Voluntary Local Program (CRCC VLP) and issuance of a Take authorization pursuant to Section 2086 of the California Fish and Game Code and implementing regulations in Section 786 *et seq.* of Title 14 of the California Code of Regulations. The CRCC VLP is a coordinated approach among CCA, the Department of Fish and Game (DFG) and the U.S. Fish and Wildlife Service (FWS) that covers Take of candidate, threatened, or endangered species incidental to routine and ongoing agricultural activities that occurs while specified habitat management practices are implemented by non-federal landowners. The VLP is a Certified Regulatory Program pursuant to CEQA Section 15251(p). The CRCC VLP becomes effective upon issuance of a Take authorization pursuant to §2086 and will be in effect for 50 years.

The purpose of the programmatic CRCC VLP is to encourage non-federal landowners to voluntarily enhance, restore, and maintain habitat for sensitive, candidate, threatened and endangered species that benefit from maintenance of ranching activities. In exchange for voluntarily enhancing sensitive species habitat, landowners who enroll in the program and comply with all program requirements will receive Take authorization for state and federally-listed Covered Species associated with the restoration and enhancement, routine and ongoing agricultural activities, and returning the property to baseline. Without the protection afforded through the incidental Take authorization, landowners would likely not enhance habitat conditions for state and federally-listed species. The programmatic CRCC VLP will cover non-federal lands that are managed as rangeland within the CRCC focus area within Butte, Glenn, Shasta, and Tehama counties. Individual lands to be enrolled will be identified by the Program Administrator. The CRCC VLP will authorize the Take of eight (8) state-listed species and enhance habitat for 15 state and/or federally-listed species and California Species of Special Concern, as well as three (3) Species of Conservation Concern.

Under the CRCC VLP, the CCA as the Program Administrator will hold the incidental Take authorizations and enroll individual landowners, lessees, or land managers (collectively referred to as Cooperators) into the CRCC VLP through individual Cooperative Agreements. For each enrolled property, the baseline conditions must be established prior to enrollment and shall be based upon a survey of the habitat on the property. Baseline evaluations will identify the species to be covered, estimate the population on the property of each Covered Species and Species of Conservation Concern and/or estimate the acreage of suitable habitat, and include a description of the suitable habitat or other relevant habitat features utilized by the Covered Species and Species of Conservation Concern on the property. In order to receive the protections regarding Take of Covered Species specified in the CRCC VLP, a Cooperator must maintain on the enrolled property the same amount and general quality of habitat for the Covered Species.

DFG and FWS will work with individual landowners and the Program Administrator to determine which species will be covered under individual Cooperative Agreements. The CRCC VLP includes a list of beneficial activities for each Covered Species and Species of Conservation Concern. Cooperative Agreements will contain a detailed description of the beneficial activities the landowner will undertake to enhance and manage habitat for Covered Species and Species of Conservation Concern. DFG and FWS will review all Cooperative Agreements prior to the Program Administrator signing a Cooperative Agreement. Prior to approval, DFG and FWS will ensure that each Cooperative Agreement will minimize and mitigate for impacts to Covered Species and Species of Conservation Concern and provide a net conservation benefit for Covered Species and Species of Conservation Concern. Once it is determined that the Cooperative Agreement would result in a net conservation benefit for Covered Species and Species of Conservation Concern, DFG and/or FWS will authorize the Program Administrator to sign the Cooperative Agreement. Upon signing a Cooperative Agreement, the Program Administrator will issue a Certificate of Inclusion to a Cooperator authorizing incidental Take of state and federally-listed Covered Species on the

enrolled property for habitat enhancement, management, and routine ranching activities. The Cooperative Agreements developed pursuant to this VLP will be for a term of at least 10 years, and shall be renewable.

Landowners may withdraw from the CRCC VLP at any point and return the property to baseline. The Take of state and federally-listed Covered Species associated with returning a property to baseline is authorized through the CRCC VLP. To return the enrolled property to baseline conditions, a Cooperator must demonstrate that baseline conditions were maintained and that activities necessary to achieve a net conservation benefit were carried out for the duration of the Cooperative Agreement. The Cooperator must employ measures appropriate to avoid or minimize the level of Take, and no species or habitat shall be adversely affected until the Cooperator has given the Program Administrator or DFG/FWS prior notice of at least 90 days to provide an opportunity to relocate individual Covered Species.

The CRCC VLP also contains a provision to authorize Take of state and federally-listed Covered Species on lands adjacent to or in the vicinity of enrolled properties (Neighboring Lands). It is DFG's and FWS' goal to minimize any concerns that neighboring landowners may have that the actions of enrolled landowners will inadvertently encumber them. A Neighboring Landowner may receive incidental Take authority provided: (1) s/he enters into a written agreement with the Program Administrator; (2) such written agreement specifies the baseline conditions on the Neighboring Land; and (3) activities resulting in such incidental Take are due to routine and ongoing agricultural activities and are consistent with maintaining the baseline conditions on the adjacent property.

The Program Administrator is responsible for monitoring species and habitat conditions on enrolled properties and reporting annually to DFG and FWS on the status of species and habitats, and overall program operation.

9. Surrounding land uses and setting: Briefly describe the project's surroundings: (Reference 5)

Butte County: Butte County has two topographical sections, a valley area which is the northeast portion of the Sacramento Valley and a foothill/mountain region east of the Valley. Topography includes the relatively flat Sacramento Valley floor and associated alluvial fans, with elevations from 60 to 200 feet, extensive rolling foothills with an elevation range from 200 to 2100 feet, and the Cascade and Sierra Nevada Mountain Ranges, with elevations from 2100 to over 6000 feet. Soil types include the deep, nearly level, very fertile valley basin and alluvial soils of the Sacramento Valley which support intensive agriculture; the shallow, gentle to steep sloping, less fertile residual soils of the foothill areas; and shallow to deep, moderate to steep sloping residual soils of the mountain areas. Butte County has a typical Mediterranean climate with hot dry summers and cool wet winters. Butte County contains abundant and diverse vegetation types including: non-native agricultural crop and pasture regions of the valley; native foothill and mountain oak and conifer forest communities; dry land chaparral areas; and water-oriented riparian and marshland areas of restricted and diminishing distribution. About 28% of the County is used at least part of the year for grazing cattle, sheep, goats and other livestock on natural vegetation which varies by season and elevation. Consequently, livestock which graze in the valley and low foothill areas in the winter are frequently moved to summer pasture on timberland and other mountain areas. Because the per-acre production and value of grazing land is low relative to other uses, it is usually susceptible to development pressures if other prerequisites for development exist.

Glenn County: Glenn County topography is typified by steeper terrain in the Coast Range in the western portion of the county trending down to relatively flat features of the Sacramento Valley along its eastern boundary. Elevations range from 100 feet in the valley floor portion to almost 7500 feet in the Coast Range mountains. As a result of such major changes in elevation, Glenn County includes a great variety of climatic, soils and geographic conditions which, in turn, influence the distribution, variety, and abundance

of the plant communities and animal species within the county. Glenn County contains seven major vegetation associations: blue oak-foothill pine woodlands, montane forest, chaparral, riparian, wetlands, and native and non-native grasslands. Agriculture is the most extensive land use in Glenn County and the most significant component of the county's economy. Two-thirds of Glenn County's 1,317 square miles are comprised of agricultural croplands and pasture. Grazing lands are found primarily in the central foothills and to the west in the Coast Range. The land that is now devoted to agriculture in the county was historically covered by native grasslands and riparian forest.

Shasta County: Shasta County is situated where the Central Valley of California meets the convergence of the Klamath and Coast Ranges to the northwest and west, with the Cascade Mountain Range to the northeast and east. Elevations in Shasta County range between 400 and almost 7000 feet. Soil types include the shallow, gentle to steep sloping, less fertile residual soils of the foothill areas; and shallow to deep, moderate to steep sloping residual soils of the mountain areas. The majority of soils in Shasta County are unsuitable for cultivated agriculture. Shasta County has a typical mediterranean climate with hot dry summers and cool wet winters. Coniferous forest is the predominant vegetation in the mountainous regions of the County, but in many areas this cover has been modified by human activities. Extensive human-caused modification has also occurred in the Sacramento and Fall River Valleys. These areas are characterized by cultivated and pasture lands, oak woodlands, and grasslands.

Tehama County: The western boundary of Tehama County is the eastern side of the Pacific Coast Range, and the eastern boundary is the ridgeline of the Sierra Nevada Mountains. The area contains rolling foothills, fertile valleys, flat-topped buttes, and vast rangelands. Elevations in Tehama County range from 300 feet to over 8000 feet. Tehama County's strong agricultural background grew from the fertile valley lands along the Sacramento River and the expansive foothills where grazing activities are prevalent. The climate of Tehama County varies significantly between the valley and mountain areas, depending primarily on elevation. Hot, dry summers and temperate winters generally characterize the valley regions, while mountainous areas experience warm, dry summers and colder winters. Cattle, the primary livestock, are wintered in the lower foothills of the County and summered in the mountain meadows, although some livestock producers keep cattle on irrigated pasture on the valley floor during the summer months.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

U.S. Fish and Wildlife Service, Natural Resources Conservation Service

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

	Aesthetics	☒	Agriculture Resources	Air Quality
☒	Biological Resources	☒	Cultural Resources	Geology/Soils
	Hazards & Hazardous Materials		Hydrology/Water Quality	Land Use/Planning
	Mineral Resources		Noise	Population/Housing
	Public Services		Recreation	Transportation/Traffic

Utilities/Service Systems ☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ANALYSIS will be prepared as required by the Certified Regulatory Program.

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Signature Date

_____ _____

Printed Name Title

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project

falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significance criteria or threshold, if any, used to evaluate each question; and
b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?				☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			☒	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				☒

I. There will be some changes to the appearance of the area. Some degraded natural vegetation will be enhanced, and ponds or wetlands created. Some agricultural areas may be changed from cropland and orchard to riparian, wetland, woodland, chaparral, and grassland communities. Although landowners may choose to retain habitat when withdrawing from the program, if they choose to return to baseline the aesthetic view will change, but will become as it was before enhancement of habitat which will not degrade the aesthetics below baseline views. Returning to baseline would be returning to existing conditions. The intention is for vegetation and wildlife to increase, making a generally positive or neutral change in aesthetics, therefore, these issues will not be further addressed in the Environmental Analysis (EA).

II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?		☒		

II. The CRCC VLP is designed to provide an incentive for rangeland landowners to voluntarily enhance habitat values while maintaining economic vitality for ranching. Some areas within the ranching landscape will be modified to restore and enhance wildlife habitat values; however, all enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. Wildlife habitat enhancement on existing ranchlands does not conflict with existing zoning or Williamson Act contracts.

When wildlife habitat adjoins farmed land, there is potential for insects and other animals to damage crops (foraging on adjacent fields, for instance) or for the presence of listed species to affect a neighbor's ability to continue farming or ranching. The federal Safe Harbor Policy (July 1999) authorizes FWS to use the maximum flexibility allowed under the ESA in addressing neighboring properties under Safe Harbor Agreements (SHA) and associated Take authorizations, including granting of incidental Take authority to the owners of neighboring lands, where occupation of neighboring lands by state and federally-listed Covered Species is expected as a result of the SHA. The joint CRCC VLP/SHA contains a provision for neighboring landowners to obtain Take authority for their routine and ongoing agricultural activities. By including a neighboring landowner provision, the CRCC VLP identifies typical activities on neighboring lands as routine and ongoing agricultural activities, and therefore the take associated with those activities is a routine and ongoing agricultural activity and is not prohibited. The CRCC VLP/SHA establishes the California Cattlemen's Association as the Program Administrator who will be the contact for neighboring landowners to discuss concerns and options. These potential impacts on agricultural resources are thus reduced to less than significant, and will be addressed in Chapter 4 of the EA. (Reference 1, 2, 3, 5 and 6; page xxx)

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?				☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?				☒
e) Create objectionable odors affecting a substantial number of people?				☒

III. The project would include operation of tractors and well pumps for habitat enhancement and routine and ongoing ranching activities. The project may also involve practices which generate relatively small amounts of dust. The CRCC VLP would enhance native habitats on lands that have been disturbed in the past by routine ranching activities. The proposed project would not be expected to generate fugitive dust in greater quantities or concentrations than has occurred over past uses. The incentives offered by the program may encourage increased acreages and long term maintenance of native habitat and thereby reduce bare soils that contribute wind born particulate matter. Enrolled properties will comply with local air district rules and regulations for (as applicable): fugitive dust, agricultural burning regulations, and registration of all diesel-fueled stationary (can include portable) agricultural pumps with the local air district (new state regulation). This project may have short-term impacts only during implementation of the restoration or return to baseline but overall will not increase any criteria pollutant. The proposed project would not include any housing or lodging for humans, and therefore would not have the potential to expose sensitive receptors such as hospital patients, children, and the chronically ill. The habitat enhancements will occur on private properties in sparsely-populated areas of the region. If odors are generated from time to time by application of herbicides or fertilizer, by decomposing plants, or from routine and ongoing livestock management, such odors are not likely to be perceptible to anyone other than ranch workers directly involved in the project. The level of the activities due to the project would not be significantly different from current conditions, therefore, impacts as a result of the project will be less than significant and air quality will not be further addressed in the EA. (Reference 4)

IV. BIOLOGICAL RESOURCES -- Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		☒		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish		☒		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
and Game or US Fish and Wildlife Service?				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			☒	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				☒

IV. The purpose of the CRCC VLP is to encourage non-federal landowners to voluntarily enhance, restore, and maintain habitat for sensitive, candidate, threatened and endangered species that benefit from maintenance of ranching activities. Some enhancement and restoration activities may result in temporary disturbance to sensitive plant communities such as riparian, wetlands, and vernal pools that support Covered Species. However, the enhancement and restoration are intended to result in increased habitat and improved habitat quality including enhanced habitat connectivity across the ranching landscape.

In exchange for voluntarily enhancing sensitive species habitat, landowners who enroll in the CRCC VLP and comply with all program requirements will receive Take authorization for state and federally-listed Covered Species associated with routine and ongoing agricultural activities. The Take of state and federally-listed Covered Species associated with returning a property to baseline is also authorized through the CRCC VLP. To return the enrolled property to baseline conditions, a landowner must demonstrate that baseline conditions were maintained, impacts were avoided and/or minimized, and that activities necessary to achieve a net conservation benefit were carried out. Without the protection afforded through the incidental Take authorization, non-federal landowners would likely not enhance habitat conditions for state and federally-listed species. In combination with Take avoidance and minimization measures (Section 2.1.4 of the EA), the voluntary habitat enhancement and restoration in advance of the Take offsets the impacts associated with the Take from routine and ongoing agricultural activities and the potential return to baseline conditions. Returning to baseline would be returning to existing conditions. Thus, the impacts are less than significant

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

with mitigation incorporated. The impacts to Biological Resources will be addressed in Chapter 4 of the EA. (Reference 1, 2 and 3)

V. CULTURAL RESOURCES -- Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?				☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		☒		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		☒		
d) Disturb any human remains, including those interred outside of formal cemeteries?		☒		

V. CESA and the implementing regulations prohibit the conversion of agricultural lands enrolled in a VLP to nonagricultural uses. Ground disturbance in association with routine and ongoing activities, including historic, present and future impacts, are considered to be ongoing environmental baseline activities. These are activities that would occur with or without the approval of this program and are ongoing activities over which the Department has no jurisdiction.. Ground disturbance may occur in association with habitat enhancement and return to baseline activities and may have the potential to effect cultural resources. For the purposes of the CRCC VLP, cultural resources are defined as prehistoric and historic archaeological sites, and resources of interest to Native American groups. According to the California Historic Resources Information System (CHRIS), the type of cultural resources that would be most likely to be encountered in the project area include chert and obsidian flakes (debitage), shell beads, stone tools, milling stones, and mortar holes. There is only a very remote possibility of finding Native American remains as a result of this program.

The CRCC VLP addresses a large number and a wide variety of activities over a very large geographic area. Given the nature of cultural resources sites, it is not possible to predict their locations with respect to potential work sites with any real accuracy. Specific work sites within the CRCC VLP are not reasonably foreseeable at this time, so it is infeasible to survey the area for this analysis. Consequently, analysis focused on (1) assessing and minimizing the potential for damage to significant cultural resources as a result of various types of activities authorized under the CRCC VLP, should any such resources be present on enrolled lands; and (2) developing strategies to ensure appropriate avoidance or mitigation of potential impacts.

Activities authorized under the CRCC will primarily occur on lands that have been used for ranching for many years. Most of the land has been disturbed by farming, livestock, vehicles, and various types of ranch equipment as part of these historic and ongoing ranching activities. This disturbance is considered part of the environmental baseline. The CRCC VLP activities in these disturbed areas are not expected to result in a substantial adverse change to a cultural resource. Land management activities beneficial to sensitive species, as well as return to baseline activities, that will result in new or greater ground disturbance will have the

potential to impact cultural resources on these sites.

In order to avoid or minimize impacts to cultural resources, a set of Best Management Practices (BMPs) have been developed to be implemented at each project site. The California Cattlemen's Association is the Program Administrator of the CRCC VLP. It is the Program Administrator's responsibility to assure that landowners implement the BMPs to the greatest extent practicable on all projects. Although routine and ongoing projects are part of the baseline conditions for cultural resources, implementing the BMPs during these activities but are recommended. Implementation of the BMPs will reduce the potential for impacts to cultural resources to less than significant.

Best Management Practices

The following BMPs will be recommended during activities to reduce the potential for impacts to cultural resources:

- *minimize ground disturbance,*
- *monitor grazing effects in riparian areas,*
- *adjust grazing management to reduce excessive use and erosion in riparian areas,*
- *stabilize eroding soils in riparian areas,*
- *leave artifacts where they are found,*
- *fence off known sites,*
- *relocate livestock congregating facilities and attractants (supplements) away from cultural sites,*
- *limit grading to original depth of ponds and ditch,*
- *when building up berms, use soil from a previously disturbed area,*
- *when repairing fences, use same post holes,*
- *avoid constructing new facilities on archaeological sites,*
- *avoid constructing new roads through archaeological sites,*
- *when discing, do not disc below previously disturbed depths,*
- *avoid driving off-road when area is muddy, and*
- *report any accidental disturbance to resources to the Program Administrator, who will notify DFG.*

If necessary, treatment measures can be developed in consultation with appropriate agencies and tribal representatives. Such measures could include relocating activities to avoid impacts to cultural sites to the maximum extent practicable, fencing to exclude livestock, conducting recovery excavations, capping the site to avoid further disturbance of artifacts, and/or other measures.

If land management activities beneficial to sensitive species will require ground disturbance in previously undisturbed areas or cause greater ground disturbance then was determined from baseline conditions, and will be carried out using federal funding, the federal agency (U.S. Fish and Wildlife Service, Natural Resources Conservation Service, etc.) will conduct all necessary cultural resources reviews and surveys. State and Federal agencies are mandated to avoid or minimize impacts to significant cultural resources through project design. If projects that will require ground disturbance in previously undisturbed areas do not use any federal funding, the Program Administrator and the Department will ensure that all necessary cultural resources reviews and surveys are conducted. Projects will be designed to avoid or minimize impacts to significant cultural resources. These activities would require avoidance of cultural resources during the initial

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

disturbance, so no additional actions would be necessary to return to baseline.

In the unlikely event that human remains of Native American origin are discovered, landowners will notify the Program Administrator, who will notify DFG, and comply with all federal and state laws relating to the disposition of Native American burials. Excavation of the site and all nearby areas reasonably suspected to overlie adjacent human remains will be halted until the County Coroner has been contacted to determine that no investigation of the cause of death is required, and, if the Coroner determines that the remains are Native American,

- *the Coroner has contacted the Native American Heritage Commission;*
- *the Native American Heritage Commission has identified the person or persons it believes to be the most likely descended from the deceased Native American; and*
- *the most likely descendent has made recommendations to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, unless the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.*

Implementation of the BMPs and reviews/surveys will reduce the potential for impacts to cultural resources to less than significant. Substantial impacts resulting from significant changes to the landscape that might affect cultural resources will not occur, therefore, these effects are considered less than significant and will not be further addressed in the EA. (References 8, 9, 10, 11, 12; page xxx)

VI. GEOLOGY AND SOILS -- Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				☒
ii) Strong seismic ground shaking?				☒
iii) Seismic-related ground failure, including liquefaction?				☒
iv) Landslides?				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?				☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				☒

VI. CESA and the implementing regulations prohibit the conversion of agricultural lands enrolled in a VLP to nonagricultural uses. Substantial impacts resulting from significant changes to the landscape that might affect geology and soils will not occur, therefore, these issues will not be further addressed in the EA.

VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		琿		☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				☒

VII. CESA and the implementing regulations prohibit the conversion of agricultural lands enrolled in a VLP to nonagricultural uses. Substantial impacts resulting from significant changes to the landscape that might expose people and property to hazards or hazardous materials will not occur. It is not expected that management practices would result in a substantial change in pesticide, herbicide or other agricultural chemical use; if a change occurs, it would involve focused management of herbicide and pesticide use on participating ranches where habitat is being enhanced to fit specific species needs. No impact related to hazards or hazardous materials will occur as a result of the CRCC VLP, therefore, these issues will not be further addressed in the EA.

VIII. HYDROLOGY AND WATER QUALITY -- Would the project:

a) Violate any water quality standards or waste discharge requirements?				☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
which would not support existing land uses or planned uses for which permits have been granted)?				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			☒	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			☒	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				☒
f) Otherwise substantially degrade water quality?				☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				☒
j) Inundation by seiche, tsunami, or mudflow?				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

VIII. CESA and the implementing regulations prohibit the conversion of agricultural lands enrolled in a VLP to nonagricultural uses. Substantial impacts resulting from significant changes to the landscape that might affect hydrology and water quality will not occur. If a change occurs, it would involve improved water quality on participating ranches where habitat is being enhanced and management practices altered (manage grazing impacts in wetlands and riparian areas). Some enhancement and restoration activities may result in temporary disturbance to drainages, streams, or rivers. Landowners conducting activities that could potentially impact a river, stream or lake are required to notify DFG pursuant to FGC §1602. If DFG determines that the activity could substantially adversely affect an existing fish and wildlife resource, a Lake or Streambed Alteration Agreement is required. The enhancement and restoration are intended to increase habitat, re-establish vernal pool hydrology, and improve habitat quality, hydrologic function, and water quality that will all benefit Covered Species. Activities that increase vegetation along waterways will help to protect soils and maintain stable river banks, thus protecting surrounding land uses from damage from flood waters. Impacts related to hydrology and water quality will be less than significant as a result of the VLP, therefore, these issues will not be further addressed in the EA.

IX. LAND USE AND PLANNING - Would the project:

a) Physically divide an established community?				☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				☒

IX. The CRCC VLP is designed to provide an incentive for rangeland landowners to voluntarily enhance habitat values while maintaining economic vitality for ranching. All enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. Wildlife habitat enhancement on existing ranchlands does not conflict with existing land use plans. There are no known habitat conservation plans or natural community conservation plans in effect for the four counties, although Butte County has initiated the preparation of such. Habitat enhancement and restoration for sensitive species will be a complementary and necessary activity under any future conservation plan, and the two programs can be expected to complement each other. No impact related to land use and planning will occur as a result of the VLP; therefore, these issues will not be further addressed in the EA.

X. MINERAL RESOURCES -- Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				☒

X. No impact related to mineral resources will occur as a result of the CRCC VLP, therefore, this issue will not be further addressed in the EA.

XI. NOISE -- Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			☒	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

XI. The CRCC VLP authorizes Take of state and federally-listed Covered Species associated with routine and ongoing agricultural activities which will include some common farming activities such as operation of tractors. These existing activities are a less than significant source of noise. Large-scale riparian/wetland habitat enhancement activities or activities to return the property to baseline conditions would result in temporary increased noise levels while the work is occurring. This scale of activity is anticipated to be uncommon, infrequent, and of short duration. Impacts related to noise will occur as a result of the CRCC VLP, but will be less than significant. Therefore, this issue will not be further addressed in the EA.

XII. POPULATION AND HOUSING -- Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☒

XII. All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. No impact related to population and housing will occur as a result of the CRCC VLP, therefore, these issues will not be further addressed in the EA.

XIII. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	
Fire protection?	☒
Police protection?	☒
Schools?	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Parks?				☒
Other public facilities?				☒

XIII. All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. No impact related to public services will occur as a result of the CRCC VLP, therefore, these issues will not be further addressed in the EA.

XIV. RECREATION

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				☒

XIV. The CRCC VLP is designed to provide an incentive for rangeland landowners to voluntarily enhance habitat values while maintaining economic vitality for ranching. All enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. Although recreation can contribute to maintaining economic vitality for ranches, the CRCC VLP does not authorize construction of facilities for nonagricultural uses. No impact related to recreation will occur as a result of the CRCC VLP, therefore, these issues will not be further addressed in the EA.

XV. TRANSPORTATION/TRAFFIC -- Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (*i.e.*, result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
change in location that results in substantial safety risks?				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				☒
e) Result in inadequate emergency access?				☒
f) Result in inadequate parking capacity?				☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				☒

XV. All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. No impact related to transportation or traffic will occur as a result of the CRCC VLP, therefore, these issues will not be further addressed in the EA.

XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the				☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
provider's existing commitments?				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?				☒

XVI. All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. No impact related to utilities and service systems will occur as a result of the CRCC VLP, therefore, these issues will not be further addressed in the EA.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		☒		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		☒		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				☒

XVII. In exchange for voluntarily enhancing sensitive species habitat, landowners who enroll in the CRCC VLP and comply with all program requirements will receive Take authorization for state and federally-listed Covered Species associated with routine and ongoing agricultural activities and return to baseline conditions. These activities will result in the incidental Take of listed species and/or their habitat. In combination with Take avoidance and minimization measures added to the program to mitigate these effects (Section 2.1.4 of the

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

EA), the voluntary habitat enhancement and restoration in advance of the Take offsets the impacts associated with the Take from routine and ongoing agricultural activities and the potential return to baseline conditions. Returning to baseline would be returning to existing conditions. Although a complete return to baseline for all landowners is authorized, it is not anticipated. As of June 2003, no landowner had withdrawn from the safe harbor program and exercised the right to return to baseline. (Reference 7) Thus, it is expected that the benefits of the program will be long term and the impacts are less than significant with mitigation incorporated. The impacts to Cultural Resources will be addressed in Chapter 3 of the EA. The impacts to Biological Resources will be addressed in Chapter 4 of the EA. (Reference 1, 2 and 3; page xxx)

When wildlife habitat adjoins farmed land, there is potential for indirect effects on adjacent land that in a worst-case scenario could lead to farmland being taken out of production. The joint CRCC VLP/SHA contains a provision for neighboring landowners to obtain incidental Take authority for their routine and ongoing agricultural activities thereby reducing the potential impact to less than significant. The potential impact on agricultural resources will be addressed in Chapter 4 of the EA. (Reference 1, 2 and 3; page xxx)

Note: Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151, Public Resources Code; Sundstrom v. County of Mendocino, 202 Cal.App.3d 296 (1988); Leonoff v. Monterey Board of Supervisors, 222 Cal.App.3d 1337 (1990).

REFERENCE LIST

1. Final Safe Harbor Policy, Federal Register: June 17, 1999 (Volume 64, Number 116)] [Notices] [Pages 32717-32726]

2. California Fish and Game Code §2086.

3. Regulations for Implementation of the California Endangered Species Act, Article 2. Take Incidental to Routine and Ongoing Agricultural Activities**,** CCR Title 14, §786 *et seq.*

4. Northern Sacramento Valley Air Basin (NSVAB) 2003 Air Quality Attainment Plan, (http://www.bcaqmd.org/FORMS/03%20Attainment%20Plan.pdf).

5. General Plans for Butte, Glenn, Shasta and Tehama counties.

6. California Department of Conservation, Williamson Act Program website (http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx)

7. Wilcove, David S. and Joon Lee, 2004. *Using Economic and Regulatory Incentives to Restore Endangered Species: Lessons Learned from Three New Programs*, Conservation Biology, Volume 18, No. 3, pp. 639-645.

8. California Office of Historic Preservation, California State Parks website (http://ohp.parks.ca.gov/?page_id=1066)

9. Kristina Roper, Sierra Valley Cultural Planning, personal communication, June 10, 2008.

10. Eric Allison and Amy Huberland, California State Historic Preservation Office, personal communication, June 20 and July 14, 2008, respectively.

11. PG&E San Joaquin Valley Operations and Maintenance Program HCP Draft EIS/EIR. Chapters 2 (Proposed Action and Alternatives) and 9 (Cultural Resources). Jones and Stokes Associates. March 2006.

12. Janice Offermann, Cultural Resources Specialist, California Department of Water Resources, personal communication, December 4, 2008.

EXECUTIVE SUMMARY

PURPOSE OF THIS ENVIRONMENTAL ANALYSIS

The California Rangeland Conservation Coalition members have developed a Programmatic Safe Harbor Agreement and Voluntary Local Program (CRCC VLP) to encourage the restoration and enhancement of wildlife and their habitats on non-federal rangelands. The California Cattlemen's Association (CCA) has requested approval of the VLP pursuant to Section 2086 of the California Fish and Game Code (FGC) and implementing regulations in Section 786 *et seq.* of Title 14 of the California Code of Regulations (CCR). Pursuant to the California Environmental Quality Act (CEQA), DFG is the lead agency and has prepared this Environmental Analysis (EA) to evaluate the impacts of the requested approval and Take authorization.

The VLP is a Certified Regulatory Program pursuant to CEQA Section 15251(p). The procedures followed to prepare this EA are consistent with the CEQA requirements for a certified regulatory program, as provided in PRC §21080.5 and Article 17 of the State CEQA Guidelines (CCR §§15250 – 15253). The DFG procedures are set forth in CCR §786 *et seq.* They serve as a functional equivalent to the CEQA process for VLPs that may have a significant effect on the environment.

The EA identifies short-term and long-term potentially significant effects on the environment, and addresses any growth-inducing and cumulative effects of the proposed project. The EA also identifies mitigation measures to reduce potentially significant impacts to a level below significance.

DESCRIPTION OF THE PROPOSED ACTION

STATUTORY AUTHORITY

An amendment to CESA in 1998 (Senate Bill 231) added §2086 which authorized the creation of VLPs for the enhancement of habitat in conjunction with routine and ongoing agricultural activities. Any taking of candidate, threatened, or endangered species incidental to routine and ongoing agricultural activities that occurs while the management practices in a VLP are implemented, is not prohibited (FGC §2086(c)). Subsequently, DFG adopted regulations to guide the development, review and approval of VLPs (CCR §786 *et seq.*).

PROPOSED PROJECT

The CCA is proposing to be the Program Administrator for the CRCC VLP. The CRCC VLP is a coordinated approach among CCA, DFG, and the U.S. Fish and Wildlife Service (FWS) to encourage non-federal landowners to voluntarily enhance, restore, and maintain habitat for sensitive, candidate, threatened and endangered species that benefit from maintenance of ranch lands. CCA is proposing to Take listed species through the DFG's VLP (§2086) and the FWS' Safe Harbor Agreement Program

(pursuant to Section 10(a)(1)(A) of the federal Endangered Species Act (ESA), Safe Harbor Agreement policy (64 CFR 32717) and regulations (64 CFR 32706), which implement the policy)). In exchange for voluntarily enhancing sensitive species habitat, landowners who enroll in the program and comply with all program requirements will receive authorization for incidental Take of state and federally-listed Covered Species associated with restoration, enhancement, and routine and ongoing agricultural activities. Landowners may withdraw from the CRCC VLP and return the property to baseline. The Take of state and federally-listed Covered Species associated with returning a property to baseline is authorized through the CRCC VLP. The CRCC VLP also contains a provision to authorize Take of state and federally-listed Covered Species on lands adjacent to or within the immediate vicinity of enrolled properties (Neighboring Lands). It is DFG's and FWS' goal to minimize any concerns that neighboring landowners may have that the actions of enrolled landowners will inadvertently encumber them. The CRCC VLP contains measures to avoid and minimize impacts to Covered Species, and will result in a net conservation benefit for those species.

Without the protection afforded through the incidental Take authorization, non-federal landowners would likely not enhance habitat conditions for state and federally-listed species. The programmatic CRCC VLP will cover non-federal lands that are managed as rangeland within the CRCC focus area within Butte, Glenn, Shasta, and Tehama counties (see Figure ES-1). Individual lands to be enrolled will be identified by the Program Administrator. The CRCC VLP becomes effective upon approval by DFG pursuant to §2086 and will be in effect for 50 years.

INTENDED USE OF THE ENVIRONMENTAL ANALYSIS

DFG intends to use this EA to consider whether to approve the proposed VLP and authorize the Take of State-listed Covered Species. Additional information considered includes reference materials and information gathered from experienced individuals (Section 6). Circulation of the EA for public review will aid DFG in identifying potentially significant impacts and mitigation measures to reduce those impacts to a level below significant. The EA and comments and input received from agencies and other interested parties provide DFG with the environmental analysis necessary to make a well-informed decision.

ENVIRONMENTAL SETTING, IMPACT ANALYSIS, AND MITIGATION MEASURES

EXISTING SETTING

The existing setting presented in this EA involves: physical conditions of typical rangelands in portions of Butte, Glenn, Shasta and Tehama counties; target vegetation communities; past and current landowner practices for enhancing wildlife habitat; and the barriers and disincentives for landowners to enhance habitat potentially occupied by sensitive and listed species. A description of the Covered Species that may be affected by the proposed beneficial and management activities is provided in Chapter 3.

Covered Species include candidate, threatened and endangered species identified by the State of California. There are also management measures included for Species of Conservation Concern, however approval of the CRCC VLP does not include take authorization for these species.

ENVIRONMENTAL IMPACT ANALYSIS AND MITIGATION MEASURES

Analyzing the impacts of a voluntary wildlife habitat enhancement program is considerably different in nature than the analysis of actions described in a more typical, public facility or private development environmental document. The environmental effects of a voluntary habitat enhancement program are expected to be beneficial. The enhanced habitat conditions for the Covered Species that will result because of the CRCC VLP would not have occurred without the incentive of the Take allowance provided to landowners.

Although the CRCC VLP is expected to result in an overall net conservation benefit for the Covered Species, individuals may be adversely affected as a result of the CRCC VLP. Landowners who enroll (Cooperators) may return their property to baseline conditions with 90 days notice without penalties or disincentives for withdrawing from participation (at which point their authorization to Take the species would expire). Restoration, enhancement, and routine and ongoing ranching activities on the enrolled properties and neighboring lands could also result in incidental Take through harm, harassment, injury, or death of Covered Species. Mitigation measures to avoid and reduce impacts associated with routine and ongoing ranching activities and returning a property to baseline were added to the CRCC VLP and are discussed in Chapters 2 (Section 2.1.4) and 4.

The CRCC VLP is expected to aid in the conservation and recovery of Covered Species by creating and enhancing suitable habitat, implementing species specific beneficial activities, and managing routine and ongoing ranching activities for a minimum of 10 years on each enrolled property. The CRCC VLP will also offer the opportunity to determine the effectiveness of active management for Covered Species, which will aid land managers in decisions regarding habitat enhancement for these species. Therefore, the CRCC VLP and the activities it covers, which are facilitated by the incidental Take authorized pursuant to FGC §2086 and CCR §786 *et seq.*, are intended to provide a net conservation benefit and mitigate for potential impacts to the Covered Species.

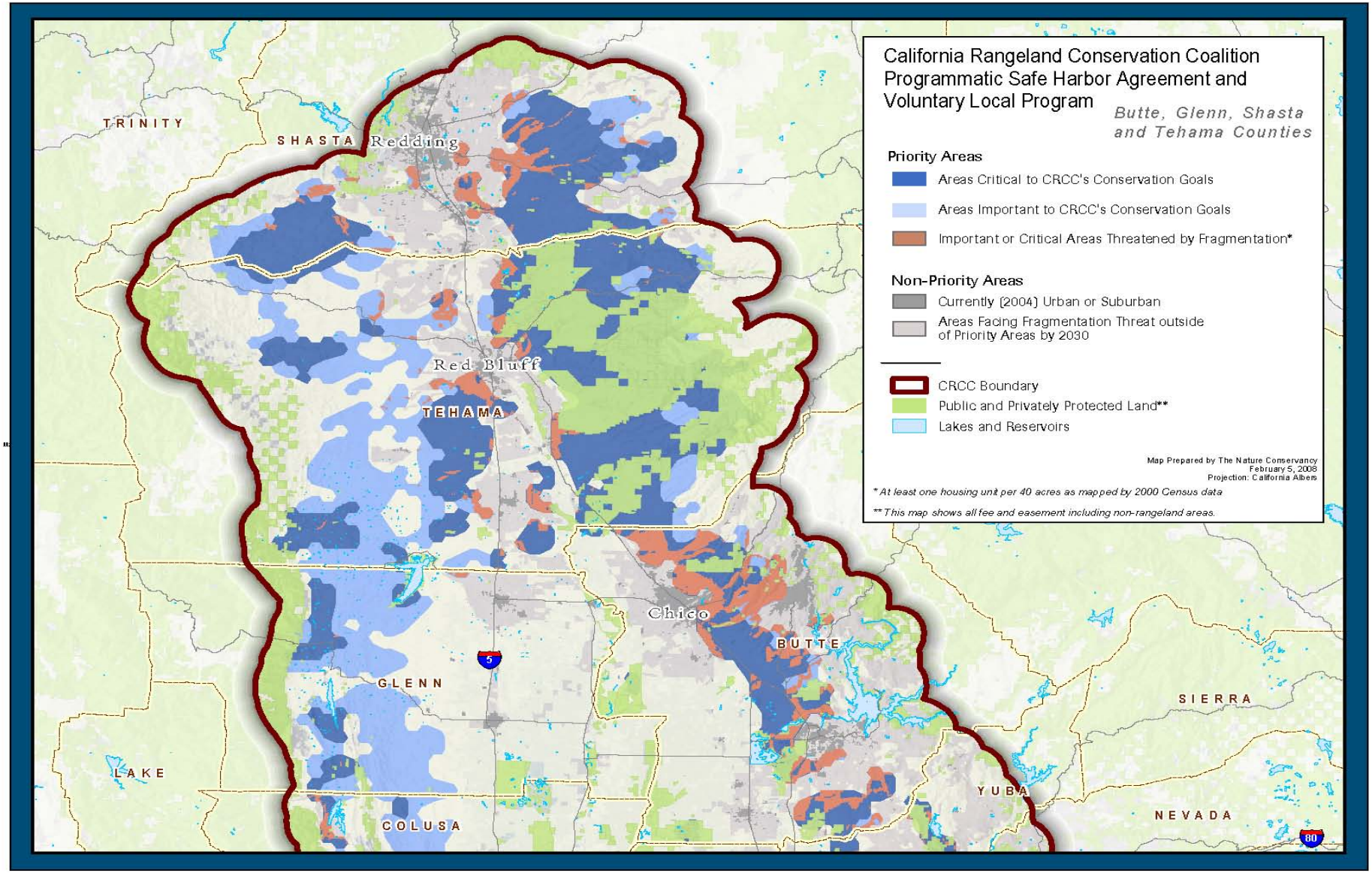
Baseline habitat conditions on any enrolled property will be maintained, even if the landowner chooses to withdraw from the program and remove the habitat enhancements. The CRCC VLP incorporates mitigation measures necessary to avoid and minimize impacts, and therefore, impacts are reduced to a level less than significant. Other issues were evaluated for which impacts were determined to not be significant based on an environmental checklist and supporting analysis (refer to Appendix A of the EA).

AREAS OF CONTROVERSY

DFG issued an NOP on February 14, 2008, to inform agencies and the public of the preparation of an EA on the proposed project to restore and enhance wildlife habitat on rangelands in four counties. The purpose of the NOP was to solicit comments from public agencies and interested members of the public on issues germane to the proposed project that should be considered in the Draft EA. DFG received one response via email on the NOP which did not contain any comments. DFG also held a scoping meeting for the public and agencies on March 20, 2008. Comments were presented by individuals at the public scoping meeting. Appendix B of this Draft EA contains a copy of the NOP, scoping meeting notes, and summaries of comments received. No comment letters were received.

Implementation of the proposed project would involve restoring and enhancing wildlife habitat on rangelands. When wildlife habitat adjoins farmed land, there is potential for insects and other animals to damage crops (foraging on adjacent fields, for instance) or for listed species to move onto adjacent farms and inhibit normal practices. For the subject project, such effects on adjoining parcels would be potential impacts. The CRCC VLP incorporates a “neighboring lands” provision to address these impacts. Additionally, some currently cultivated or fallow lands may be restored to native habitat resulting in a small reduction of crop production. These issues are discussed in detail in Chapter 4 under “Agricultural Resources.”

Figure ES-1


California Rangeland Conservation Coalition
Programmatic Safe Harbor Agreement and
Voluntary Local Program
Butte, Glenn, Shasta
and Tehama Counties
Priority Areas
Areas Critical to CRCC's Conservation Goals
Areas Important to CRCC's Conservation Goals
Important or Critical Areas Threatened by Fragmentation*
Non-Priority Areas
Currently (2004) Urban or Suburban
Areas Facing Fragmentation Threat outside
of Priority Areas by 2030
CRCC Boundary
Public and Privately Protected Land**
Lakes and Reservoirs
Map Prepared by The Nature Conservancy
February 5, 2008
Projection: California Albers
* At least one housing unit per 40 acres as mapped by 2000 Census data
** This map shows all fee and easement including non-rangeland areas.
TRINITY
SHASTA
Redding
Red Bluff
TEHAMA
Chico
BUTTE
GLENN
LAKE
COLUSA
SIERRA
YUBA
NEVADA
5
80

1 INTRODUCTION

1.1 History and Background of CESA and Incidental Take Authority

This section presents a brief description of pertinent provisions of the California Endangered Species Act (CESA) and a summary of the statute's history. This discussion provides the background behind the current proposal to approve the California Rangeland Conservation Coalition Programmatic Safe Harbor Agreement and Voluntary Local Program (CRCC VLP) (see Appendix C).

1.1.1 The California Endangered Species Act

CESA prohibits the unauthorized Take of birds, mammals, fish, amphibians, reptiles, and plants that are candidate, threatened, or endangered species. Take is defined as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. CESA includes a general prohibition against the import, export, possession, purchase, selling, or Take of these species. Under certain circumstances, CESA allows Take incidental to otherwise lawful activities through a permit process administered by DFG (see §2081). CESA is embodied in Fish and Game Code Chapter 1.5 of Division 3, Endangered Species, §2050 *et seq*.

CESA has four major components: 1) general provisions related to policies and definitions (§§2051 - 2068); 2) a listing and review process (§§2070-2079); 3) general prohibitions to protect the species and the associated specific exceptions and incidental Take authority (§§2080-2085); and 4) incidental and accidental Take provisions related to routine and ongoing agricultural activities (§§2086-2089). In addition, the act contains provisions for funding and for preparing recovery strategy pilot programs (§§2098-2116).

1.1.2 1997 Statutory Amendment

The State endangered species statute was first enacted in 1970. Since then, it has been amended several times with the 1997 amendments addressing Take provisions for routine and ongoing agricultural activities. Passed by the Legislature in 1997, SB 231 added Article 3.5 (§§2086 - 2089) to CESA. It went into effect on January 1, 1998.

1.1.3 Voluntary Local Programs

Section 2086 authorizes Take of candidate, threatened, and endangered species pursuant to a locally designed voluntary program for routine and ongoing agricultural activities on farms or ranches that encourage enhancement of wildlife habitat. Section 2088 specifically prohibits a voluntary local program (VLP) from authorizing the Take of fish species that are a member of the class Osteichthyes, and states that VLPs do not

apply to timber harvesting governed by the State Board of Forestry.

Subdivision (b) of §2086 provides the following criteria for the contents of voluntary local programs.

(1) Include management practices that will, to the maximum extent practicable, avoid and minimize Take, while encouraging the enhancement of habitat.
(2) Be supported by the best available scientific information for both agricultural and conservation practices.
(3) Be consistent with the policies and goals of FGC Chapter 1.5, Division 3 of the California Endangered Species Act.
(4) Be designed to provide sufficient flexibility to maximize participation and gain maximum wildlife benefits without compromising the economics of agricultural operations.
(5) Include terms and conditions to cease program participation without penalty.

As required by §2086(a), DFG prepared regulations to implement the program which became effective December 15, 1998. The regulations were revised in 2002 to their current version which added DFG review and approval of VLPs, narrowed the definition of "routine and ongoing agricultural activities," and established CEQA review for VLPs as a Certified Regulatory Program. The regulations for "Take Incidental to Routine and Ongoing Agricultural Activities" are found in CCR Title 14, §786 *et seq*. The regulations provide definitions for "management practices", "routine and ongoing agricultural activities", and "local program". The regulations also provide guidance on the process for development, review, and California Environmental Quality Act (CEQA) compliance for VLPs. Important features include:

- Information and Assistance - DFG shall provide information and assistance to groups developing VLPs. Such information includes contacts with agencies with agricultural expertise, and the best available science. DFG shall collect and share information on possible management practices.
- VLP Plan Elements – The necessary components include an area description, list of management practices, activities to be covered, best available science used, a flexible approach, administration, reporting, and an environmental analysis for CEQA compliance.
- The VLP is a Certified Regulatory Program pursuant to CEQA (see Section 1.2).
- Review and Approval – DFG must respond and/or act within specified timeframes.
- Confidentiality – All information generated by a VLP about landowners and the presence of sensitive species on their property must be kept confidential to the extent permitted by other applicable laws.

1.2 Environmental Review and Approval of Voluntary Local Programs

1.2.1 Certified Regulatory Program

A regulatory program of a state agency may be exempted from the requirements for preparing environmental impact reports (EIR), Negative Declarations, and Initial Studies if the Resources Agency Secretary finds that the program meets the criteria contained in CEQA. A certified program remains subject to other provisions in CEQA such as the policy of avoiding significant adverse effects on the environment where feasible. The Resources Agency established the VLP for Routine and Ongoing Agricultural Activities as a certified regulatory program (CEQA §15251(p)).

DFG must evaluate the VLP's effect on the environment in an Environmental Analysis (EA) (CCR §786.2(d)(7)). The EA must describe the program and any potentially significant adverse effects. If no potentially significant adverse effect is identified, DFG shall provide a statement to that effect and support it with a checklist or other documentation, based on substantial evidence. If potentially significant adverse environmental effects are identified, the EA shall include a detailed statement of whether additional management practices are necessary to reduce potentially significant adverse effects to a level less than significant. If potentially significant adverse effects remain after full consideration of the environmental benefits from the proposed management practices, a detailed statement shall be prepared of potentially feasible alternatives to the local plan and additional potentially feasible management practices that would substantially lessen any remaining potentially significant adverse environmental effects. CCR §786.3(d) requires DFG to make the VLP and EA available for public review and solicit comments from potentially interested groups. DFG must respond to public comments in writing.

During the 2002 rulemaking, DFG received public comments suggesting that all VLPs would result in potentially significant adverse environmental impacts as a matter of law. However, these comments were made in light of the provisions in the CEQA Guidelines at the time that established a mandatory finding of significance for any project that would "… reduce the number or restrict the range of an endangered, rare or threatened species…" (Former Title14, section 15065(a)). Based on the mandatory finding language in existence at the time, some commenters argued that if a single individual of a listed species were taken, the mandatory finding language was triggered and a lead agency was required to prepare an EIR or its equivalent. That language in the CEQA Guidelines has since been relaxed. A mandatory finding of significance now requires a "substantial" reduction in number or restriction in the range of an endangered, threatened or rare species.

DFG completed an initial study of the VLP in the form of an environmental checklist (Appendix A) to assess the potential impacts of the program. Due to the beneficial activities contained as part of the VLP, the incorporation of avoidance and minimization measures, and the habitat enhancement which mitigates for potential impacts in advance of those impacts, DFG has concluded, based on the environmental checklist, that none of the potential effects of the project are considered significant.

1.2.2 Process to Approve Voluntary Local Programs

Approval of a VLP must be completed within 75 days of the close of the public

comment period for the EA unless major changes are needed. DFG must make a set of written findings as follows:

(1) That the voluntary local program includes management practices that will, to the greatest extent practicable: avoid the Take of listed species; minimize Take of species that cannot be avoided; encourage the enhancement of habitat; and maximize wildlife benefits without compromising the economics of agricultural operations.

(2) That the local program is consistent with the goals and policies of CESA and is supported by the best available scientific information.

(3) For every significant adverse environmental effect that has been identified for a local program, DFG must make one or more of the findings required by section 21081 of the Public Resources Code. DFG may not approve any local program for which significant adverse environmental effects have been identified if feasible alternatives or feasible mitigation measures are available that would substantially lessen a remaining significant adverse environmental effect and those alternatives or measures have not been incorporated into the local program.

DFG will approve the VLP pursuant to §2086 at which point the incidental Take of candidate, threatened, and endangered species is not prohibited. Within five working days of authorizing a VLP, DFG must file a Notice of Decision with the Secretary for Resources. The Notice of Decision must include a statement that the Director of DFG authorized the local program.

1.3 EA Overview

1.3.1 Intended Uses of the EA

The EA serves as the informational document that will be used by DFG and other responsible agencies to make informed decisions about the potential effects of the VLP on the environment. The EA includes an analysis of potential significant effects on the environment, both short- and long-term, and mitigation measures. It also contains an evaluation of growth inducing and cumulative effects on the environment.

1.3.2 EA Scope and Potentially Significant Effects

In order to refine the scope of the EA, an initial study was prepared to determine the potential for significant effects on the environment as a result of the CRCC VLP. The initial study is included as Appendix A of this EA and consists of an Environmental Checklist and explanations of checklist responses. Based on the initial study, Chapter 4 of this EA provides an expanded analysis of the potential environmental impacts for the following resource areas:

- agricultural resources

- biological resources

Other issues have been found to result in less-than-significant effects to the environment. Documentation of the factual basis for determining other issue areas as being less than significant is included in the initial study (please refer to Appendix A, environmental checklist and supporting discussions).

2 PROJECT DESCRIPTION

This chapter contains the description of the project, the California Rangeland Conservation Coalition Programmatic Safe Harbor Agreement and Voluntary Local Program (CRCC VLP), proposed for approval by DFG pursuant to Fish and Game Code §2086 of CESA and CCR §786 *et seq*.

2.1 Project Overview

The CRCC VLP is a cooperative approach among the CCA, DFG, and the FWS that covers Take of listed species through DFG's VLP (CESA §2086, CCR §786 *et seq.*) and the FWS' Safe Harbor Agreement Program (pursuant to Section 10(a)(1)(A) of ESA). FWS instituted the Safe Harbor program in the mid-1990s to provide a mechanism for landowners to voluntarily enhance habitat for federally listed species while giving protections to participating landowners that no additional future regulatory restrictions will be imposed. The Safe Harbor program allows landowners to return their property to its biological baseline and authorizes Take of the listed species without penalty or additional mitigation. A safe harbor agreement must include measures that will result in a net conservation benefit to the species, thereby aiding in recovery of federally listed species.

The purpose of the CRCC VLP is to encourage non-federal landowners to voluntarily enhance, restore, and maintain habitat for sensitive, candidate, threatened and endangered species that benefit from maintenance of rangelands. In exchange for voluntarily enhancing sensitive species habitat, landowners who enroll in the program and comply with all program requirements will receive Take authorization for state and federally-listed Covered Species associated with restoration and enhancement, routine and ongoing agricultural activities, and the option to return their property to baseline with no penalties. All of these activities for the CRCC VLP constitute "management practices" as envisioned by CCR §786. Without the protection afforded through the incidental Take authorization, non-federal landowners would likely not enhance habitat conditions for state and federally-listed species. The programmatic CRCC VLP will cover non-federal lands that are managed as rangeland within the CRCC focus area within Butte, Glenn, Shasta, and Tehama counties (see Figure ES-1). The CCA is proposing to be the Program Administrator for the CRCC VLP. Individual lands to be enrolled will be identified by the Program Administrator. The CRCC VLP becomes effective upon DFG's approval and will be in effect for 50 years. See Table 2-1 for a list of the CRCC VLP proposed Covered Species. State Take authorization only applies to state-listed species. Certain activities addressed by the VLP may require streambed alteration agreements pursuant to Fish and Game Code Section 1600 *et seq.*, Clean Water Act Section 401 and 404 permits and potentially others.

Table 2-1: List of Covered Species and Federal and/or State Status.

Species Name	Status
Invertebrates	
Conservancy fairy shrimp (*Branchinecta conservatio*)	Federal: Endangered State: None
Vernal pool fairy shrimp (*Branchinecta lynchi*)	Federal: Threatened State: None
Vernal pool tadpole shrimp (*Lepidurus packardi*)	Federal: Endangered State: None
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Federal: Threatened State: None
Amphibians/Reptiles	
Giant garter snake (*Thamnophis gigas*)	Federal: Threatened State: Threatened
California red-legged frog (*Rana aurora draytonii*)	Federal: Threatened State: Species of Special Concern
Birds	
Swainson's hawk (*Buteo swainsoni*)	Federal: None State: Threatened
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	Federal: Candidate State: Endangered
Plants	
Hoover's spurge (*Chamaesyce hooveri*)	Federal: Threatened State: None
Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*)	Federal: Endangered State: Endangered
hairy Orcutt grass (*Orcuttia pilosa*)	Federal: Endangered State: Endangered
slender Orcutt grass (*Orcuttia tenuis*)	Federal: Threatened State: Endangered
Greene's tuctoria (*Tuctoria greenei*)	Federal: Endangered State: Rare
Indian Valley brodiaea (*Brodiaea coronaria* ssp. *rosea*)	Federal: None State: Endangered
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	Federal: None State: Endangered

The CRCC VLP also addresses three additional "Species of Conservation Concern," as shown in Table 2-2. Populations of these species are declining, but are not listed. All of these species frequently occupy agricultural lands. In an effort to prevent further declines in their populations, they are included in the CRCC VLP in hopes that landowners will be willing to carry out habitat restoration and enhancement activities for their benefit which may help to prevent them from becoming listed in the future. Take of these species will not be authorized.

Table 2-2: List of Species of Conservation Concern.

Species Name	Status
Birds	
Burrowing owl (*Athene cunicularia*)	Federal: None State: Species of Special Concern
Tricolored blackbird (*Agelaius tricolor*)	Federal: None State: Species of Special Concern
Mammals	
Sacramento Valley red fox (*Vulpes vulpes ssp. nov*)	Federal: None State: None

2.1.1 Baseline Determination

In order to receive the authorizations to Take state and federally-listed Covered Species specified in the CRCC VLP, a landowner must maintain on the enrolled property at least as many of the Covered Species and/or the same amount and general quality of habitat as were present when the landowner entered into the program (the baseline). Baseline evaluations will identify the species to be covered, estimate the population on the property of each Covered Species and/or estimate the acreage of suitable habitat, and include a description of the natural communities and suitable habitat or other relevant habitat features utilized by the Covered Species on the property.

For each enrolled property, baseline conditions must be verified prior to enrollment and will be based upon a survey of the enrolled property. Baseline surveys must be conducted by a "qualified person" not more than 18 months prior to the signing of the Cooperative Agreement. A "qualified person" is someone with appropriate species expertise who has been approved by FWS and/or DFG. The qualified person will document baseline on each enrolled property by completing a Baseline Habitat Worksheet, Exhibit 4 to the CRCC VLP (Appendix C). When FWS and/or DFG do not directly determine the baseline conditions, they must review and concur with the determination before approving the Cooperative Agreement.

The Baseline Habitat Worksheet provides information on what constitutes suitable habitat for each Covered Species and Species of Conservation Concern and how to measure the baseline for each species. The worksheet includes photographs of the Covered Species and Species of Conservation Concern and representative suitable habitat. Required information includes acreages of suitable habitats, locations of known occurrences of the species, descriptions of methodologies used, maps and photos of the habitats, descriptions of grazing practices in and adjacent to the habitats, and descriptions of any special habitat features (considering landowner confidentiality).

2.1.2 Beneficial Activities

Each landowner, lessee, or land manager (Cooperator) who voluntarily chooses to enroll his/her property in the CRCC VLP will enter into a Cooperative Agreement with the Program Administrator. The Cooperative Agreement will specify the restoration and/or enhancement, and management activities (collectively the "management practices" pursuant to CCR §786) to be carried out on the enrolled property to which it applies and a timetable for implementing those activities.

The beneficial activities will be tailored to the property and Covered Species and Species of Conservation Concern potentially on site. Each enrolled property will present a unique set of site-specific considerations depending on the type of habitat present (*i.e.*, riparian, wetlands, vernal pools, chaparral, grasslands, oak woodlands), and the type of activities that occur on the property. Typical beneficial activities include native vegetation planting, irrigation of new plantings, managing grazing to improve habitat, erosion control through grazing management or vegetation restoration, invasive species control, constructing new ponds, restoring microtopography, appropriate pesticide use, and protecting existing habitat through fencing and controlled grazing. Additionally, landowners may agree to allow research to be conducted on their property to obtain additional information on the species.

The benefits of various rangeland management techniques could be further defined for some of the Covered Species and Species of Conservation Concern. The species covered by this Agreement may benefit from research that would improve habitat conditions through rangeland management. Cooperators may individually pursue or be asked to allow research to be conducted on Enrolled Properties to obtain additional information about the species or management strategies. Some examples of research topics that would be of interest include: determine what types of grazing management regimes benefit the various species; assess limiting factors such as competing vegetation that are suppressing reproduction in rare plants; and, determine natural prey, habitat use, distribution, and status of the Sacramento Valley red fox.

A summary of some possible management practices that may benefit the Covered Species and Species of Conservation Concern is contained in the CRCC VLP and provided below. This list is not exhaustive, but serves as general guidance for the type of beneficial management practices that DFG and FWS anticipate Cooperators to implement under the Cooperative Agreements.

Covered Species

Valley Elderberry Longhorn Beetle

1. Plant elderberry bushes and associated riparian plants, optimally providing connectivity between areas with elderberry shrubs.

2. Irrigate planted elderberry shrubs until the elderberry shrubs establish a tap root.

Monitor new plantings until they are established and adjust irrigation practices accordingly.

3. Remove non-native invasive species (e.g., Himalayan blackberry) as appropriate to facilitate restoration.

4. Allow new sprouts of elderberry shrubs to grow within riparian areas by protecting sprouts from livestock until the plants are 3 to 4 feet tall.

Vernal Pool Species *(Crustaceans: Conservancy fairy shrimp, Vernal pool fairy shrimp, Vernal pool tadpole shrimp) and (Plants: Hoover's spurge, Butte County meadow foam, hairy Orcutt grass, slender Orcutt grass, Greene's tuctoria, and Bogg's Lake hedge-hyssop)*

1. Discontinue cultivation and/or irrigation of vernal pool areas to allow for recovery of the vernal pool hydrology and vegetation.

2. Use alternative water sources to ensure that cattle do not over-utilize vernal pools in late spring or early summer when vernal pools may offer the only remaining water sources. When alternate water development is not technically or economically feasible, minimize impacts to vernal pool resources through appropriate use of fencing measures in conjunction with herd management.

3. Improve water quality in vernal pools (e.g., erosion control, reduction of excessive manure).

4. Ensure that livestock do not over-use vernal pool habitat containing plants that are sensitive to grazing (e.g., Greene's tuctoria and other Orcutt grasses) late in spring or early summer. Avoid or minimize excessive use by livestock to reduce impacts to sensitive vernal pool plants before they set seed.

5. Ensure that appropriate grazing regimes are utilized to ensure a sustainable vernal pool ecosystem. Over-grazing may lead to denuded and compacted soils in a vernal pool complex; or, conversely, under-grazing may lead to excessive thatch build-up, increases in invasive non-native plants within the pools, decreases in native forbs, and a reduction in available aquatic vernal pool habitat.

6. Control non-native vegetation through grazing or prescribed fire (e.g., removal of invasive plants such as yellow star thistle). Grazing practices may also be used to control common vernal pool and upland species that may out-compete a listed vernal pool plant species. For example, a vernal pool may support slender Orcutt grass, but the Orcutt grass is being out-competed by an introduced species such as manna grass (*Glyceria declinata*) or even a common vernal pool species such as *Glyceria* spp. or *Eleocharis* spp.

7. Keep vernal pool upland habitat undisturbed that may have been through the use of discing or grading equipment. This will help control erosion, avoid exotic plant encroachment, and prevent destruction of native solitary bee habitat.

8. Restore hydrologic regime to historic conditions. Some pasturelands have been altered to convey water to certain areas to benefit livestock. Ditches or canals could be removed to return water to vernal pools that are no longer receiving water in sufficient amounts to provide habitat for listed vernal pool species.

9. Keep the application of pesticides to a minimum in the watershed area of vernal pools, since these can negatively impact vernal pool crustaceans and certain vernal pool plants.

10. Introduce vernal pool species to appropriate soil types, if biologically appropriate. Consult with the Service and/or Department to determine if introduction is appropriate.

California Red-legged Frog

1. Control predator species in aquatic breeding habitat. This could be achieved by draining ponds in late summer after tadpole metamorphosis (September or early October) to ensure that predators such as bullfrogs and non-native fish species such as bass, catfish, sunfish, and mosquitofish are not able to establish reproducing populations.

2. Plant native vegetation around ponds and waterways and control non-native invasive plant species. Open water adjacent to overhanging vegetation and emergent vegetation are particularly beneficial to California red-legged frogs.

3. Control sedimentation and siltation by stabilizing eroding streambanks, pond banks, dam faces, and spillways (does not include rip rap placement). When appropriate, use fencing and controlled grazing to protect existing and enhanced habitat. Stable stream banks with protected riparian habitat provide important shaded, overhanging hiding habitat for frogs.

4. Increase availability of suitable breeding, foraging and dispersal habitat. Increase habitat connectivity in the watershed by providing increased riparian habitat, as well as a network of suitable aquatic habitat sites within reasonable travel distance of each other. Maintenance of stock ponds or small streams through vegetation removal (cattails), which provides beneficial open water habitat for the frogs, will benefit the species.

5. Construct new ponds with appropriate habitat characteristics to benefit the California red-legged frog. Created ponds should include both shallow and deep portions, overhanging vegetation, and drains to decrease predator populations.

6. Allow reintroduction of California red-legged frogs on an Enrolled Property, if biologically appropriate.

7. Manage cattle grazing to benefit the California red-legged frog. This could include, but is not limited to, allowing livestock to lightly graze around springs, water sources, and riparian areas and minimizing grazing in aquatic breeding habitat during the breeding season (November through April).

Giant Garter Snake

1. Increase the interconnectivity of suitable wetlands and waterways (e.g., create or enhance canals and ditches to link wetlands) to provide cover for foraging, resting, basking, sources for prey items, and connectivity of suitable aquatic sites.

2. Eliminate ground squirrel control activities within suitable over-wintering habitat. Small mammal populations provide burrows that provide over-wintering habitat for giant garter snakes.

3. Manage vegetation on banks of irrigation and drainage ditches, sloughs or low gradient streams to sustain appropriate perennial vegetation that provides for foraging, resting, basking, sources for prey items, and connectivity of suitable aquatic sites.

4. Manage cattle grazing to benefit the giant garter snake. This could include, but is not limited to, preventing livestock from grazing extensively around suitable aquatic habitat for the giant garter snake. When appropriate, use fencing and controlled grazing to protect existing and enhanced habitat.

Swainson's Hawk

1. Protect and enhance trees adjacent to forage areas (multiple fields of alfalfa, pasture, etc.) and enhance and restore riparian habitat, including the planting and nurturing of willows, oaks, sycamores, and cottonwoods.

2. Ensure the availability of suitable nesting and foraging habitat by maintaining riparian systems and groves of trees as well as lone mature trees in agricultural fields.

3. Grow specific crops where already cultivated that are typically used by Swainson's hawks for foraging (e.g., alfalfa and other hay crops).

4. Manage grazing (including rotation) to provide foraging habitat that provides short or interspersed vegetative cover, which provides easy visibility and access to prey from the air.

5. Maintain current and former known nest trees. Leave snags (i.e., standing, dead trees) on the land to provide a lookout roost.

6. Use agricultural practices that increase prey population density and that provide easy visibility and access to prey from the air. Mowing, disking, burning, and flooding can expose prey for easier hunting by hawks. Birds will hunt directly in front of, or behind, tractors or harvesters that disturb prey, sometimes within a few yards of the machinery. Temporary flooding can force prey to concentrate on higher, unflooded ground, where they are more easily seen and caught.

Western Yellow-billed Cuckoo

1. Maintain high-quality nesting habitats (e.g., large sites with high canopy cover and foliage volume, and moderately large and tall trees.)

2. Maintain and expand dense riparian habitat with overstory, mid-canopy, understory and ground cover of native vegetation.

3. Restore and maintain adjacent upland refugia habitats for foraging in wet years, to supplement for the lack of prey species availability due to late spring flooding.

4. Protect and enhance trees adjacent to riparian habitat, including the planting of trees such as willows, oaks, sycamores, cottonwoods.

5. Use managed grazing during October through April to control invasive plant species thereby enhancing plant communities that benefit this species.

Indian Valley Brodiaea

1. Avoid impacts to meadows and other vernally moist areas in serpentine chaparral valley and foothill woodland, foothill grassland habitats, and Sargent cypress forest.

Species of Conservation Concern

Burrowing Owl

1. Where nesting burrows are lacking, encourage the presence of ground squirrels.

2. Maintain suitable low-growing and low to moderate density vegetation structure through managed grazing or other appropriate measures. Herbicide use may be appropriate to control vegetation near and around burrows.

3. Allow appropriate grazing regime near and around burrowing owl habitat to reduce vegetation around burrows.

Tricolored Blackbird

1. Restore habitat by promoting the growth of secure nesting substrates (e.g., nettles, thistles, and other naturally armored native plants) near productive foraging habitats.

2. Manage irrigation for a sequential watering regime in adjacent land parcels during the breeding season for tricolored blackbirds to enhance insect productivity.

3. Incorporate carefully managed grazing of these parcels to maintain an average vegetation height of 6 inches to provide optimal tricolored blackbird foraging habitat.

4. Where colonies establish, defer harvest of grain and silage crops, if feasible, until after birds have left the site.

5. Manage grazing in stock ponds to encourage vegetation that benefits this species.

6. Maintain dense riparian vegetation, including native blackberries, California wild rose, cattails, and willows.

7. Burn or disc old, senescent growth every few years.

Sacramento Valley Red Fox

1. Encourage the presence of ground squirrels, rabbits, and mice.

2. Maintain suitable low-growing and low to moderate density vegetation structure through managed grazing or other appropriate measures.

3. Allow appropriate grazing regime near and around Sacramento Valley red fox habitat to reduce vegetation around burrows.

4. Protect and enhance trees adjacent to riparian habitat, including the planting of trees such as willows, oaks, sycamores, cottonwoods.

2.1.3 Routine and Ongoing Activities Associated with Rangeland Management

The following activities are considered by DFG and FWS to be routine and ongoing activities associated with ranching and agricultural activities that are covered under the CRCC VLP. A Cooperator conducting these activities would be covered for incidental Take once the Cooperative Agreement is signed, the Certificate of Inclusion

issued, and one or more beneficial activities, such as those listed above, are initiated. This list of activities was developed in conjunction with Natural Resources Conservation Service, the California Farm Bureau Federation, and the California Cattlemen's Association and is included in the CRCC VLP (see Appendix C). Following the advice and input of species experts and wildlife agency biologists familiar with farming and grazing practices, plus conclusions from recent grazing studies, and feedback from ranchers and farmers, this list was compiled through the best available scientific information. As new information is acquired, best management practices will be updated and implemented through the cooperation of the landowners, wildlife agencies, and the Program Administrator.

As with the list of beneficial activities, this list of routine and ongoing activities is not exhaustive and serves merely to provide guidance as to the type of activities that will be covered under the CRCC VLP. Routine and ongoing ranching activities include the activities described below, and any others that a rancher may undertake to maintain a ranching operation. Activities that are not listed below will be analyzed by DFG and/or FWS during the review process for individual Cooperative Agreements to determine if the activity is appropriate for coverage under the CRCC VLP. DFG and FWS recognize that routine and ongoing activities may vary from one ranching operation to another, and vary with changing environmental and economic conditions.

1. Livestock grazing according to normally acceptable and established levels of intensity in terms of the number of head of livestock per acre of rangeland.
2. Control of ground-burrowing rodents using poisonous grain according to the labeled directions and local, State, and federal regulations and guidelines. In areas where California red-legged frogs, giant garter snakes, western burrowing owls, or Sacramento Valley red fox exist, the use of toxic or suffocating gases is prohibited due to their non-target-specific mode of action.
3. Control and management of burrow complexes using discing and grading to destroy burrows and fill openings, with the exception of applying these activities within areas of suitable upland habitat for giant garter snakes (within 200 feet of aquatic habitat), western burrowing owls, within 0.7 miles of known or potential California red-legged frog breeding ponds, or Sacramento Valley red fox. In addition, this activity is not allowed if it will degrade habitat for vernal pool crustaceans and plants.
4. Routine management and maintenance of stock ponds and berms to maintain livestock water supplies. This activity does not include the intentional introduction of species into a stock pond that may prey on Covered Species, such as non-native fish and bullfrogs.
5. Routine maintenance or construction of fences for grazing management.
6. Planting, harvest, or rotation of non-irrigated forage crops as part of a rangeland livestock operation (excluding conversion of natural habitat to cultivation).
7. Maintenance and construction of livestock management facilities such as corrals, sheds, and other ranch outbuildings.
8. Repair, maintenance, or de-commissioning of unimproved ranch roads. This

activity may include improvement, upgrade, or construction of new roads if approved by DFG and FWS.

9. Discing of fence lines or perimeter areas for fire prevention control and other fire prevention activities.
10. Placement of mineral supplements and supplemental feeding.
11. Control and management of noxious weeds.
12. Application of herbicide and fertilizer.
13. Riparian area maintenance (e.g., clearing debris, repairing erosion on banks).
14. Activities associated with irrigated pastures (e.g., maintenance of irrigation ditches and/or water diversions).
15. Movement of livestock.
16. Use of all-terrain and off-road vehicles in pasture for ranch management activities.
17. Use of horses and horse grazing.
18. Emergency activities (e.g., fighting floods or fires).
19. Livestock watering in natural streams including diversions.

2.1.4 Avoidance and Minimization Measures

In addition to the beneficial activities described above for each Covered Species, individual Cooperative Agreements and Neighboring Landowner Agreements will also be required to include measures to avoid and minimize Take of State-listed species as required by FGC §2086 and CCR §786 *et seq*., as well as avoid and minimize impacts to cultural resources (CEQA Section 15064.5(c)(d) and Public Resources Code Section 21084.1) Cooperators and Neighboring Landowners may implement avoidance and minimization measures for the Species of Conservation Concern, since these species are not listed. These measures would be implemented by landowners during all management practices that might result in Take of listed species, including: restoration and enhancement activities; routine and ongoing ranching; and returning a property to baseline habitat conditions.

Many species experts from DFG, Department of Water Resources, FWS, and private entities worked to develop the avoidance and minimization measures using the best scientific information available to them. The project was then modified to include a range of avoidance and minimization measures that will mitigate the effects of routine and ongoing ranching activities, habitat restoration and enhancement impacts, and returning the property to baseline. The avoidance and minimization measures are intended to be flexible, avoid or greatly minimize Take of listed species, and maximize wildlife benefits without compromising the economics of the Cooperator's or Neighboring Landowner's agricultural operations.

The following are species-specific avoidance and minimization measures added to the VLP (Attachment 5 in Appendix C) that Cooperators and Neighboring Landowners must implement to the greatest extent possible during enhancement of habitat, routine and ongoing activities, and return to baseline. Cooperators and Neighboring Landowners must contact FWS and DFG through the Program

Administrator within 90 days of any planned activities that the landowner reasonably anticipates will result in incidental Take of Covered Species on the enrolled property (including returning to baseline). Advanced notice is not required for Routine and Ongoing, and emergency activities. Additional measures may be included in individual Cooperative Agreements based on recommendations from landowners or DFG.

Vernal Pool Plants (Butte County meadow foam, hairy Orcutt grass, slender Orcutt grass, Greene's tuctoria, Bogg's Lake hedge-hyssop)

1. Ensure that livestock minimize the use of vernal pool habitat containing plants that are sensitive to grazing (e.g., Greene's tuctoria) late in spring or early summer. This will ensure that livestock avoid vernal pool plants before they set seed.

2. Drive vehicles around and not through vernal pools.

<u>For returning to baseline:</u>

3. Relocation (translocation) has not proven to be successful for many vernal pool plant species, so this tool will be considered on a case-by-case basis by DFG.

4. Any work done in and around vernal pools needs to be done in the dry season.

Indian Valley brodiaea

1. Avoid activities in serpentine soil areas that could impact this species such as mowing, discing and inappropriate grazing.

Giant Garter Snake

1. Allow livestock to graze lightly around suitable aquatic habitat for the giant garter snake to provide openings in waterside vegetation to allow snakes access to basking areas. Avoid grazing practices that would significantly reduce emergent wetland vegetation and waterside vegetation. When appropriate, use fencing and controlled grazing to protect existing and enhanced habitat.

2. Avoid construction activities within 200 feet from the banks of giant garter snake aquatic habitat. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance. Restore disturbed areas to pre-project conditions.

3. Construction activities within the snake's habitat should be conducted between May 1 and October 1, which is during their active season when they are more likely to move and avoid danger.

4. Drain suitable giant garter snake aquatic habitat for at least 15 consecutive days in advance of any maintenance activities to allow snakes to escape.

5. If construction of ranching infrastructures is necessary, use appropriate avoidance measures. Construction poses more danger to giant garter snakes during their inactive period, because they are occupying underground burrows or crevices and are more susceptible to direct mortality, especially during excavation in potential over-wintering sites.

For returning to baseline: Implement measures 3 and 4 above.

Swainson's hawk

1. Avoid new (non-routine) potentially disruptive activities, or activities that suddenly increase in intensity or volume, in the immediate vicinity (approximately 500 yards) of active nests during the pre-nesting and incubation phases (March 15 to May 15).

For returning to baseline:

2. Avoid removal of occupied nest trees during the nesting season (March 15 to September 15).

Western Yellow-billed Cuckoo

1. Avoid riparian disturbance activities during the nesting season, May to September.

2. Avoid new (non-routine) potentially disruptive activities, or activities that suddenly increase in intensity or volume, in the immediate vicinity of riparian habitat during the nesting season, May to September.

3. When appropriate, use fencing and controlled grazing to avoid impacts to existing and enhanced riparian habitat.

For returning to baseline: Implement measure 1 above.

In addition to the above State-listed species, the CRCC VLP addresses habitat enhancement for other Species of Conservation Concern considered sensitive by the State of California. Cooperators and Neighboring Landowners are encouraged to implement the following avoidance and minimization measures to reduce impacts to these species thereby aiding in their conservation.

Burrowing Owl

1. Avoid or minimize ground squirrel control activities on enrolled property.

2. Minimize off-road vehicle use near occupied burrowing owl habitat.

3. Control unleashed pets within occupied burrowing owl habitat.

4. Avoid extensive use of pesticides in foraging areas that may harm insect prey.

5. Avoid ground disturbing activities that will impact occupied burrows. An assessment of potentially impacted burrows should be conducted to determine whether owls are present. Owls should be looked for at various times of the day in the general area of the burrows. Occupied burrows will typically have molted feathers, cast pellets, prey remains, egg shell fragments or excrement at or near burrow entrance or perch site. DFG biologists can be contacted to assist with burrow assessments.

6. Avoid non-routine, potentially disruptive activities, or activities that suddenly increase in intensity or volume, in the immediate vicinity (approximately 250 feet) of occupied burrows during nesting season (February 1 – August 31).

For returning to baseline:

7. Avoid impacts to occupied burrows (see number 5 above), and consult a DFG biologist familiar with burrowing owls to develop a plan of action to minimize impacts to owls that must be evacuated (prevented from returning to burrows). Take of burrowing owls is not authorized.

8. Relocation (translocation) has not proven to be successful for the burrowing owl, so this technique is not encouraged by DFG.

Tricolored Blackbird

1. During the months of April through August, avoid disturbance of wetland areas and ponds with cattail, bulrush, and/or other erect vegetation (*e.g.*, nettles, thistles, blackberries, and other naturally armored native plants) that may provide suitable nesting habitat. Take of tricolored blackbirds is not authorized.

2. When appropriate, use fencing and controlled grazing to avoid impacts to existing and enhanced habitat.

For returning to baseline: Implement measure 1 above when tricolored blackbirds are present.

Sacramento Valley Red Fox

1. Avoid or minimize ground squirrel control activities on enrolled property.

2. Minimize off-road vehicle use near occupied dens.

3. Avoid ground disturbing activities that will impact occupied dens.

4. Avoid non-routine, potentially disruptive activities, or activities that suddenly increase in intensity or volume, in the immediate vicinity (approximately 100 feet) of occupied dens during pupping season (approximately March 1 – July 15).

For returning to baseline:

5. Avoid impacts to occupied dens until after the adults and young have disbursed, or consult a DFG biologist familiar with red fox to develop a plan of action to minimize impacts to foxes that must be evacuated.

The following are avoidance and minimization measures added to the VLP (Attachment 5 in Appendix C) that Cooperators and Neighboring Landowners must implement during enhancement of habitat and return to baseline in order to reduce potential impacts to cultural resources below the level of significance. The Department recommends following the BMPS for routine and ongoing agricultural activities to the greatest extent practicable, even in instances when the activities are part of historic ongoing, baseline operations.

Cultural Resources

- minimize ground disturbance,
- monitor grazing effects in riparian areas,
- adjust grazing management to reduce excessive use and erosion in riparian areas,
- stabilize eroding soils in riparian areas,
- leave artifacts where they are found,
- fence off known sites,
- relocate livestock congregating facilities and attractants (supplements) away from cultural sites,
- limit grading to original depth of ponds and ditch,
- when building up berms, use soil from a previously disturbed area,
- when repairing fences, use same post holes,
- avoid constructing new facilities on archaeological sites,
- avoid constructing new roads through archaeological sites,
- when discing, do not disc below previously disturbed depths,
- avoid driving off-road with full-sized vehicles when area is muddy, and
- report any accidental disturbance to resources to the Program Administrator, who will notify DFG.

2.1.5 Monitoring and Reporting

Owners of enrolled properties will report annually on the status of beneficial activities, management practices, species observations, challenges encountered, and

recommendations for improving the program. The Program Administrator is responsible for assuring that surveys are conducted on enrolled properties at least once every three years to assess the general condition of the Covered Species and/or the associated habitats being managed under the Cooperative Agreements, and determining if beneficial activities could be modified to improve success. The Program Administrator will compile information from the surveys and cooperating landowners' reports and report annually to DFG and/or FWS on the status of species and habitats, beneficial activities, and overall CRCC VLP operation.

2.1.6 Returning a Property to Baseline

Landowners may withdraw from the CRCC VLP and leave habitat enhancement intact, or return their property to baseline. The types of activities to return to baseline are essentially the same as routine and ongoing agricultural activities described in Section 2.1.3. The Take of state-listed Covered Species associated with returning a property to baseline will be authorized through the CRCC VLP (CCR §786.2(d)(9)). To return the enrolled property to baseline conditions, a landowner must demonstrate that baseline conditions were maintained and employ measures appropriate to avoid or minimize the level of Take of State-listed species (Section 2.1.4. and Attachment 5 of the VLP). Species and/or habitats will not be adversely affected until the landowner has given the Program Administrator prior notice of at least 90 days to provide an opportunity to relocate individual Covered Species, if appropriate. Withdrawal from the program will extinguish the Take authority and assurances provided to the Cooperator.

2.2 Project Location

The CRCC VLP will apply to non-federal rangelands within the CRCC boundary in Butte, Glenn, Shasta, and Tehama counties (see Figure ES-1).

2.3 Program Administration

Under the CRCC VLP, the CCA as the Program Administrator will hold the Take authorizations and enroll individual landowners, lessees, or land managers (Cooperators) into the CRCC VLP through individual Cooperative Agreements. DFG and FWS will work with individual landowners and the Program Administrator to determine which species will be covered under individual Cooperative Agreements. Cooperative Agreements will contain a detailed description of the beneficial activities the landowner will undertake to enhance and manage habitat for Covered Species. DFG and FWS will review all Cooperative Agreements prior to the Program Administrator signing a Cooperative Agreement. The FWS will review Cooperative Agreements for federally-listed species and DFG will review Cooperative Agreements for State-listed, and Species of Conservation Concern. Prior to approval, DFG will ensure that each Cooperative Agreement contains measures to minimize and mitigate for impacts to State-listed species and Species of Conservation Concern. FWS will ensure each Cooperative Agreement provides a net conservation benefit for Covered Species. Once it is determined that the Cooperative Agreement should result in a net

conservation benefit for Covered Species, DFG and/or FWS will authorize the Program Administrator to sign the Cooperative Agreement. Upon signing a Cooperative Agreement, the Program Administrator will issue a Certificate of Inclusion to a Cooperator authorizing incidental Take of State- and federally-listed species on the enrolled property for habitat enhancement, management, and routine and ongoing ranching activities, and returning to baseline. The Cooperative Agreements developed pursuant to this CRCC VLP will be for a term of at least 10 years, and will be renewable.

2.3.1 Program Administrator

The CCA will be the Program Administrator for the CRCC VLP. The Program Administrator's role is to provide opportunities for landowners/managers within the program area to receive certain regulatory protections in exchange for participating in restoration, enhancement, and management activities (collectively the "management practices" pursuant to CCR §786) to benefit sensitive species. CCA will work with U.S.D.A. Natural Resources Conservation Service (NRCS) and local agricultural organizations (e.g., Resource Conservation Districts, County Agriculture Commissioners) to contact ranch landowners/managers to explain the benefits of the program and solicit them to enroll in the program. CCA will hold the §2086 Approval and Take Authorization and work with landowner/managers to identify beneficial activities to be implemented on enrolled properties. The Program Administrator's responsibilities include:

1. Ensure that baseline habitat surveys have been conducted for proposed enrolled properties by a qualified person. A qualified person is someone with species expertise that has been approved by FWS and/or DFG.

2. Ensure that FWS and/or DFG have approved each individual Cooperative Agreement and Baseline Habitat Worksheet prior to enrolling the Cooperator. Landowners may elect to have their personal information and property location kept confidential (such information will be retained solely by the Program Administrator).

3. Enter into Cooperative Agreements with landowners/managers (Cooperators) and issue Certificates of Inclusion extending Take authority for listed species pursuant to the VLP.

4. Furnish FWS and/or DFG with copies of all Cooperative Agreements within 2 weeks after they are signed. Landowners may elect to have their personal information and property location kept confidential (such information will be retained solely by the Program Administrator).

5. Compile annual reports from Cooperators and summarize information in an annual report to FWS and DFG. The report is due by March 31 of each year. The record keeping process will document implementation of the program's beneficial and management practices while protecting the confidentiality of

Cooperators.

6. Ensure that surveys on enrolled properties are conducted at least once every three years to assess the general condition of the Covered Species, Species of Conservation Concern, and/or the associated habitat. Such surveying activities may be carried out on the Program Administrator's behalf by a qualified person pursuant to an agreement with the Program Administrator and Cooperator. The qualified person will provide a written report of the survey results to the Program Administrator by December 31 of that year. The Program Administrator will then provide the results of the survey to FWS and DFG in the annual report.

7. Notify FWS and/or DFG of any living individuals or dead specimens of the Covered Species and Species of Conservation Concern present on the enrolled properties.

8. Program administrator will infrom FWS and/or DFG within of any notification it receives from a Cooperator or from an enrolled neighboring landowner of their intent to make a change in land use likely to reduce the number of Covered Species, Species of Conservation Concern, or associated habitat occurring on the enrolled property. This will allow for the opportunity to relocate Covered Species and Species of Conservation Concern from the property, if appropriate.

10. Maintain and implement the Administrative Plan (required by CCR §786,2(d)(8)), which describes how the VLP is administered (Attachment 6 to the VLP).

2.3.2 Cooperators

Cooperators are landowners and/or land managers who voluntarily enter into a Cooperative Agreement with the Program Administrator to restore and/or enhance and manage habitat for Covered Species and Species of Conservation Concern. Cooperative Agreements developed pursuant to this Agreement will be for a term of at least 10 years. In some instances, a Cooperator may be a land manager that does not own the enrolled property (e.g., a rancher who is leasing the property). In such cases, Cooperators must demonstrate FWS and DFG that they have the authority to enter into such agreements. Each Cooperator has the following responsibilities:

1. Ensure that a qualified person completes a Baseline Habitat Worksheet of their property.

2. Enroll their property by entering into a Cooperative Agreement with the Program Administrator.

3. Carry out specific restoration, enhancement, and management activities as detailed in the Cooperative Agreement. Note: Certain activities may require that the Cooperator obtain additional approvals not provided through the VLP (e.g., Streambed Alteration Agreements, water rights permits from State Board, etc.).

Cooperators will implement measures to avoid impacts to cultural resources as specified in “Addressing Effects on Potential Cultural Resources” (Attachment 1 to the CEQA Environmental Checklist).

4. Complete an annual report and provide it to the Program Administrator by December 31 of each year.

5. Allow surveys by a qualified person to be conducted on their property at least once every three years to assess the general condition of the Covered Species, Species of Conservation Concern, and/or the associated habitat.

6. Notify the Program Administrator 90 days prior to any planned activity that the Cooperator reasonably anticipates will result in incidental Take of Covered Species. Such notification would include when the landowner intends to terminate the Cooperative Agreement, withdraw from the program, and return their property to baseline. The Cooperator must implement Take avoidance and minimization measures, and cooperate with FWS and DFG to allow the wildlife agencies, or an approved person, to capture and/or translocate, if appropriate, host plants or potentially affected individuals of the Covered Species or Species of Conservation Concern to reduce and avoid direct Take.

2.3.3 Neighboring Landowners

When a landowner enrolls in the VLP, their neighbors may be apprehensive that the actions of the enrolled landowner intended to attract and enhance listed species may result in listed species immigration onto their property thereby inhibiting their activities. This fear may lead to significant peer pressure on landowners interested in participating in the VLP, and may discourage them from participating (N. Cremers, pers. comm.).

CESA (§2087) exempts accidental Take of candidate, threatened, or endangered species resulting from acts that occur on a farm or a ranch in the course of otherwise lawful routine and ongoing agricultural activities from the prohibition of CESA. This section of CESA was due to sunset on December 31, 2008. However, a bill was passed (SB 1436) in the 2007-08 session that extends the effective date of this code section to December 31, 2010. The reoccurring sunset dates of this code section make it uncertain whether this Take coverage for agricultural landowners will exist over the 50 year term of the VLP.

Agricultural activities have no comparable exemption under ESA. The federal Safe Harbor Rule (FWS 1999b) authorizes FWS to use the maximum flexibility allowed under the ESA in addressing neighboring properties under SHAs and associated Take authorizations. FWS may grant incidental Take authority to the owners of neighboring lands, where occupation of neighboring lands by Covered Species is expected as a result of the SHA.

FGC §2086 and CCR §786 make no explicit provisions to address neighboring lands. However, the following sections of CESA and the implementing regulations provide the flexibility necessary to include neighboring landowner provisions in the VLP:

> FGC §2086(b)(4): VLPs should "be designed to provide sufficient flexibility to maximize participation and to gain the maximum wildlife benefits without compromising the economics of agricultural operations."

This section clearly mimics the Safe Harbor Rule, and anticipates that a program needs to provide flexibility to encourage landowners to sign up. A neighboring landowner provision is a flexible, creative approach to a problem expressed by agricultural landowners.

> CCR §786.6: The Take authorization section specifies that "Any taking of candidate, threatened or endangered species incidental to routine and ongoing agricultural activities is not prohibited … if the Take occurs while management practices in a voluntary local program authorized pursuant to this article are being followed."

The CRCC VLP contains a provision to authorize Take of state and federally-listed Covered Species on lands adjacent to or within the immediate vicinity of enrolled properties (Neighboring Lands). It is DFG's and FWS' goal to minimize any concerns that neighboring landowners may have that the management practices of enrolled landowners will inadvertently encumber them. A neighboring landowner may receive incidental Take authority provided: (1) s/he enters into a written agreement with the Program Administrator; (2) such written agreement specifies the baseline conditions on the Neighboring Land (as determined by a qualified person with expertise in the Covered Species and habitats and reviewed and approved by FWS and/or DFG); (3) activities resulting in such incidental Take are due to routine and ongoing agricultural activities and are consistent with maintaining the baseline conditions on the property; (4) the landowner notifies the Program Administrator in advance of activities likely to result in Take (except in cases of emergency); (5) the landowner allows access to DFG and FWS to collect any individuals in advance of Take; and (6) the landowner implements the avoidance and minimization measures for State-listed species. Before entering into an agreement with a neighboring landowner, FWS and/or DFG must look at the project as a whole, and determine that the net conservation benefit expected from the original Cooperative Agreement will not be eliminated or eroded by the subsequent agreement with the neighboring landowner.

3 ENVIRONMENTAL SETTING

This chapter describes the environmental setting of the project area in three sections. First, the EA includes an overview description of the physical environmental setting of the region and each of the four counties in the project area, a general description of the natural communities, and a discussion of the relationship of ranching and wildlife habitat. Second, a summary description of the Covered Species and Species of Conservation Concern is provided. Finally, other wildlife species in the area of the project will be briefly discussed. Together, these topics provide the information necessary to understand the existing environmental context within which to consider potential environmental effects of the proposed program.

3.1 Project Area

The project area covers the rangeland areas within the CRCC boundary in four northern California counties: Butte, Glenn, Shasta, and Tehama. These counties lie at the northern end of the Sacramento Valley where the Coast Range on the west merges with the Cascade Range to the north and farther inland, to create an extensive area of rugged terrain more than 200 miles in width. The Cascades then extend southeastward until they merge into the Sierra Nevada. In the north the Cascades range generally from 5,000 to 10,000 feet in height, with Mt. Shasta rising to 14,161 feet.

The northern Sacramento Valley area is well protected from the ocean influence and therefore experiences a more continental type of climate with hotter summers, colder winters, greater daily and seasonal temperature variations, and generally lower relative humidity. Summer is a dry period over most of the state. In winter, storms move into and across the state from the Pacific Ocean, producing widespread rain at low elevations and snow at high elevations. Occasionally, storm centers from the southwest are responsible for heavy rains that may cause serious flooding.

The Sacramento River flows south through the project area the length of the Sacramento Valley, then west through the Delta into San Francisco Bay. At intervals along the way other rivers empty their waters into the Sacramento, including the Feather, Yuba, Bear, and American, along with a host of lesser streams that drain small watersheds. Most of the major rivers are fed by melting snow from the high slopes of the Sierra Nevada. Stream flow continues well into or throughout the arid summer months. Many of the rivers have been dammed to hold the water supply in reservoirs for irrigation, industrial, and domestic uses throughout the dry part of the year, and to provide flood control during the winter and spring. As a result, less and less water from these rivers flows directly to the ocean. Most of it is being used at least once before being drained to the sea or percolated into underground storage.

Due to the combination of climate, soil fertility, and water, California is the most productive agricultural state in the nation. California has about 11.4 million acres of

farmland and 57 million acres of rangeland. Of the 57 million acres, about 34 million acres are actually grazed (CDF 2003). Drought, as applied to agricultural practices in California, must be evaluated on a different basis than in other parts of the country. Typically there are extended periods every summer with little or no precipitation. This is the normal and expected condition. A deficiency of precipitation becomes significant in the state when the normal winter water supply fails to materialize. Winter range is important in the livestock industry, especially in the valley and foothill rangelands. An abnormally dry winter can be disastrous to cattle ranching.

The following sections give a brief description of the existing setting in each of the environmental factors potentially affected as identified on the CEQA Environmental Checklist form (see Appendix A, Environmental Checklist).

Aesthetics

The four county regional area encompasses a variety of scenic resources including:

- vast and diverse agricultural landscapes that support row crops, grain fields, flooded rice fields, vineyards and orchards;
- scenic buttes that rise from the valley floor formed by ancient volcanic processes;
- valley floor native habitats that offer showy springtime wildflower displays;
- rolling foothills that turn from green to golden brown and are dotted with oak woodlands;
- pastoral views of ranches with grazing livestock;
- reservoirs and lakes;
- riparian forests that line the many creeks and rivers that flow out of the mountains into the valley;
- rural small towns that display the history of California; and
- views of the tall mountain peaks of the Sierra Nevada range including Mt. Shasta and Mt. Lassen.

The diverse environments of the region are represented by distinct natural communities and landforms that display different development patterns and historical features. Scenic resources make major contributions to the quality of life enjoyed by the residents of the region. The development of community pride, the enhancement of property values, and the protection of aesthetically-pleasing open spaces reflecting a preference for the rural lifestyle are all ways in which scenic resources are valuable to residents and tourists.

Restoration and enhancement of natural communities on rangelands in the project area would generally be considered an improvement in the existing viewshed, or that possibly would be considered by some viewers to be a neutral change. Implementation of the proposed project may involve removal of existing vegetation, which would temporarily degrade the existing visual character in the project area. Some agricultural areas may be changed from cropland and orchard to riparian, wetland, woodland, chaparral, and grassland communities. Removed vegetation would be

replaced with a mixture of grassland, riparian, wetland, oak woodland, and chaparral habitats that would mature over a few years to appear natural and undisturbed. Although landowners may choose to retain habitat when withdrawing from the program, if they choose to return to baseline the aesthetic view will change, but will become as it was before enhancement of habitat which will not degrade the aesthetics below baseline views.

Air Quality

The CRCC VLP program area lies in the Northern Sacramento Valley Air Basin (NSVAB) which is bounded on the north and west by the Coastal Mountain Range and on the east by the southern portion of the Cascade Mountain Range and the northern portion of the Sierra Nevada Mountains. These mountain ranges reach heights in excess of 6000 feet with peaks rising much higher. This provides a substantial physical barrier to locally created pollution as well as that transported northward on prevailing winds from the Sacramento Metropolitan area. The valley is often subjected to inversion layers that, coupled with geographic barriers and high summer temperatures, create a high potential for air pollution problems.

All Northern Sacramento Valley Air Districts have been designated as non-attainment areas for the state standards for PM10. Moreover, all of Northern Sacramento Valley Air Districts, with the exception of Colusa and Glenn counties, have been designated as non-attainment areas for the state standard for O3 (NSVAB 2003). Ozone violations are caused in part, within the NSVAB, by combustion sources and have occasionally been influenced by smoke impacts due to nearby wildfires. The primary emission source is the internal combustion engine. The ozone problem is further aggravated by transport from the Broader Sacramento Area (BSA), which is comprised of Sacramento County, and portions of El Dorado, Placer, Sutter, and Yolo Counties. Ozone is formed by a photochemical reaction of nitrogen oxides and reactive organic gases. These ozone precursors are emitted as part of the exhaust of internal combustion engines in the NSVAB and BSA and transported northward via prevailing winds.

The program would include operation of tractors and well pumps for habitat enhancement and routine and ongoing ranching activities. The project will also involve practices which generate relatively small amounts of dust such as cultivation of land prior to planting native vegetation and removal of enhanced habitat during return to baseline. Some of the actively managed rangeland has been subject to grading and plowing in the past. Enrolled properties will comply with local air district rules and regulations for (as applicable): fugitive dust, agricultural burning regulations, and registration of all diesel-fueled stationary (can include portable) agricultural pumps with the local air district (new state regulation). The proposed project would not be expected to generate fugitive dust in greater quantities or concentrations than has occurred over past decades. After initial disturbance for habitat enhancement, no ground disturbance other than for routine and ongoing agricultural activities is anticipated unless and until a landowner chooses to remove the enhancements and return the property to baseline

conditions. The level of the activities due to the project would not be significantly different from current conditions; therefore, impacts as a result of the project will be less than significant.

Cultural Resources

The CRCC VLP will only have the potential to effect natural communities and agricultural lands, and will not impact any historic architectural properties, such as buildings, bridges and infrastructure. Therefore, for the purposes of this EA, the term cultural resource is used to describe prehistoric and historical archaeological sites, and locations important to Native Americans.

In general, the lands on the margins of the Sacramento River and other major waterways are potential sites for prehistoric archaeological resources. In these areas, prehistoric archaeological sites usually are found on natural rises that protected the inhabitants from frequent floods. Visible surface indications include rock shelters, midden sites in association with prehistoric dwellings, rock walls/circles, and petroglyph or pictograph sites.

The project area includes the territories of several Native American groups. For approximately 4,500 years, archaeological records state that the Yana and their predecessors occupied the area from the Round Mountains near the Pit River in Shasta County, to Deer Creek in Tehama County. The Nomlaki (Central Wintun) were relative newcomers by comparison, having arrived from the north only 400 years ago. This tribe generally occupied the area spanning 10 miles east of the Sacramento River into the coastal range, in what is now Glenn and Tehama Counties. Wintun Indian tribes populated the upper Sacramento Valley and the foothill areas to its east. The Yana and Yahi tribes also lived most of the year along creeks to the west of Lassen Peak. Cultural resources have been found at major archaeological sites such as the “Los Molinos Vicinity – Ishi Site” in Deer Creek Canyon, and the “Sulphur Creek Archaeological District” in the Mill Creek vicinity. Both areas are listed on the National Register of Historic Places. Other tribes that may have occupied the area include the Konkow Maidu, Patwin, and Nisenan.

Individual County records show:

- Over 250 settlement sites have been identified along the Sacramento River and along river tributaries in the foothill regions of Tehama County.
- More than 1,500 sites have been identified in Butte County that are either prehistoric archaeological resources or include a prehistoric archaeological component.
- There are more than 350 records of prehistoric sites in Glenn County.
- There are approximately 500 known sites or areas of archaeological significance in Shasta County.

This document compares what would happen if the proposed project proceeds with what would happen if the project site is left alone. Some of the actively managed

rangeland has been subject to grading and plowing in the past due to historic agricultural activities. Current routine and ongoing management activities often require soil disturbance for forage production for livestock, pond construction and maintenance, fire breaks, ranch road creation and maintenance, fence installation and maintenance, and other similar activities. These are part of the existing environmental baseline as these are activities that have occurred prior to the proposed project and will continue to occur whether or not the proposed project proceeds.

Best Management Practices for avoidance and minimization measures during beneficial land enhancement and return to baseline activities, including the potential need for Archaeological Records Searches and surveys for Cultural Resources, are discussed in the Environmental Effects section of this EA (Section 2.1.4 and Section 4.3). These BMPs are also recommended for the routine and ongoing agricultural activities, when applicable.

Geology and Soils

The seismicity of a region is described as the distribution, recurrence, and intensity of earthquakes over a period of time. Earthquake activity has not been a serious hazard in the project area's history, nor is it probable that it will become a serious hazard in the future. While the Sierra foothills contain literally hundreds of mapped faults, dozens of which are located within the project area, the vast majority of these faults are considered inactive.

Landslides occur throughout the region, although they have not been considered a major problem. Landslides are commonly related to the sedimentary and volcanic rocks formations. Most landslides occur on slopes greater than 15 percent, and most new landslides occur in areas that have experienced previous landslides. The areas of highest landslide potential are in the mountainous areas where well-developed soils overlay impervious bedrock on steep slopes, which at times undergo heavy rainfall. Most of the project area has moderate to low landslide potential. The areas of lowest landslide potential are the flatlands of the Sacramento Valley.

Erosion generally involves the removal of earth materials from one area with deposition in another, and is a normal and inevitable geologic process. Erosion increases with increasing slope, increasing precipitation, and decreasing vegetative cover. Erosion may be extremely high in areas where protective vegetation has been removed by fire, construction, or cultivation. High rates of erosion may have several negative impacts including degradation and loss of agricultural land, degradation of streams and other riparian and wetland habitats, and rapid silting of reservoirs. Erosion can be concentrated, as when land surfaces are gullied and stream banks are undercut, or it can be spread widely by sheetwash and slope denudation. Activities by people, such as grading, frequently accelerate erosion and sedimentation.

In the foothills the soils formed mainly from hard, unaltered sedimentary rock. Soils of older and low terraces are well drained to somewhat poorly drained and are

mostly moderately permeable to very slowly permeable. Soils of the basins are characteristically fine textured and poorly drained. Slopes are nearly level, and runoff is very slow. Soils on the more recent alluvial fans and flood plains generally consist of shallow to deep, well-drained to excessively-drained gravelly and non-gravelly stratified material.

The proposed project does not involve construction or urban development that could expose people to geologic hazards (e.g., earthquakes, landslides, liquefaction or collapse of structures); therefore, geologic hazards are not significant issues. If it experienced an earthquake, the project would be unaffected because the project involves vegetation rather than people or habitable structures. Although there is the potential for flood flows to erode riparian areas on project sites, the possibility of near-term erosion and sedimentation would be offset by the long-term protection afforded to the soil by the cover of native riparian habitat with an established root system.

Hazards and Hazardous Materials

Hazardous materials include all toxic, flammable, combustible, corrosive, poisonous, and radioactive substances, and hazardous waste. The four major concerns regarding hazardous materials are their transportation, storage, operational uses, and unauthorized use/discharge. Hazardous materials are used in many forms and activities throughout the region. The most heavily used substances are motor vehicle fuels, lubricants, and propane. The routine and ongoing ranching activities will continue to use fuel for ranch vehicles in substantially the same amounts are prior to the project. Any operation which discharges wastes onto land or into bodies of water must also meet discharge requirements established by the Central Valley Regional Water Quality Control Board.

Regulations regarding the use of herbicides, pesticides, and fertilizers which contain hazardous materials are administered by the State Department of Food and Agriculture in conjunction with the County Agricultural Commissioners. Landowners enrolled in the program may use regulated herbicides in compliance with specified application standards. This practice would not result in a requirement to dispose of a hazardous substance.

The term “wildfire” refers to fires that usually result from the ignition of dry grass, brush, or timber. Wildfires commonly occur in areas that are characterized by steep, heavily vegetated hillsides, which make suppression of the fire difficult. Wildfires play an important role in the ecology of many natural habitats. Some ecosystems are dependent upon recurrent fire to survive and have adapted to reestablishing themselves after a fire.

Calculation of threat from wildfire hazard is based on a number of combining factors including fuel loading (vegetation), topography, and climatic conditions such as winds, humidity and temperature. Generally speaking, late summer and early fall are the periods of greatest risk for wildland fire, when vegetation is at its driest. Human activity, including agricultural burning, mowing of dead grass, careless disposal of cigarettes,

campfires, and use of fireworks can all trigger fires; natural causes such as lightning strikes may also cause fires. Wildland fire prevention activities will continue to occur on enrolled properties. The proposed actions would occur on private ranches, and typically some distance from public roads; therefore, it would not conflict with an adopted emergency response plan or other emergency plan.

CESA and the implementing regulations prohibit the conversion of agricultural lands enrolled in a VLP to nonagricultural uses. Substantial impacts resulting from significant changes to the landscape that might expose people and property to hazards or hazardous materials will not occur. It is not expected that management practices would result in a substantial change in pesticide, herbicide or other agricultural chemical use; if a change occurs, it would involve focused management of herbicide and pesticide use on participating ranches where habitat is being enhanced to fit specific species needs.

Hydrology/Water Quality

The program area is located in the Sacramento River Hydrological Region, which covers approximately 17 million acres (27,000 square miles) and extends south from the Modoc Plateau and Cascade Range at the Oregon border to the Sacramento-San Joaquin Delta. The region includes the Sacramento River, the longest river system in the State of California, and its tributaries including the Pit, Feather, Yuba, Bear and American rivers as its major tributaries. The Sacramento River Hydrological Region is the main water supply for much of California's urban and agricultural areas. Annual runoff is captured in surface storage reservoirs.

The availability of groundwater in an area depends largely upon its geologic, hydrologic, and climatic conditions. In the program area, reserves of groundwater are found in the thick sedimentary deposits of the Sacramento Valley and also in more limited amounts in mountainous areas within volcanic, metamorphic, and granitic rock. Groundwater provides about 30% of the municipal, industrial, and agricultural supplies to the region.

Between 1994 and 2000, public supply wells in the Sacramento River Hydrologic Region were sampled, and 72 percent met California Safe Drinking Water standards. Of those that did not, natural constituents such as inorganics and radiological contaminants accounted for 88 percent, while exceedances resulting from human activity accounted for about 12 percent. The primary water quality concerns in the region involve release of improperly treated waste to freshwaters, including mountain and foothill rivers and streams, and lowland fresh waters.

The program area is subject to flooding problems primarily in the poorly-drained valley floor. The foothill and upland areas, the primary ranching areas and focus of this program, generally do not experience flooding problems.

CESA and the implementing regulations prohibit the conversion of agricultural

lands enrolled in a CRCC VLP to nonagricultural uses. Substantial impacts resulting from significant changes to the landscape that might affect hydrology and water quality will not occur. If a change occurs, it would involve improved water quality on participating ranches where habitat is being enhanced and management practices altered (reducing grazing impacts in wetlands and riparian areas). Some enhancement and restoration activities may result in temporary disturbance to drainages, streams, or rivers. Landowners conducting activities that could potentially impact a river, stream or lake are required to notify DFG pursuant to FGC §1602. If DFG determines that the activity could substantially adversely affect an existing fish and wildlife resource, a Lake or Streambed Alteration Agreement is required. The enhancement and restoration activities are intended to increase habitat, re-establish vernal pool hydrology, and improve habitat quality, hydrologic function, and water quality in order to benefit the Covered Species. Activities that increase vegetation along waterways will help to protect soils and maintain stable river banks, thus protecting surrounding land uses from damage from flood waters.

Land Use/Planning

Each of the counties in the program area has been, and continues to be, a predominantly rural, agricultural county. Overall land use patterns in the region have been closely related to the natural characteristics, with concentrations of population located in proximity to the most richly productive agricultural resources of the Sacramento Valley floor, and more scattered populations in the foothill and mountain regions. Major urban development within this region is concentrated in the valley along the transportation corridors provided such as Interstate 5, Highway 99, and the Union Pacific Railroad. In the areas to the east and west of these corridors, the development pattern is characterized by small cities and rural communities served by community water and/or sewer districts. On either side of the Sacramento Valley, development in the upland areas takes the form of agriculture, grazing, and timber operations, with small rural community centers and individual homesites dispersed throughout. Population has been on a steady increase in the area, which leads to a continuing demand for housing, infrastructure, commercial and industrial development for services and jobs. The General Plans of the counties show future urban growth will be concentrated around the existing towns and cities or along the major transportation corridors.

Various sorts of open space land uses constitute the majority of the unincorporated areas of the counties, and form the basis for the productive industries (agriculture, mining and forestry) that lie at the heart of the local economy. The valley area, which consists of rich alluvial bottom lands of the Sacramento River Valley, is predominantly agricultural in character. Most of the intensive agriculture (cultivated and irrigated) in the program area occurs here, due to the availability of level topography, prime arable soils and excellent drainage. Open space land use activities in the foothills are concentrated in three principal industries: “extensive” agriculture, mining and recreation. Extensive agriculture (irrigated pasture, grazing and animal husbandry) is a major land use in the region. A significant portion of the foothill areas are used at least

part of the year for grazing cattle, sheep, goats and other livestock on natural vegetation. Generally, extensive agricultural activities occur where the rolling topography and poor soils are unsuitable for raising crops. Recreational uses in the foothills are connected primarily with major water resources such as lakes, reservoirs, and rivers.

The CRCC VLP is designed to provide an incentive for rangeland landowners to voluntarily enhance habitat values while maintaining economic vitality for ranching. All enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. Wildlife habitat enhancement on existing ranchlands does not conflict with existing land use plans. There are no known habitat conservation plans or natural community conservation plans in effect for the four counties, although Butte County has initiated the preparation of such. Habitat enhancement and restoration for sensitive species will be a complementary and necessary activity under any future habitat conservation plan, and the two programs can be expected to complement each other.

Mineral Resources

Gold mining was largely responsible for the establishment of early settlements in the region. Although some dredge mining still takes place, as well as a small amount of panning for gold, the resource is essentially depleted and these activities are largely recreational. Gold mining no longer plays a major role in the region's economy.

In California, sand and gravel has an economic value many times larger than that of all other minerals mined statewide, including gold. The majority of the area's sand and gravel deposits occur along the Sacramento River and within the transitional region where sediments washed down from the Sierra Nevadas into the slower moving rivers of the flat valley. Gravel in the Sacramento River is no longer extensively mined, due to environmental constraints and the difficulty of working in an area with a high water table. In the past, the residual gravel deposits in the transitional region were mined for their gold content. However, today they are mined for gravel and sand, to be used in combination with Portland cement or asphalt compounds in construction and road building. Sand and gravel deposits are also mined for silica, used in the production of cleansers, abrasives, and toothpaste.

The proposed project would be implemented on rangeland where the landowner volunteers to participate in the program. Participation in the program would not result in the loss of availability of mineral resources nor preclude future use of the sites for mineral extraction.

Noise

Because many rural residential areas within the program area experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a sound that was not audible previously. In very quiet

environments, the introduction of virtually any change in local activities will cause an increase in noise levels. A change in noise level and the loss of "peace and quiet" is the inevitable result of land use or activity changes in such areas. Perception of a new noise source and/or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts.

The CRCC VLP encourages ranching landowners to maintain their existing agricultural activities where they are compatible with protecting habitat for Covered Species. The noise levels of these activities will remain the same. The proposed project would involve new short-term habitat restoration and enhancement activities that would use the same types of equipment as normal ranching activities such as standard diesel-powered tractors. Tractor use has occurred on the project sites and in the project area for decades as a standard part of agricultural practices, and local noise ordinances and standards do not restrict these activities. Habitat enhancement activities or activities to return the property to baseline conditions would result in temporary increased noise levels while the work is occurring, although such levels may not be noticeably different from ongoing ranch management noise levels. The proposed project would not result in long-term generation of noise from any source, nor would it increase ambient noise levels.

Population and Housing

Most urban development in the program area is concentrated in urban centers along the major highways. In the areas to the east and west of these corridors, the development pattern is characterized by small cities and rural communities, thus the housing and other development are clustered. Ranching typically occurs in the foothill regions and is somewhat distant from the towns and cities of the program area. New pressure for additional housing would likely target lands that are close to existing urban centers, most of which are located in the Sacramento Valley floor region. The four counties in the program area all place a high priority on maintaining the agricultural character, economy, and lifestyle as a primary characteristic of their counties. Thus, habitat enhancement on private ranching lands would not conflict with future housing areas.

The proposed program would not provide or authorize any infrastructure that could lead to development. Population growth in the region would not be induced by the program. No housing would be replaced by the project, nor would it require people to relocate. All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP.

Public Services

Public services include schools, libraries, transit, recreation facilities, water supply, wastewater treatment, solid waste disposal, police and fire protection, and the infrastructure to supply these services. All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor

authorized by the CRCC VLP. Public services that may be affected by the CRCC VLP include water supply, fire protection, and infrastructure.

Ranching operations in the program area use water primarily for livestock watering, domestic uses, and may also irrigate some crops. Landowners typically use wells drilled on the property, but may have rights to surface waters from onsite creeks, streams, and rivers, or water supplied by local water agencies. Agriculture is the leading land use and industry in the program area, and is the primary user of water. Habitat restoration and enhancement activities may require water to irrigate newly planted native vegetation such as riparian trees and shrubs, or to fill a newly constructed pond or wetland. These requirements for additional water supply are expected to be short term. New plantings typically will only require irrigation for the first few years. Ponds are typically constructed in a location to capture normal runoff, and may only require additional water in the first year. Wetland management usually requires ongoing annual water to flood the wetland area. Enrolled landowners would either pump groundwater or purchase or redirect surface waters for the wetland area.

Fire protection is offered throughout the program area from a combination of sources: city fire departments; county fire departments; and the California Department of Forestry and Fire Protection (CalFire). The first priority for response is human safety and property protection. In the event of a wildland fire, CalFire would be the primary responder. Most of the non-federal land outside the valley floor of the program area is classified as wildland area that may contain substantial forest fire risks and hazards. Furthermore, rural and wildland development has increasingly impacted wildland fire suppression priorities in areas where development has moved into the grasslands, oak woodlands, and forests. Generally referred to as the “Wildland-Urban Interface,” this encroachment of dwellings into previously uninhabited areas has exacerbated the challenges of managing wildland fires. The lands targeted to enroll in the program are ranchlands that currently support natural habitat susceptible to wildland fire. Some management actions may reduce fire hazards by decreasing non-native grasses and invasive species and replacing them with native grasses, vernal pools, and native riparian vegetation which would be less susceptible to extreme wildland fire. The program is not expected to require increased services over current conditions.

Restoration of native riparian vegetation may provide new sources of woody debris that may wash away during flooding events. Such debris could clog weirs or other infrastructure and otherwise cause flood-related damage to facilities. The potential for woody debris to enter flood flows and the consequential effects on floodplain functions and infrastructure has been present in the past and will continue to occur; it is part of existing conditions in the project area. Vegetation removed during restoration activities would be properly disposed of. Restored vegetation will take many years (decades) to grow to a size significant enough to provide large woody debris that can pose the most risk if washed away. Most ranch lands are located in the foothill areas away from significant flood flows that could uproot vegetation and undercut river banks. Flooding and the potential woody debris that may be transported and impact public service infrastructure are only a minor risk from the enrolled properties.

A relevant study conducted by Micheli et al. (2004) compared meander migration rates and bank erodibility from 1949 to 1997 for reaches of the Sacramento River between Red Bluff and Colusa. This study concluded that agricultural areas of the floodplain have generally eroded at higher rates (about 80–150% higher) than riparian forest areas. The results of the Micheli study suggest that restoration of riparian woodland, including the type proposed under this program, may result in cumulative reduced rates of erosion and therefore less contribution of woody debris that could pose problems to infrastructure in flood events.

Recreation

Park and recreational facilities in the program area are owned and operated by a variety of government entities, including the counties, cities, special districts, state, and federal governments. Recreation also occurs on open space lands that are not designated as parks such as National Forests and State Wildlife Areas. Additionally, some private lands are managed as recreational facilities such as hunting clubs, resorts, campgrounds, recreational vehicle parks, and boat and boating equipment facilities.

All CRCC VLP enrolled lands will remain in agricultural use as ranchlands while enhancing habitat values. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. Although recreation can contribute to maintaining economic vitality for ranches, the CRCC VLP does not authorize construction of recreational facilities for nonagricultural uses.

Transportation and Traffic

Most of the roadways in the program area can be characterized as rural. Existing and planned urbanization are resulting in the need to develop higher volume and higher capacity roadways. Interstate 5 and State Highway 99 are the primary north-south transportation routes and provide access to a large number of the developed urban and rural areas. These roads, along with the various other state routes across the area, are a critical element to overall circulation. As the region continues to gain population, these roads will see increasing levels of traffic. Increases in traffic will ultimately require that these facilities be upgraded to address pavement conditions, shoulder width and roadway integrity, and will need capacity and safety enhancements to accommodate the increase in vehicle trips.

In addition to vehicular transportation, the program area is served by two single-track Union Pacific rail lines including the primary line between Sacramento and Portland, Oregon. There are several publicly-owned airports in the region with a few classified as a “community airport” that provide full service for general aviation.

Access is a major fire protection need, whether wildland or structural. Failure to provide access for emergency equipment and concurrent evacuation egress can result

in major loss of life, property and natural resources.

All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered nor authorized by the CRCC VLP. The proposed program would not result in increased traffic on local public roads and at intersections that would be substantial in relation to the existing traffic load and the capacity of the local street system. Local traffic congestion would not increase as a result of the proposed program, nor would air traffic be affected. The proposed program would not result in any hazard relating to a project design feature. Use of standard farm equipment during project implementation phases would be consistent with historical agricultural practices in the region that have included the presence of slow-moving farm equipment on local roadways. Implementation of the proposed program would not result in an incremental increase in this type of hazard. No local emergency access route would be impaired as a result of the proposed program. No public parking would be provided related to the proposed program.

Utilities and Service Systems

Water supply and wastewater treatment are concerned with the removal of water from its natural environment and its return to this environment after it has been used by people for a variety of purposes. Wastewater treatment on rural properties is typically addressed through onsite septic systems for the individual homes. All CRCC VLP enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses is not covered or authorized by the CRCC VLP, nor is the construction of new homes or facilities that would require wastewater treatment. The proposed program would not generate wastewater, nor would it include expansion of existing treatment facilities. Since conversion to non-agricultural uses will not be authorized, storm water runoff will not be generated. No change in constructed storm water facilities would occur. Any need for irrigation of new habitat plantings would require minimal supplies and would be short term in duration. Enrolled landowners would either pump groundwater or purchase or redirect surface waters for the irrigation. The proposed program would not generate waste that would require disposal at a landfill.

3.1.1 Physical Setting by County

Butte County

Butte County has two topographical sections, a valley area that is the northeast portion of the Sacramento Valley and a foothill/mountain region east of the Valley. Topography includes the relatively flat Sacramento Valley floor and associated alluvial fans, with elevations from 60 to 200 feet, extensive rolling foothills with an elevation range from 200 to 2,100 feet, and the Cascade and Sierra Nevada Mountain Ranges, with elevations from 2,100 to over 6,000 feet. Soil types include the deep, nearly level, very fertile valley basin and alluvial soils of the Sacramento Valley that support intensive agriculture; the shallow, gentle to steep sloping, less fertile residual soils of the foothill

areas; and shallow to deep, moderate to steep sloping residual soils of the mountain areas. Butte County has a typical Mediterranean climate with hot dry summers and cool wet winters. Butte County contains abundant and diverse vegetation types including: non-native agricultural crop and pasture regions of the valley; native foothill and mountain oak and conifer forest communities; dry land chaparral areas; and water-oriented riparian and marshland areas of restricted and diminishing distribution. About 28% of the County is used at least part of the year for grazing cattle, sheep, goats and other livestock on natural vegetation that varies by season and elevation. Consequently, livestock that graze in the valley and low foothill areas in the winter are frequently moved to summer pasture on timberland and other mountain areas. Because the per-acre production and value of grazing land is low relative to other uses, it is usually susceptible to development pressures if other prerequisites for development exist.

Glenn County

Glenn County topography is typified by steeper terrain in the Coast Range in the western portion of the county trending down to relatively flat features of the Sacramento Valley along its eastern boundary. Elevations range from 100 feet in the valley floor portion to almost 7,500 feet in the Coast Range mountains. As a result of such major changes in elevation, Glenn County includes a great variety of climatic, soils and geographic conditions that, in turn, influence the distribution, variety, and abundance of the plant communities and animal species within the county. Glenn County contains seven major vegetation associations: blue oak-gray pine woodlands, montane forest, chaparral, riparian, wetlands, and native and non-native grasslands. Agriculture is the most extensive land use in Glenn County and the most significant component of the county's economy. Two-thirds of Glenn County's 1,317 square miles are comprised of agricultural croplands and pasture. Grazing lands are found primarily in the central foothills and to the west in the Coast Range. The land that is now devoted to agriculture in the county was historically covered by native grasslands and riparian forest.

Shasta County

Shasta County is situated where the Central Valley of California meets the convergence of the Klamath and Coast Ranges to the northwest and west, with the Cascade Mountain Range to the northeast and east. Elevations in Shasta County range between 400 and almost 7,000 feet. Soil types include the shallow, gentle to steep sloping, less fertile residual soils of the foothill areas; and shallow to deep, moderate to steep sloping residual soils of the mountain areas. The majority of soils in Shasta County are unsuitable for cultivated agriculture. Shasta County has a typical Mediterranean climate with hot dry summers and cool wet winters. Coniferous forest is the predominant vegetation in the mountainous regions of the County, but in many areas this cover has been modified by human activities. Extensive human-caused modification has also occurred in the Sacramento and Fall River Valleys. These areas are characterized by cultivated and pasture lands, oak woodlands, and grasslands.

Tehama County

The western boundary of Tehama County is the eastern side of the Coast Range, and the eastern boundary is the ridgeline of the Sierra Nevada Mountains. The area contains rolling foothills, fertile valleys, flat-topped buttes, and vast rangelands. Elevations in Tehama County range from 300 feet to over 8,000 feet. Tehama County's strong agricultural background grew from the fertile valley lands along the Sacramento River and the expansive foothills where grazing activities are prevalent. The climate of Tehama County varies significantly between the valley and mountain areas, depending primarily on elevation. Hot, dry summers and temperate winters generally characterize the valley regions, while mountainous areas experience warm, dry summers and colder winters. Cattle, the primary livestock, are wintered in the lower foothills of the county and summered in the mountain meadows, although some livestock producers keep cattle on irrigated pasture on the valley floor during the summer months.

3.1.2 Natural Communities

A natural community is defined as an assemblage of plants and animals interacting with one another and the abiotic environment around them, and subject to primarily natural disturbance regimes. Natural communities are often labeled according to the dominant vegetative characteristics. For this EA, natural communities within the project area are described at a general level that relates to the rangelands that are the focus, and only include those communities that provide habitat for Covered Species.

The state's diverse natural communities provide a wide variety of habitat conditions for plants and animals. California has been recognized as one of global hotspots for diversity. Some of California's natural communities are particularly rich in wildlife species, supporting hundreds of species each. All the communities on rangelands in the project area - valley and foothill woodland, chaparral, riparian woodland, freshwater marsh, valley grasslands, and vernal pools – exhibit high biological diversity. Other open land in the project area is devoted to intensively cultivated agriculture with the leading crops being rice, stone fruits, and nuts.

<u>Valley and Foothill Woodland</u>

Valley and foothill woodlands are characterized by scattered trees with an undergrowth of grasses or shrubs. This community is dominated by oaks, such as valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), coast live oak (*Q. agrifolia*), and interior live oak (*Q. wislizenii*). Other common tree species include gray pine (*Pinus sabiniana*) and California buckeye (*Aesculus californica*). These woodlands are distinguished from forests based on the number of trees and the amount of canopy; woodlands have a more open canopy than forests. Tree density is typically greater in the foothill woodlands than valley woodlands. Understory plants are those common to chaparral and valley grassland.

Oak woodlands support a large number of plant and animal species. Some 5,000 species of insects; more than 330 species of amphibians, reptiles, birds, and mammals;

and several thousand plant species live in these woodlands. Some of California's most characteristic wildlife, including acorn woodpecker (*Melanerpes formicivorus*), mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), California quail (*Callipepla californica*), western scrub-jay (*Aphelocoma californica*), and western gray squirrel (*Sciurus griseus*) are found in these habitats. Approximately 50 species of birds and mammals eat acorns, an important value of valley and foothill woodlands to the state's wildlife.

Valley and foothill woodlands provide tall trees suitable for perching and nesting sites for Swainson's hawk (*Buteo swainsoni*). Serpentine soil areas within valley and foothill woodlands may support Indian Valley brodiaea (*Brodiaea coronaria* ssp. *rosea*).

Chaparral

Chaparral consists of a dense growth of evergreen, hard-leaved shrubs that grow generally between 3 and 6 feet tall. Chaparral is often impenetrable, and is notably deficient in trees and herbaceous plants. Characteristic plant species are chamise (*Adenstoma fasciculatum*), toyon (*Heteromeles arbutifolia*), holly-leaf cherry (*Prunus ilicifolia*), mountain mahogany (*Cercocarpus betuloides*), and various species of manzanita (*Arctostaphylus* spp.). Also typically present are scrub oak (*Quercus dumosa*) and poison oak (*Toxicodendron diversiloba*). Chaparral is often interdigitated with foothill woodlands and valley grassland, providing a diverse habitat mosaic for wildlife. Serpentine soil areas within chaparral may support Indian Valley brodiaea.

Chaparral is subject to frequent burning, being naturally adapted to fires. Shrub growth is dense and the plants have dry, resinous leaves. Burned chaparral plants quickly crown-sprout after a fire providing excellent wildlife habitat. Fire also favors annual plants that need fire to germinate their seeds or open conditions to grow. An entire guild of annual herbaceous plants that occur in chamise chaparral have seeds that lie dormant for long periods until fires trigger their germination approximately every 20-25 years. The first few years after a fire the chaparral will be dominated by lush herbaceous plants that are eventually crowded out by the rapidly growing chaparral shrubs.

Riparian Woodland

Riparian woodland includes the trees, other vegetation, and physical features normally found on the banks and floodplains of rivers, streams, and other bodies of fresh water. Although riparian areas occupy a very small part of the total land area in the state, they support a tremendous number of fish and wildlife species. Riparian vegetation can help reduce flood flows and flood damage, improve groundwater recharge, prevent damaging chemicals and other compounds from reaching open water, and reduce wind and erosion on adjacent lands. Unfortunately, human activities have destroyed or fragmented most of this valuable habitat over the past 150 years. It is estimated that only 1 percent of the original riparian woodlands can be considered intact (WWF). Channelization, dams, clearing for pasture, flood control, invasive alien plants,

excessive grazing by domestic livestock, fires, and logging have all taken their toll.

Riparian woodland typically has an overstory of large deciduous trees including Fremont cottonwood (*Populus fremontii*), valley oak, California sycamore (*Platanus racemosa*), California box elder (*Acer negundo var. californicum*), California walnut (*Juglans californica hindsii*), Oregon ash (*Fraxinus latifolia*), and a variety of willows (*Salix* spp.). Understory varies from dense shrubby thickets dominated by California blackberry (*Rubus ursinus*) and willows to herbaceous annuals and non-native grasses. Vines such as California wild grape (*Vitis californica*) and Dutchman's pipe (*Aristolochia californica*) are also common.

Tall riparian trees provide perching and nesting habitat for Swainson's hawk. Western yellow-billed cuckoos (*Coccyzus americanus occidentalis*) nest in dense riparian thickets and forage for insects in the riparian canopy. California red-legged frogs (*Rana aurora draytonii*) are associated with deep-water pools with dense stands of overhanging vegetation. Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat for frogs during winter. Elderberry bushes (*Sambucus* spp.) provide suitable habitat for valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). Many neotropical migratory birds use these forests for dispersal pathways or breeding habitat.

Freshwater Marsh

Freshwater marsh is a type of wetland, a general term referring to the transitional zone between aquatic and terrestrial (or upland) areas. In wetlands, the water table is usually at or near the surface, or the land is covered by shallow water for at least a portion of the year. Wetlands are a highly productive source of nutrients, supporting a vast array of plants and animals, many of them microscopic. They also filter certain sediments and pollutants that otherwise would be released into open water.

Freshwater marsh is characterized by dense cover of perennial, emergent plant species with patches of open water. This community is found on sites that are permanently flooded by fresh water, where only plant species adapted to anaerobic (oxygen depleted) soil conditions can survive. Typical freshwater marsh plant species include cattail (*Typha* spp.), tule (*Scirpus acutus*), common spikerush (*Eleocharis macrostchya*), rushes (*Juncus* spp.), and sedges (*Carex* spp.).

Intensive agricultural development has left few freshwater marshlands (less than 6 percent of their original extent), and those that are left are generally degraded and heavily managed for duck production, water impoundments, or runoff and effluent storage (WWF). Dams, channelization of rivers, and pollution continue to threaten the productive freshwater biodiversity of the region.

Freshwater marsh is among the most productive wildlife habitats in California. It provides food, cover, and water for more than 160 species of birds (DFG 1988), and numerous mammals, reptiles, and amphibians. The freshwater marshes of the central

valley support enormous populations of ducks, geese, shorebirds, and wading birds, particularly during the winter and migration seasons. Many species rely on freshwater marsh for their entire life cycle. The endangered giant garter snake (*Thamnophis gigas*) uses wetlands as its primary habitat. Tricolored blackbirds (*Agelauis tricolor*) nest in colonies primarily in freshwater marshes dominated by cattails and tules. California red-legged frogs inhabit freshwater marshes and are also often found in man-made ponds (stock ponds).

Valley Grassland

The grasslands of California's Central Valley are a unique part of the state's natural heritage. Much like the once extensive Great Plains and prairie habitats of the Midwest and Intermountain West, these grasslands support a highly adapted suite of vegetation types and wildlife species. Valley grasslands extend up into the foothill areas in and adjacent to foothill woodlands and chaparral.

Originally, valley grassland was dominated by various perennial bunchgrasses such as needle grass (*Nacella* spp.) and bunch or blue grass (*Poa* spp.). These grasses have completely disappeared in large areas of the central valley and foothills due to changes in land use (cultivation, urbanization, inappropriate grazing). In areas still supporting natural habitat, most native grasslands have converted to nonnative annual grassland. Remnant perennial bunchgrass grasslands still occur but are significantly reduced in size and range.

Annual grassland is characterized by a dense cover of nonnative annual grasses with numerous species of nonnative annual forbs, and some native wildflowers. Typical grass species include bromes (*Bromus diandrus*, *B. hordeaceus*, and *B. madritensis* ssp. *rubens*), wild oat (*Avena fatua*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), dogtail grass (*Cynosurus echinatus*), and Italian ryegrass (*Lolium multiflorum*). Common nonnative forbs include vetches (*Vicia* spp.), filarees (*Erodium* spp.), and clovers (*Trifolium* spp.). Native wildflowers such as California poppy (*Eschschozia californica*), California goldfields (*Lasthenia californica*), Fremont's tidy-tips (*Layia fremontii*), lupines (*Lupinus* spp.), purple owls clover (*Orthocarpus purpurascens*), and hayfield tarweed (*Hemizonia congesta*) are also common in annual grassland habitat.

Central Valley grasslands typically occur in relatively level terrain at low elevations, an ideal setting for urban, industrial, and agricultural development. Today, based on analysis of land cover data, less than 10% of the Valley's grasslands remain (DFG 2003). As a consequence of this tremendous loss, many grassland-dependent bird and mammal species have experienced population declines. One Covered Species, the tricolored blackbird is seasonally near-endemic to California and uses grasslands for foraging habitat. Swainson's hawks also forage in grasslands. Burrowing owls (*Athene cunicularia*) extensively use grasslands for foraging and nesting in burrows excavated by fossorial mammals such as California ground squirrels (*Spermophilus beechyi*). Serpentine soil areas within valley grasslands may support Indian Valley brodiaea.

Vernal Pools

Vernal pools are seasonally flooded depressions found on ancient soils with an impermeable layer such as a hardpan, claypan, or volcanic basalt. Vernal pools are associated with a variety of vegetation communities including grassland, blue oak woodland, oak juniper woodland, mixed conifer forest, silver sagebrush (*Artemisia cana*) flats, and sedge meadows. The impermeable layer allows the pools to retain water much longer then the surrounding uplands; nonetheless, the pools are shallow enough to dry up each season. Vernal pools often fill and empty several times during the rainy season depending on the rain cycle. Several types of pools are recognized including valley pools in basin areas that are typically alkaline or saline, terrace pools on ancient flood terraces of higher ground, and pools on volcanic soils. During wet springs, the rims of the pools are encircled by flowers that change in composition as the water evaporates and recedes. By early summer, the water has evaporated, and the impermeable hardpan pools appear brown, barren, and cracked.

Over 66 percent of the historical acreage of vernal pools has been destroyed, with the most intact pools left on the higher terraces (WWF). Agriculture, conversion to irrigated pastureland, water diversion, channelization, and draining have all taken their toll on this unique community.

Only plants and animals that are adapted to this cycle of wetting and drying can survive in vernal pools over time. Waterfowl and shorebirds heavily use vernal pools for foraging and resting while the pools hold water. Amphibians such as California tiger salamander (*Ambystoma californiense*) emerge from underground upland burrows with the first winter rains to feed and breed in the inundated pools. Vernal pool vegetation is ancient and unique with many local endemic species. State-listed species restricted to vernal pool grasslands include Boggs Lake hedge-hyssop (*Gratiola heterosepala*), Butte County meadowfoam (*Limnanthes floccosa *ssp.* californica*), hairy Orcutt grass (*Orcuttia pilosa*), slender Orcutt grass (*Orcuttia tenuis*), and Greene's tuctoria (*Tuctoria greenei*). Aquatic invertebrates restricted to these unique habitats are also Covered Species including conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*). These plants and animals spend the dry season as seeds, highly adapted eggs (offspring persist in suspended development as desiccation-resistant embryos commonly called cysts), and then grow and reproduce when the ponds are again filled with water.

Table 3-1. Covered Species Occurrence by Natural Community

Natural Community	Covered Species
Valley and Foothill Woodland	Swainson’s hawk, Indian Valley brodiaea
Chaparral	Indian Valley brodiaea

Riparian Woodland	Swainson's hawk, western yellow-billed cuckoo, California red-legged frog, valley elderberry longhorn beetle
Freshwater Marsh	giant garter snake, California red-legged frog
Annual Grassland	Swainson's hawk, Indian Valley brodiaea
Vernal Pools	conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, Boggs Lake hedge-hyssop, Butte County meadowfoam, hairy Orcutt grass, slender Orcutt grass, Hoover's spurge, Greene's tuctoria

Table 3-2. Species of Conservation Concern Occurrence by Natural Community

Natural Community	**Covered Species**
Valley and Foothill Woodland	Sacramento Valley red fox
Chaparral	Sacramento Valley red fox
Riparian Woodland	Sacramento Valley red fox
Freshwater Marsh	tricolored blackbird
Annual Grassland	burrowing owl, tricolored blackbird, Sacramento Valley red fox

3.1.3 Ranching and Wildlife Habitat

There has been an historic reduction in the amount of habitat for wildlife, including habitat supporting candidate, threatened and endangered species. With more than 50 percent of California in private ownership, private landowners play an important role in maintaining the state's wildlife diversity. Agriculture is an important element of the existing environment of California, and its preservation is essential, not only to the state's economic well-being, but the health and well-being of its population. Such economic and environmental significance places great importance on the resolution of conflicts between normal agricultural operations and protection of candidate, threatened and endangered species.

Many endangered and threatened species occur primarily or exclusively on privately owned property, and it is critical to their protection to involve the private sector in their conservation and recovery. There are varying degrees of compatibility between particular agricultural activities and the habitat needs of California's candidate, threatened, and endangered species. Certain agricultural practices may impair habitat used by these species, and other practices may contribute to or sustain such habitat. Continuation of agricultural land uses also may forestall other land uses, such as urbanization or intensive development, which might further impair listed species habitat.

Many farmers and ranchers are concerned about land use restrictions that may occur if listed species colonize their property or increase in numbers as a result of

wildlife habitat management. Agricultural landowners have a strong disincentive to maintain species-beneficial habitat on their property, or to allow it to become established. The existence of habitat would increase the likelihood that candidate, threatened and endangered species may appear on agricultural lands, and therefore interfere with agricultural operations. The interference would occur because of the need to avoid injuring or killing (Take of) listed species at all costs. Violations of CESA can include a criminal penalty of up to $5,000 and/or one year's imprisonment for each violation, and a civil penalty of up to $10,000 for each listed species taken. Violations of ESA can include criminal penalty of up to $100,000 and one year's imprisonment, and a civil penalty of up to $25,000 for each violation. Thus, landowners often avoid the risk by limiting land and water management practices that could enhance and maintain habitat.

There are other situations in which landowners encounter opportunities (e.g., federal cost share programs) to enhance or encourage habitat for listed species. However, endangered species laws may discourage farmers and ranchers from availing themselves of these opportunities because of the potential interference with their agricultural operations by the presence of listed species. Consequently, the farmers and ranchers have an incentive to discourage habitat on their land to prevent the potential interference of threatened and endangered species with their agricultural activities.

A focus on prohibiting the Take of individual animals or on preventing incremental habitat destruction has not been sufficient for species recovery because it is difficult to design programs directed at the recovery of species using only the tools of loss prevention. Inadequate remaining habitat is a principal cause of many listed species' declines. Recovery plans typically call for establishing additional conservation habitat for selected species, and in recent years, major emphasis has been placed on multi-species and ecosystem-level planning and conservation. One conventional approach is to acquire and manage permanent tracts of properly connected habitat, to assure that recovering species will have adequate available habitat, proper potential for individual and population movement, and minimization of various forms of individual and population stress.

However, acquisition funding is limited and will likely never be sufficient for all the protection and restoration needed for recovery. Additionally, when lands are acquired, funds to manage these lands are rarely available. Land management is a significant expense to ensure the lands are maintained in a condition to promote wildlife habitat. Other measures including control of exotic species, improved habitat conditions through managed grazing, and restoration of additional habitat are needed. Safe harbor agreements and voluntary local programs encourage the implementation of practices to maintain and enhance habitat compatible with agricultural operations. The voluntary local programs will therefore enhance both wildlife and agricultural resources. Ultimately, habitat and species recovery can only succeed with voluntary landowner participation.

Although the primary purpose of the project is wildlife habitat enhancement, the benefits are not limited to wildlife. The practices that will benefit sensitive species are intended to be compatible with and beneficial to ranching enterprises. In fact, some

practices may enhance ranch profitability by improving grazing conditions and reducing management expenses (such as reducing pesticide use, improving water management, and reducing soil erosion). The ranch operation may benefit from new watering sources, improved water quality, beneficial insects, and the additional flexibility provided by protections from the wildlife agencies. As long as baseline conditions are maintained and beneficial activities are implemented, the rancher is protected against incidental Take of the Covered Species during routine and ongoing ranching activities.

Here are a few examples of how managing for both wildlife habitat and livestock production are mutually beneficial:

- Many ranchers use ponds and creeks as direct water sources, which can lead to trampled ground, erosion, poor quality water, little vegetation, and even less wildlife. Erosion can lead to costly repairs to stabilize the banks. Poor quality water may not be suitable for livestock. Eroding creeks and ponds with little vegetation may lead to lower water supplies. Creating riparian pastures to manage the impacts that cattle have on streams can significantly improve wildlife habitat. Ranchers may then use gravity fed or solar-powered pumps to move water from ponds and creeks into storage tanks, where the water flows out to the livestock troughs. Consequently, the cattle are provided a reliable, good quality water source and the ponds and creeks provide improved wildlife habitat.

- Closely controlled grazing is an important tool for managing vegetation to benefit wildlife. Quick, intense grazing and then moving livestock on to other pastures mimics the effects of herds of elk and antelope that once occupied California's rangelands. When timed correctly, a short duration intense grazing regime can reduce non-native species competition for native vegetation.

- Most beef cattle in the U.S. are raised on grass and finished in feedlots, where they are fed grain. Now, however, there are a growing number of consumers who want grass-fed or locally grown beef raised and are willing to pay more for this product (N. Cremers, pers. comm.). Although ranchers rarely use pesticides in their operations, eliminating pesticides is another step toward an organic livestock business. Organically grown livestock fetch higher prices at market. In addition, sensitive species that forage on insects, such as the western yellow-billed cuckoo, may benefit from an increased insect food source, as may burrowing owls that are dependent on ground squirrels to dig burrows for their nests.

- Vernal pools are often in areas where livestock have grazed for many decades. California ranchers and vernal pools have evolved for centuries, with several generations of ranchers both utilizing and appreciating the beauty and values of vernal pools in the landscape. Appropriately timed grazing appears to maintain native species diversity in vernal pools and their adjacent watershed uplands.

- Riparian vegetation and hedgerows can provide shade for livestock and habitat

for beneficial insects that prey on insect species destructive to crops. Healthy riparian vegetation stabilizes stream and pond banks, and filters out impurities in the water. Hedgerows can help to reduce fragmentation of habitat, reduce soil erosion, condition the soil, create a wind block, capture dust from adjacent roads, and attract beneficial insects. Hedgerows can replace roadside weeds which harbor insects that are known to damage crops (Morandin, *et. al.,* in press).

- Oak woodlands provide a wide range of societal benefits including aesthetics, recreational opportunities, watershed protection, and wildlife habitat. Livestock grazing is a factor in poor oak regeneration in California. Both cattle and sheep eat oak seedlings, acorns, and foliage as evidenced by distinct browse lines on trees within grazed areas (McCreary and George 2005). Managing grazing regimes to foster oak regeneration will help to protect the watershed from erosion, enrich the soil through nutrient cycling, and provide diverse wildlife habitat.

Historical guidance provided on grazing management as a tool for wildlife habitat improvement focused almost exclusively on wildlife species with consumptive value (desirable for hunting). Today, wildlife is viewed much more broadly, and many conservation efforts are focused on biological diversity rather than just a few target species. The real challenge to grazing managers is to develop grazing systems that do not degrade, or in some cases, that provide recovery of the biotic and abiotic components of the landscape in question (Vavra 2005). A balance must be struck between rangeland management activities that benefit wildlife and maintaining an economically viable ranching operation. Landowner incentive programs in California and other states have many participants, a testimony that the balance is achievable.

3.2 Covered Species

The CRCC VLP proposes to enhance and manage habitat for eighteen (18) sensitive species. The members of the California Rangeland Conservation Coalition who participated in the discussions to design the CRCC VLP (California Cattlemen's Association, California Farm Bureau Federation, U.S. Fish and Wildlife Service, U.S.D.A. Natural Resources Conservation Service, Environmental Defense Fund, Defenders of Wildlife, Sustainable Conservation) identified all the potential sensitive species that might be addressed by the CRCC VLP. The list of potentially Covered Species was refined based on the location of the project area, extent of rangeland in the project area, natural communities in the rangeland areas, and known species occurrences. The list was further refined by information received from species experts and input from the ranching community about which species landowners want to cover. Species that potentially met these criteria, but for which too little information is known about how beneficial activities would affect them, were eliminated from consideration. Maps of Covered Species occurrences by county are included in Figures 3-1 through 3-4.

The Covered Species list includes only State and federally listed species, of

which there are fifteen (15). DFG is reviewing approval of the CRCC VLP for eight State-listed species. The CRCC VLP also addresses habitat enhancement for three (3) non-listed sensitive species for which take cannot be authorized. It is hoped that the enhancement measures contained in the beneficial activities will improve conditions for their populations and help to prevent the need to list them in the future.

3.2.1 State-listed Species

CCA is requesting Take authorization for the following eight (8) State threatened and endangered species. Lists of the CRCC VLP Covered Species occurrences by county are included in Appendix D, and maps are included in Figures 3-1 through 3-4. Information about each species' range, habitat needs, and primary threats follows.

- ***Giant garter snake (*Thamnophis gigas*) – CA Threatened, Federal Threatened***
- ***Swainson's hawk (*Buteo swainsoni*) – CA Threatened***
- ***Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – CA Endangered, Federal candidate***
- ***Indian Valley brodiaea (*Brodiaea coronaria *ssp.* rosea*) – CA Endangered***
- ***Boggs Lake hedge-hyssop (*Gratiola heterosepala*) – CA Endangered***
- ***Butte County meadowfoam (*Limnanthes floccosa *ssp*. californica*) – CA Endangered, Federal Endangered***
- ***Hairy Orcutt grass (*Orcuttia pilosa*) – CA Endangered, Federal Endangered***
- ***Slender Orcutt grass (*Orcuttia tenuis*) – CA Endangered, Federal Threatened***

Giant Garter Snake ***(*Thamnophis gigas*) – CA Threatened, Federal Threatened***
(primary sources ***DFG 2005, FWS 1999c and 2008)***

The giant garter snake was listed by California in 1971 and FWS in 1993. The giant garter snake is one of the largest garter snake species reaching a total length of over 5 feet. Females tend to be slightly longer and proportionately heavier than males. Generally, the giant garter snake has a dark dorsal background color with pale dorsal and lateral stripes, although coloration and pattern prominence are variable.

Endemic to wetlands in the Sacramento and San Joaquin valleys, giant garter snakes inhabit marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways and agricultural wetlands, such as irrigation and drainage canals, rice fields and the adjacent uplands. Essential habitat components consist of: (1) wetlands with adequate water during the giant garter snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) upland habitat with grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for over-wintering habitat with escape cover (vegetation, burrows) and underground refugia (crevices and small mammal burrows). Giant garter snakes are typically absent from larger rivers and other bodies of water that

support introduced populations of large, predatory fish, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey.

Rice fields have become important habitat for giant garter snakes, particularly the associated canals and their banks for both spring and summer active behavior and winter hibernation. While within the rice fields, giant garter snakes forage in the shallow water for prey, utilizing rice plants and vegetated berms dividing rice checks for shelter and basking sites.

The historical range of the snake is thought to have extended from the vicinity of Chico, Butte County, southward to Buena Vista Lake, near Bakersfield, in Kern County. Early collecting localities of the giant garter snake coincide with the distribution of large flood basins, particularly riparian marsh or slough habitats and associated tributary streams. The known range of the giant garter snake has changed little since the time of listing. In 2005, giant garter snakes were observed at the City of Chico's wastewater treatment facility, approximately ten miles north of what was previously believed to be the northernmost extent of the species' range. The southernmost known occurrence is at the Mendota Wildlife Area in Fresno County. No sightings of giant garter snakes south of Mendota Wildlife Area have been made since the time of listing.

Habitat loss is a primary threat to this species. Prior to reclamation activities beginning in the mid- to late-1800s, about 60 percent of the Sacramento Valley was subject to seasonal overflow flooding providing expansive areas of giant garter snake habitat. Now, less than 10 percent, or approximately 319,000 acres, of the historic 4.5 million acres of Central Valley wetlands remain, of which very little provides habitat suitable for the giant garter snake. Loss of habitat due to agricultural activities and flood control have extirpated the giant garter snake from the southern one-third of its range in former wetlands associated with the historic Buena Vista, Tulare, and Kern lakebeds.

Other threats include ongoing maintenance of aquatic habitats for flood control and agricultural purposes, which can fragment and isolate available habitat, prevent dispersal of snakes among habitat units, and adversely affect the availability of the snake's food items. Other threats include application of herbicides to control aquatic vegetation, rodent control activities within upland aestivation habitat for the giant garter snake, and livestock grazing along the edges of water sources that may degrade water quality.

Swainson's Hawk ***(*Buteo swainsoni*) – CA Threatened***
(primary source ***DFG 2005)***

Swainson's hawk was listed in California in 1983. Swainson's hawks were once found throughout lowland California and were absent only from the Sierra Nevada, north Coast Ranges and Klamath Mountains, and portions of the desert regions of the State. Today, Swainson's hawks are restricted to portions of the Central Valley and Great Basin regions where suitable nesting and foraging habitat is still available.

Swainson's hawks require large, open grasslands and croplands with abundant prey in association with suitable nest trees. Swainson's hawks are opportunists that benefit from some farming. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Unsuitable foraging habitat includes vineyards, orchards, certain row crops, rice fields, corn, and cotton fields. Preferred prey is small mammals and large insects. Swainson's hawk is a migratory species, generally found in California only during the nesting season from mid-March through September. Nest sites may be found in mature riparian forest, lone trees or groves of oaks, other trees in agricultural fields, and mature roadside trees. Some mature landscape trees in residential areas can provide nest sites although foraging areas must occur in proximity to the nest trees. Valley oak, Fremont cottonwood, walnut, and large willow are the most commonly used nest trees in the Central Valley with an average height of about 58 feet, and ranging from 41 to 82 feet. The majority of Swainson's hawk territories in the Central Valley are in riparian systems adjacent to suitable foraging habitats.

The loss and conversion of native grasslands and agricultural lands to various residential and commercial developments is the primary threat to Swainson's hawk populations throughout California. Additional threats are habitat loss caused by riverbank protection projects; conversion from agricultural crops that provide abundant foraging opportunities to crops such as vineyards and orchards, which provide fewer foraging opportunities; shooting; pesticide poisoning of prey animals and hawks on foraging and wintering grounds; competition from other raptors; and human disturbance at nest sites.

Western Yellow-billed Cuckoo ***(*Coccyzus americanus occidentalis*) – CA Endangered, Federal candidate***
(primary source ***DFG 2005)***

The western yellow-billed cuckoo was listed in California in 1971. It is a neo-tropical migrant that winters in South America. Before its precipitous decline, it summered and bred in most of the western United States, southernmost Canada, and northern Mexico.

The western yellow-billed cuckoo requires dense, large tracts of riparian woodlands with well developed understories for breeding (gallery forests). It occurs in deciduous trees and shrubs, especially willows that are preferred for roost and nest sites. River bottom and other moist habitats near slow moving water courses where humidity is high are ideal nesting habitat. In the Sacramento Valley, orchards adjacent to streams have also been utilized by this species. Colonization or the detection of this species in foothill habitats is not likely; however, habitat linkages of sufficient sizes and quality are increasing due to recent conservation efforts and can potentially attract birds to move into new territories. One study showed that cuckoos did not use suitable habitat when the riparian stand was less than seven acres in size. They mainly eat insects, especially tent caterpillars and cicadas, but also some lizards, eggs of other birds and

berries.

The western yellow-billed cuckoo is threatened by loss and degradation of its habitat due to land clearing, fire, flood control projects, surface water diversions and groundwater pumping, and overgrazing by livestock. Such disturbances often foster the establishment of invasive non-native plants such as salt cedar (*Tamarix* spp.) and giant reed (*Arundo donax*). The resulting fragmentation reduces the size and quality of habitat for the cuckoo, potentially leading to local extinctions. Migration routes can also be lost or fragmented, thus affecting the ability of the cuckoo to recolonize habitat areas. Hughes (1999) identifies restoration of riparian habitats and elimination of pesticide spraying in orchards adjacent to riparian areas as key management measures.

Indian Valley Brodiaea ***(*Brodiaea coronaria *ssp.* rosea*), CA Endangered***
(primary source ***DFG 2005)***

The Indian Valley brodiaea was listed in California in 1979. Indian Valley brodiaea produces long, linear leaves from a perennial corm. The corms are dormant during the summer and fall. Following the start of the winter rainy season, the plants send up three to five grasslike leaves. The plants bloom in late May and June, sending flowering shoots up to 8 inches tall with 3-6 pink flowers. After setting seed, the plants return to their summer dormancy.

It occurs in meadows and other vernally moist areas in closed-cone coniferous forest, chaparral, valley and foothill woodland, and foothill grassland habitats. Populations are restricted to serpentine clay and gravel in open areas along creeks, meadows and flood terraces, and gravel banks of ephemeral creeks. This subspecies often occurs with other rare serpentine plants. The soils are derived from serpentine and are mapped as the Henneke, Okiota, Dubakella, and Montara soil series. Most of the known populations are between 1,115 and 4,760 feet elevation in Lake County in the vicinity of Indian Valley Reservoir, with a few other occurrences in adjacent Colusa, Glenn, and Tehama Counties. The taxonomic identity of some of these populations is in question, and it may take the assistance of a taxonomic specialist to confirm the species determination of some populations.

The filling of Indian Valley Reservoir in 1975 eliminated much of the historic habitat for this species. A portion of the population's occupied habitat in Glenn County is used as a local dump. BLM has established the Indian Valley Area of Critical Environmental Concern (ACEC) and Research Natural Area Management Plan to protect and enhance 40 acres of existing Indian Valley brodiaea habitat on their land. Indian Valley brodiaea is still considered to be declining.

Boggs Lake Hedge-Hyssop ***(*Gratiola heterosepala*) – CA Endangered***
(primary sources ***DFG 2005, FWS 2005)***

Boggs Lake hedge-hyssop was State-listed in 1978. It is found in shallow waters or moist clay soils of vernal pools and in marshy areas on the margins of

reservoirs and lakes, as well as in man-made habitats such as borrow pits and cattle ponds. Occupied wetlands are amongst annual grassland, oak woodland, juniper woodland, or coniferous forest. Boggs Lake hedge-hyssop is a small, semi-aquatic, herbaceous annual in the figwort family (Scrophulariaceae). It has opposite leaves, blunt, unequal sepals, and yellow and white flowers on short stalks. It blooms from April to June.

When first described in 1954, Boggs Lake hedge-hyssop was known only from Boggs Lake in Lake County, and until the late 1980s, from only a limited number of occurrences in vernal pool habitat in the State. Surveys of vernal pool habitat in recent years have located many additional occurrences of this species, and it is now known from more than 80 occurrences from Modoc County south to Fresno County. These additional California occurrences include nine in Shasta County and six in Tehama County. The distribution of Bogg's Lake hedge-hyssop populations is patchy throughout its range, even in areas of suitable habitat. Uneven distribution and abundance may be due to artificial or natural factors, including historic land management practices (e.g., discing or land leveling) and site characteristics such as soil types and landforms. Due to the brief survey window for finding Bogg's Lake hedge-hyssop, and because the plants are small and inconspicuous, it is likely that other undiscovered populations exist.

Boggs Lake hedge-hyssop occurs in vernal pools on private land and on lands owned and managed by agencies and organizations including the DFG, U.S. Bureau of Land Management (BLM), California Department of Parks and Recreation, The Nature Conservancy, and U.S. Forest Service (USFS). In addition, many of the known sites occur at the edges of reservoirs and stock ponds, which should be considered temporary habitat at best. Although the known number of occurrences of Boggs Lake hedge-hyssop has increased as more surveys have been conducted, both the quality and quantity of available habitat have declined during the same time period as vernal pools have been removed for agricultural and urban development and damaged by overgrazing, invasion by weedy species, and offroad vehicle traffic. Populations have also been disturbed or extirpated by hydrologic alteration and by discing and grading.

Trampling and herbivory can be detrimental if they occur before seed set or if use is concentrated in a small area. Moderate grazing is believed to be a compatible use if it occurs after the plants set seed. Directed research would help establish appropriate use levels and seasons.

Butte County Meadowfoam ***(*Limnanthes floccosa *ssp*. californica*) – CA Endangered, Federal Endangered***
(primary sources ***DFG 2005, FWS 2005)***

Butte County meadowfoam was listed by the State in 1982 and FWS in 1992. Butte County meadowfoam is restricted to ephemeral drainages (swales), vernal pool depressions in swales, and occasionally around edges of isolated

vernal pools. It generally occurs on level to gently sloping terrain on poorly drained soils with shallow soil layers impermeable to water infiltration. The habitat associated with Butte County meadowfoam is characterized by saturated soils and pools with a short lived inundation period. Butte County meadowfoam is found more often within the swale system between vernal pools than in the pools themselves. It is associated with other vernal pool plants such as California goldfields, yellow carpet (*Blennosperma nanum*), and Fremont's tidy-tips.

Butte County meadowfoam is a small, densely hairy annual in the false mermaid family (Limnanthaceae). Its stems are less than 10 inches long; leaves divided into five to 11 leaflets. The white flowers have dark yellow veins at the base of each of the five petals that generally appear in late March through April.

Butte County meadowfoam is known from 11 extant occurrences. Two remaining locations have been extirpated. It has never been extensive in its range. The species is restricted to a narrow 25-mile strip along the eastern flank of the Sacramento Valley from central Butte County to the northern portion of the City of Chico. Its habitat is highly fragmented, with populations clustered in central Butte County near the type locality and in and near the City of Chico. All known populations are subject to urban or commercial development, road maintenance activities, conversion of agricultural lands to other uses, and/or road widening or realignment, e.g. widening of Highway 149 by Caltrans. Additional threats include illegal trash dumping, off-highway vehicle use, and competition from grasses and other weedy nonnative plants. Appropriate grazing practices may help to deal with this competition.

Various species in the genus *Limnanthes* have been studied extensively because meadowfoam seeds produce a type of oil that is potentially valuable for many industrial and pharmaceutical uses. However, most of the research has been on taxa other than Butte County meadowfoam.

Hairy Orcutt Grass ***(*Orcuttia pilosa*) – CA Endangered, Federal Endangered***
(primary sources ***DFG 2005, FWS 2005)***

Hairy Orcutt grass was listed by the State in 1979 and FWS in 1997. ***Hairy Orcutt grass occurs in vernal pools in rolling topography formed on remnant alluvial fans, high and low stream terraces, and tabletop lava flows in Butte, Glenn, and Tehama counties in the Sacramento Valley and Stanislaus, Merced, and Madera counties in the San Joaquin Valley. Within about the last decade, 10 new natural occurrences of hairy Orcutt grass have been discovered, including 4 in Tehama County. Currently, the main area of concentration for hairy Orcutt grass (about one third of the known populations) is the Vina Plains in Tehama County, This species occurs in Northern Basalt Flow, Northern Claypan, and Northern Hardpan vernal pools within annual grasslands.***

Hairy Orcutt grass is a small, tufted annual in the grass family (Poaceae). The plant has several stems 2-8 inches tall, each stem ending in a long, spike-like

inflorescence. Foliage is grayish, with soft, straight hairs. Hairy Orcutt grass flowers from May through September. Hairy Orcutt grass is found on both acidic and saline alkaline soils, in pools with an iron-silica cemented hardpan or claypan. The species is typically associated with larger and/or deeper vernal pools that have relatively long periods of inundation (i.e., ponding until June or July) which reduces competition from other plants.

Conversion of vernal pool habitat to irrigated agriculture, vineyards, or orchards, or to urban uses has been the primary factor leading to decline in this species. Urbanization, agricultural land conversion, highway expansion projects, discing, off-highway vehicle use, and competition from nonnative weeds continue to threaten most of the remaining populations. Grazing would help establish appropriate use levels and seasons.

Slender Orcutt Grass ***(Orcuttia tenuis) – CA Endangered, Federal Threatened***
(primary sources ***DFG 2005, FWS 2005)***

Slender Orcutt grass was listed by the State in 1979 and FWS in 1997. Slender Orcutt grass occurs in vernal pools at 3,000 to 3,600 feet in grassland, blue oak woodland, oak juniper woodland, mixed conifer forest, silver sagebrush flats, and sedge meadows. This species is found primarily on substrates of volcanic origin. Natural pools in which it grows are classified as Northern Volcanic Ashflow and Northern Volcanic Mudflow vernal pools. However, this species has also been reported from other natural and artificially-created seasonal wetlands such as creek floodplains, stock ponds, and borrow pits. Impervious layers range from iron-silica hardpan to bedrock. It is reported from Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama, and Sacramento counties. The primary area of concentration for slender Orcutt grass is still in the vicinity of Dales, Tehama County, where 28 natural occurrences and the three introduced populations apparently remain extant (42.5 percent of occurrences). Four additional occurrences are in the Vina Plains of Tehama County.

Slender Orcutt grass is a weakly-tufted and sparsely-hairy annual grass in the Grass Family (Poaceae). It grows to about two to six inches in height and branches only from the upper half of the stem. The flower stem comprises more than half of the plant's height, and the spikelets are more or less evenly spaced along the inflorescence. The flowering period is from May to July. The main habitat requirement for slender Orcutt grass is standing water of sufficient quantity and duration to drown out most competition and supply its physiological requirements for prolonged inundation, followed by a period of gradual (becoming total) desiccation. Slender Orcutt grass plants generally mature later than other vernal pool annuals, so often they are the only vegetation still green by mid-summer on the vernal pool bed.

A variety of factors have contributed to the continued decline of slender Orcutt grass including off-road vehicle use, intensive livestock grazing, altered hydrology, and competition from other plants. Off-road vehicle use in vernal pools is a particular problem near Redding and in forested areas of the Modoc Plateau. Although moderate

levels of livestock grazing in spring are compatible with slender Orcutt grass, overstocking, summer grazing, and trampling pose threats. However, grazing may be necessary to control aggressive non-native species. Altered hydrology contributes to the decline of slender Orcutt grass by creating conditions unsuitable for its germination, growth, or reproduction, and by promoting the growth of competing plant species.

3.2.2 Other Covered Species and Species of Conservation Concern

The CRCC VLP is a joint effort with the FWS as a programmatic Safe Harbor Agreement. As such, federally-listed species in the project area will also be covered, and FWS intends to issue a permit for Take. Additionally, three other California sensitive species that occur in the project area will be included to encourage habitat enhancement. None of these species will be authorized for Take by DFG, but the program would include beneficial activities that will maintain and enhance habitat for them. If such species were added to the California threatened and endangered lists, Take may be authorized upon DFG's evaluation and verification that the species would not be jeopardized and the measures to minimize Take are adequate. Measures to avoid Take during routine and ongoing ranching activities and return to baseline are incorporated in the VLP. Lists of the CRCC VLP species occurrences by county are included in Appendix D and maps are included as Figures 3-1 to 3-4. Information about each species' range, habitat needs, and primary threats follows.

- ***Conservancy fairy shrimp (*Branchinecta conservatio*) – Federal Endangered***
- ***Vernal pool fairy shrimp (*Branchinecta lynchi*) – Federal Threatened***
- ***Vernal pool tadpole shrimp (*Lepidurus packardi*) – Federal Endangered***
- ***Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) – Federal Threatened***
- ***California red-legged frog (*Rana aurora draytonii*) – Species of Special Concern, Federal Threatened***
- ***Burrowing owl (*Athene cunicularia*) - Species of Special Concern***
- ***Tricolored blackbird (*Agelaius tricolor*) - Species of Special Concern***
- ***Hoover's spurge (*Chamaesyce hooveri*) – Federal Threatened***
- ***Greene's tuctoria (*Tuctoria greenei*) – CA Rare, Federal Endangered***
- ***Sacramento Valley red fox (*Vulpes vulpes ssp. nov*) – no official status***

Conservancy fairy shrimp ***(*Branchinecta conservatio*) – Federal Endangered***
(primary sources FWS 2005 and 2008)

Conservancy fairy shrimp were listed by FWS in 1994. Conservancy fairy shrimp are tiny freshwater crustaceans with delicate elongate bodies, large stalked compound eyes, and 11 pairs of phyllopods (swimming legs that also function as gills). Like most other fairy shrimps, the conservancy fairy shrimp lacks any substantial anti-predator defenses and does not persist in waters with fish. When the temporary pools dry, offspring persist in suspended development as desiccation-resistant embryos (commonly called cysts) in the pool substrate until the return of winter rains and

appropriate temperatures allow some of the “cysts” to hatch. Both flooding and the movement of wildlife within vernal pool complexes allow fairy shrimp to disperse between individual pools. Long-distance dispersal of cysts is thought to be enabled by waterfowl and other migratory birds that ingest “cysts,” and by animals that provide for movement of mud and cysts in feathers, fur, and hooves.

The majority of sites inhabited by this animal are relatively large and turbid vernal pools called playa pools. Playa pools typically remain inundated much longer than most vernal pools, often well into the summer, even though they often have maximum depths comparable to vernal pools. Playa pools are distinguished from vernal pools because they are larger in size and they are much rarer on the landscape than vernal pools.

Conservancy fairy shrimp are endemic to vernal pools in California. This species is restricted to the Central Valley except for one population in Ventura County. Conservancy fairy shrimp are rare, and only eight populations are known (from north to south): (1) Vina Plains, Butte and Tehama counties; (2) Sacramento National Wildlife Refuge (NWR), Glenn County; (3) Yolo Bypass Wildlife Area, Yolo County; (4) Jepson Prairie, Solano County; (5) Mapes Ranch, Stanislaus County; (6) University of California (U.C.) Merced area, Merced County; (7) Grasslands Ecological Area, Merced County; and, (8) Los Padres National Forest, Ventura County.

When the Conservancy fairy shrimp was listed as endangered in 1994, the primary threats to its survival and recovery were stochastic (random) extinction by virtue of the small isolated nature of many of the populations, and loss of habitat due to urban development and conversion to agriculture. If an isolated population is extirpated, the opportunities for recolonization will be greatly reduced due to physical isolation from other source populations.

Substantial progress has been made to protect Conservancy fairy shrimp habitat. The majority of the eight known populations are protected from direct habitat loss by conservation easements or are found on public lands. However, several known localities remain unprotected. Unprotected localities include the majority of the U.C. Merced population, portions of the Vina Plains population, and the entire Mapes Ranch population.

Beyond habitat preservation, other conservation measures, such as habitat management and monitoring, are necessary to ensure the long-term sustainability of this species. Potential threats such as habitat degradation due to inappropriate grazing regimes, pesticide use, invasive weedy species, or other unforeseen circumstances remain for the majority of the localities of Conservancy fairy shrimp whether they are on lands protected from habitat modification or not. Although the habitat might be secure from conversion, it is not secure from ecological factors that can modify habitat and affect population status and viability. The majority of the known Conservancy fairy shrimp localities are not currently managed under management plans, as none of the known localities have sufficient funding for systematic monitoring to determine habitat quality or species status trends.

Vernal pool fairy shrimp ***(*Branchinecta lynchi*) – Federal Threatened***
(primary sources FWS 2005 and 2008)

The vernal pool fairy shrimp was listed by FWS in 1994. This species is a small freshwater crustacean (0.12 to 1.5 inches long) with stalked compound eyes and eleven pairs of phyllopods (swimming legs that also function as gills). The vernal pool fairy shrimp is endemic to California and the Agate Desert of southern Oregon. Like most other fairy shrimp, the vernal pool fairy shrimp lacks any substantial anti-predator defenses and does not persist in waters with fish. When the temporary pools dry, "cysts" persist in the pool substrate until the return of winter rains and appropriate temperatures allow some of the "cysts" to hatch. Both flooding and the movement of wildlife within vernal pool complexes allow fairy shrimp to disperse between individual pools. Long-distance dispersal of cysts is thought to be enabled by waterfowl and other migratory birds that ingest cysts, and by animals that provide for movement of mud and "cysts" in feathers, fur, and hooves.

The vernal pool fairy shrimp is currently found in 28 counties across the Central Valley and coastal ranges of California, and occupies a variety of vernal pool habitats from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. This species occurs in vernal pools in all four counties of the project area (Butte, Glenn, Shasta, and Tehama). Although the vernal pool fairy shrimp is distributed more widely than most other fairy shrimp species in California, it is generally uncommon throughout its range, and rarely abundant where it does occur.

FWS has determined that threats to vernal pool fairy shrimp have not been substantially reduced since the time of listing in 1994. Although progress is being made in protecting remaining large expanses of land from development in some regions, threats such as habitat loss and fragmentation have continued throughout the species range since listing. The primary threats to the species continue to be the modification, destruction, and degradation of suitable habitat, and the resulting habitat fragmentation. Additionally, altered site hydrology, inappropriate grazing levels (cessation of grazing or overgrazing), nonnative invasive plants, and related issues such as thatch build-up, contaminant runoff into vernal pools, and drought and climate change are also major threats. Even on protected lands, new and emerging threats have been identified in the form of hydrologic alteration resulting from invasive nonnative plants. Other new threats include nonnative mosquitofish, climate change, and drought.

Vernal pool tadpole shrimp ***(Lepidurus packardi) – Federal Endangered***
(primary sources FWS 2005 and 2008)

The vernal pool tadpole shrimp was listed by FWS in 1994. This species is found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands in California. This species inhabits vernal pools containing clear to highly turbid water. Vernal pool tadpole shrimp feed on both living organisms such as fairy shrimp and on detritus. This species

can be identified by the large, shield-like carapace that covers the anterior half of their bodies and the paddle-like supra-anal plate located between the paired cercopods (jointed antenna-like appendages). Vernal pool tadpole shrimp have from 30 to 35 pairs of phyllopods (swimming legs that also function as gills), a segmented abdomen, fused eyes, and are hermaphroditic. Mature vernal pool tadpole shrimp range from 0.6 to 3.3 inches in length.

The vernal pool tadpole shrimp has a patchy distribution across the Central Valley of California, from Shasta County southward to northwestern Tulare County, with isolated occurrences in Alameda and Contra Costa Counties. Although vernal pool tadpole shrimp are spread over a wide geographic range, their habitat is highly fragmented and they are uncommon where they are found. The California Natural Diversity Database reports 226 occurrences of vernal pool tadpole shrimp in the following 19 counties: Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba. Sacramento County contains 28 percent, the greatest amount, of the known occurrences.

The distribution of the vernal pool tadpole shrimp remains patchy and sporadic throughout its range, often inhabiting only one or a few vernal pools in otherwise more widespread vernal pool complexes. Habitat for vernal pool tadpole shrimp continues to be highly fragmented throughout its range due to conversion of natural habitat for urban and agricultural uses. This fragmentation, along with the isolated nature of the vernal pool tadpole shrimp populations, increases the chance of extinction for this species.

FWS has determined that threats to vernal pool tadpole shrimp have not been substantially reduced since the time of listing in 1994. Some threats, such as habitat loss and fragmentation, have increased over a substantial portion of the range. The primary threats to the species continue to be the modification and destruction of occupied habitat, and the resulting habitat fragmentation over the landscape. Additionally, altered site hydrology, inappropriate levels of grazing, invasive plants, contaminant runoff into vernal pools, and prolonged drought and climate change are also major threats.

Valley elderberry longhorn beetle ***(*Desmocerus californicus dimorphus*) – Federal Threatened***
(primary sources FWS and FWS 2008)

The valley elderberry longhorn beetle was listed by FWS in 1980. It is a medium sized (0.8 inch long) beetle that is endemic to the Central Valley of California. The beetle is found only in association with its host plant, elderberry shrubs. In order to serve as habitat, the shrubs must have stems that are 1.0 inch or greater in diameter at ground level. The beetle currently inhabits the Central Valley from southern Shasta County south to Fresno County in the San Joaquin Valley. There are 194 records of the valley elderberry longhorn beetle (largely based on exit holes) in the Central Valley.

Adult valley elderberry longhorn beetles are sexually dimorphic with females having a dark metallic green to black elytra with a bright red boarder and males having predominantly red elytra with four dark oblong spots. Adults feed on the foliage and perhaps flowers and are present from March through early June. During this period the beetles mate, and females lay eggs on living elderberry plants. The first instar larvae bore to the center of elderberry stems where they develop for one to two years feeding on pith. Prior to forming their pupae, the elderberry wood boring larvae chew through the bark and then plug the holes with wood shavings. The larvae crawl back to their pupal chamber that they pack with frass. In the pupal chamber, the larvae metamorphose into their pupae and then into adults where upon they emerge between mid-March through June.

At the time of listing, habitat destruction was identified as one of the most significant threats to the beetle based on the 90 percent loss of riparian habitat in the Central Valley. Riparian habitat loss has resulted in fragmented and isolated remnants of valley elderberry beetle habitat. Sub-populations of the animal confined to small habitat areas are likely vulnerable to extirpation from random, unpredictable environmental, genetic, and demographic events. The distances between subpopulations and the beetles limited dispersal ability could make recolonization difficult if extirpation occurred. FWS recommended in 2006 that valley elderberry longhorn beetle be delisted because sightings increased significantly since the time of listing, and primary threats to the species have been reduced. Loss of riparian habitat has slowed and 50,000 acres of riparian habitat have been protected. Over 5,100 acres of beetle habitat have been restored.

California red-legged frog ***(*Rana aurora draytonii*) – Species of Special Concern, Federal Threatened***

(primary sources FWS, FWS 2002 and 2008***)***

The California red-legged frog was listed by FWS in 1996. This species is the largest native frog in the western United States, ranging from 1.5 to 5.1 inches in length. The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Female frogs deposit egg masses on emergent vegetation so that a portion of the egg mass floats on the surface of the water, but the majority, if not all, of the mass is submerged. California red-legged frogs breed from November through March with earlier breeding records occurring in southern localities. Individuals occurring in coastal drainages are highly active year-round, whereas those found in interior sites are normally less active during the cold season.

Adult red-legged frogs prefer dense, shrubby or emergent riparian vegetation closely associated with deep (>2.3 feet), still, or slow-moving water. However, this species has also been found to breed in ephemeral creeks and drainages and in ponds that do not have riparian vegetation by attaching the egg mass to submerged plant debris. The largest densities of red-legged frogs currently are associated with deep pools with dense stands of overhanging willows and an intermixed fringe of cattails.

California red-legged frogs disperse upstream and downstream of their breeding habitat to forage and seek sheltering habitat. During other parts of the year, habitat includes nearly any area within 1-2 miles of a breeding site that stays moist and cool through the summer.

California red-legged frogs do not have a distinct breeding migration. Some frogs remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.5 mile, with a few individuals moving up to 1 to 2 miles. Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas.

California red-legged frogs are currently found in 238 streams or drainages within 23 counties, representing a loss of 70 percent of its former range. This species is still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast Mendocino County, and northern Transverse Ranges. The FWS recovery plan for California red-legged frog includes core areas in Butte, Shasta, and Tehama counties.

Habitat loss and urban encroachment are primary factors that have adversely affected the California red-legged frog throughout its range. These declines are attributed to the destruction, isolation or modification of riparian areas, or conversion of suitable habitat to urban and agricultural uses. Non-native species introduction to California red-legged frog habitat is also a primary threat to this species. Non-native species have been documented to reduce and eventually result in the local extirpation of California red-legged frogs. This has been attributed to predation, competition, and reproduction interference. Non-native species include bullfrogs (*Lithobates catesbeianus)*, red swamp crayfish (*Procambarus clarkii*), signal crayfish (*Pacifastacus leniusculus*), and several species of warm water fish including sunfish (*Lepomis* species), goldfish (*Carassius auratus*), common carp (*Cyprinus carpio*), and mosquitofish (*Gambusia* spp.).

Burrowing owl ***(Athene cunicularia) - Species of Special Concern***
(primary sources LSA 2004, ***DFG 2007)***

Burrowing owl is a California Species of Special Concern and federal Bird of Conservation Concern. Burrowing owls use a variety of natural, uncultivated, and agricultural habitats, any of which can support owls depending on the availability of burrows for cover and nesting and the presence of prey. In general, three habitat attributes are required for a site to support burrowing owls: (1) open, well-drained terrain, (2) short, sparse vegetation, and most importantly, (3) underground burrows.

Burrowing owls have been observed using a variety of habitats, including open prairie, grasslands, open shrub-steppe, agricultural areas, irrigation ditches,

road berms, and vacant lots and fields within urban areas. Grasslands used by burrowing owls typically have short vegetation (usually less than 10 inches tall) allowing for good visibility. Burrows excavated by host burrowers are essential for burrowing owl survival and reproduction, and some host species, for example, ground squirrels, provide owls with early warning of predator presence. The presence of ground squirrels may be the single most important determinant of whether burrowing owls use a given site. At sites where California ground squirrels or natural burrows are absent, owls may use debris piles or other man-made structures (e.g., culverts, drainage pipes) for cover while dispersing or looking for more suitable habitat.

In California, the breeding season, defined as the period from pair bonding to the independence of young, generally runs from February to August. Peak breeding activity occurs from April through July. The diet of burrowing owls is highly variable. The most common food items are large insects and small rodents.

Burrowing owls have been declining throughout their range in the western United States and Canada during the last 60 years. This decline has been attributed to habitat destruction, particularly grassland conversion, and the eradication and control of burrowing mammals. Urbanization results in the direct loss of both nesting and foraging habitat for burrowing owls. Increased urbanization and associated infrastructure (*i.e.*, roads) also results in habitat fragmentation. Crop production itself is likely not a concern, but some management activities associated with intensive agricultural areas (e.g., rodent control, levee maintenance, pesticide use) have the potential to negatively affect owls. Similar to intensive agriculture, dry-land farming as a land use does not pose a threat to burrowing owl populations. However, two management activities associated with this land use, rodent control and discing, have the potential to negatively affect owls. With the proper timing and management regimes, livestock grazing can benefit burrowing owls by keeping vegetation height low, thereby creating ideal habitat conditions for owls (assuming suitable burrows are also present).

Tricolored blackbird ***(Agelaius tricolor) - Species of Special Concern***
(primary sources Beedy ***and Hamilton 1997, LSA 2004)***

The tricolored blackbird is a highly colonial species that is largely endemic to California with over 99% of the population occurring within the state. It is most numerous in the Central Valley and vicinity, but also occurs in the foothills surrounding the valley. Nesting blackbirds' current range extends from northeastern California (including Tule Lake and sometimes Honey Lake) to the southern deserts in Antelope Valley in Los Angeles County.

The current and future status of tricolors is of concern because their geographical range is limited, and the colonial behavior of this species may make them vulnerable to large-scale nesting failures. Tricolors have three basic requirements for selecting their breeding colony sites: (1) open accessible water;

(2) a protected nesting substrate, which is usually either flooded, thorny, or spiny vegetation; and (3) a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony. Tricolor breeding colonies are often in freshwater marshes dominated by tules and cattails. Other colony sites use willows, blackberries* (Rubus *spp.), thistles* (Cirsium *and* Centaurea *spp.), nettles* (Urtica *spp.), or silage and grain fields.

Tricolor foraging habitats in all seasons include pastures, dry seasonal pools, agricultural fields (such as large tracts of alfalfa with continuous mowing schedules), rice fields, feedlots, and dairies. Tricolors also forage occasionally in riparian scrub, saltbush* (Atriplex spp.) *scrub, marsh borders, and grassland habitats.

A large population decline was evident from the 1970s to the present. The main causes for decline of the tricolored blackbird are loss of native wetland habitat for nest building, loss of associated foraging habitat, disturbance and mortality by predators and humans, destruction of colonies by agricultural practices, direct poisoning, and poisoning by selenium. Much of the loss of present-day breeding habitat is associated with land conversions in the San Joaquin Valley. The loss of native vegetation causes tricolors to concentrate in large colonies.

Large concentrated colonies are more vulnerable to catastrophic events that may destroy the entire colony. Tricolors are particularly susceptible to mowing and heavy grazing during the nesting season. Existing colonies in active agricultural fields are susceptible to destruction when crops are harvested. Large colonies of tricolors have been completely destroyed when the silage was harvested.

Hoover's spurge ***(*Chamaesyce hooveri*) – Federal Threatened***
(primary source FWS 2005)

Hoover's spurge was listed by FWS in 1997. The plant is restricted to vernal pools and appears to be adapted to a wide variety of soils, which range in texture from clay to sandy loam. Natural pools in which the plant occurs are primarily classified as Northern Hardpan and Northern Claypan vernal pools. Vernal pools supporting Hoover's spurge typically occur on alluvial fans or terraces of ancient rivers or streams, with a few on the rim of the Central Valley basin. In addition, this species has been reported from several pools that were formed artificially when small ponds were created in appropriate soil types. Deeper pools apparently provide better habitat for this species because the duration of inundation is longer and the deeper portions are nearly devoid of other vegetation, thus limiting competition from other plants. Twenty-six occurrences of Hoover's spurge are known. The majority of these are in Tehama County, with the rest found in Butte, Glenn, Merced, Stanislaus, and Tulare Counties. The Vina Plains of Tehama and Butte Counties contain 14 occurrences (53.8 percent).

Hoover's spurge, also known as Hoover's sanmat, is a prostrate, tap-rooted, annual herb in the spurge family (Euphorbiaceae). It trails along the ground, forming gray-green mats 5 to 100 centimeters (2.0 to 39.4 inches) in diameter. The stems are hairless and contain milky sap. The tiny (2 to 5 millimeter [0.08 to 0.20 inch]) leaves are opposite, rounded to kidney-shaped, with an asymmetric base and a toothed margin. The structures that appear to be flowers actually are groups of flowers. This species is a summer annual. Seeds of Hoover's spurge germinate after water evaporates from the pools; the plants cannot grow in standing water. Beetles (order Coleoptera), flies (order Diptera), bees and wasps (order Hymenoptera), and butterflies and moths (order Lepidoptera) have been observed visiting the flowers and may potentially serve as pollinators.

Agricultural conversions (*i.e.,* from grasslands or pastures to croplands, or from one crop-type to another) are a continuing specific threat. Competition from invasive native and non-native plant species threatens nine of the extant occurrences. Increasing dominance by these competitors may be associated with changes in hydrology and livestock grazing practices. Five of the remaining occurrences of Hoover's spurge are subject to specific hydrologic threats. Hydrology has been altered by (1) construction of levees and other water barriers, and (2) runoff from adjacent agricultural operations, roads, and culverts. Such impacts result in some pools receiving insufficient water, while others remain flooded for too long to allow growth of Hoover's spurge. Although no occurrences have been completely extirpated due to hydrologic changes, the species has been eliminated from one or more individual pools at several sites and a number of the remaining populations appear to be in decline.

Some specific threats also are continuing due to inappropriate livestock grazing practices. While livestock generally do not forage on Hoover's spurge, because it grows very close to the ground and contains a toxic milky sap, cattle trampling has nevertheless been identified as seriously reducing populations at one site each in Butte and Stanislaus Counties. Relatively high livestock stocking rates that often prevail during summer months could similarly damage this plant's populations at other locations. Another localized threat is trampling on certain public and private lands that receive high controlled human usage or vandalism activity.

Greene's tuctoria ***(*Tuctoria greenei*) – CA Rare, Federal Endangered***
(primary sources ***DFG 2005, FWS 2005)***

Greene's tuctoria was listed by DFG in 1979 and by FWS in 1997. Greene's tuctoria is restricted to vernal pools. This unusual member of the grass family (Poaceae), known as Greene's Orcutt grass or Greene's tuctoria, is a small, pale green, hairy, tufted annual. It has several to many stems growing two to six inches tall, each ending in a spike-like inflorescence that may be partly enfolded in the upper leaf. Greene's tuctoria is less tolerant to long periods of water inundation, and is typically found along the margins of deeper vernal pools

instead of in the deeper portions of the pools.

Greene's tuctoria has been reported in ten counties, but is currently only known from Shasta, Tehama, Butte, Glenn, and Merced. Of 42 known localities, only 21 localities are presumed to be extant. The extirpations occurred primarily from conversion of habitat to agricultural cultivation and intensive grazing regimes. The largest concentrations of extant localities are located in the Vina Plains area, in Tehama and Butte counties, where 11 localities are presumed extant. The next largest concentration of localities is in eastern Merced County, where five localities are presumed extant.

Greene's tuctoria has been found in three types of vernal pools: Northern Basalt Flow, Northern Claypan, and Northern Hardpan. The Central Valley pools containing this species have been located in grasslands; the Shasta County occurrence is surrounded by pine forest.

Threats to this species include conversion of habitat to agricultural cultivation, intensive grazing during the plant's flowering season (May to June), competition from weedy invasive plants, and one population is threatened by construction of a landfill. Greene's tuctoria is susceptible to grazing impacts because it is more commonly found along the edges of vernal pools and therefore, susceptible to livestock trampling. This causes soil disturbance and can, indirectly, reduce the density of Greene's tuctoria seedlings. One potential factor unique to this and some other vernal pool plant species may be decimation by grasshopper outbreaks. Grasshoppers have been noted consuming entire populations of Greene's tuctoria before they set seed.

Sacramento Valley red fox ***(Vulpes vulpes ssp. nov) –***
(primary sources Gonzales, A. (***DFG), UC Davis)***

The Sacramento Valley red fox was recently differentiated as a separate genotype of the native red fox in California through genetic analysis. The preliminary evidence that the Sacramento Valley red fox is native was published in the journal Conservation Genetics in a paper primarily about the Sierra Nevada red fox (Perrine *et. al.*). A confirmatory study has also been completed (Sacks *et al*., in press), which demonstrates unequivocally that the Sacramento Valley red fox is native (UC Davis).

This fox is small, approximately 7-11 pounds. It is largely red in color (although variations occur) with black legs, and a distinctive white tipped tail. Typical habitats include grasslands, woodlands, riparian, and agricultural fields where prey is abundant. The Sacramento Valley red fox is primarily distributed on the valley floor below 500 feet elevation, north of the Sacramento River, and includes occurrences in all four counties in the CRCC VLP (UC Davis). It is likely that habitat destruction (*i.e.*, grassland conversion and fragmentation), the eradication and control of burrowing mammals, trapping and pest controls efforts, predation by an increasing coyote population, and roads have contributed to the decline of the Sacramento Valley red fox (A. Gonzales and B. Sacks, pers. comm.).

Due to the long-held belief that the Sacramento Valley red fox was a nonnative pest, the population has received little study. Consequently, we know very little about its ecology, including its current distribution in the Valley, its habitat affinities, its reproductive capacity, or its overall status/health. However, beneficial activities are likely to result in the enhancement and/or restoration and management of Sacramento Valley red fox habitat based on knowledge of habitat needs of low elevation red foxes generally. Additionally, Cooperators may agree to allow research to be conducted on Enrolled Properties to obtain additional information on the species. Management activities are consistent with new guidance for Sacramento Valley red fox conservation that is being developed by the Department. Due to the recent identification of Sacramento Valley red fox as a native species, data records are not yet available through the California Natural Diversity Database, and therefore are not included in Figures 3-1 to 3-4 or 4-1 to 4-4.

3.3 *Other Wildlife*

California's varied topography and climate have given rise to a remarkable diversity of natural communities and a correspondingly diverse array of both plant and animal species. California has more species than any other state in the United States and also has the greatest number of endemic species, those that occur nowhere else in the world (DFG 2003). The natural communities found on rangelands in the project area support a rich diversity of native plant and animal species. Three regions in the project area, the North Coast range, the Sierra Nevada foothills, and Cascade Range, are known for their considerable plant diversity. Species must be adapted to hot dry summers and cool wet winters. Highly varied soil types also influence species diversity.

The beneficial activities that landowners will undertake on their ranches in association with the CRCC VLP will also benefit other sensitive species and more common wildlife species. Lists of other sensitive species occurrences by county are included in Appendix D and maps are included as Figures 4-1 to 4-4.

For this EA, other wildlife species are described for the natural communities within the project area that provide habitat for Covered Species. Some of the more common species expected to benefit are briefly described below.

Valley and Foothill Woodland

Valley and foothill woodlands harbor a rich diversity of native plant and wildlife species. The mild Mediterranean climate and abundant food provided by acorns from oak trees allow many animal species to remain year-round. The relationship between some bird species and oaks is complimentary: species such as western scrub jays and yellow-billed magpies do not completely retrieve cached acorns and thus disperse oak seedlings across the landscape (CalPIF 2002). Oak woodlands also provide critical wintertime habitat to migratory species that spend their summers at higher elevations. For example, the Eastern Tehama Deer Herd is the largest migratory herd in California.

The herd's annual migration takes over 20,000 animals from the high elevation pine and fir forests around Lassen National Park to their winter habitat in the open oak woodland savannas of eastern Tehama County (TCRCD).

Common valley and foothill woodland wildlife species expected to benefit from the project include:

- birds such as red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), acorn woodpecker (*Melanerpes formicivorus*), northern oriole (*Icterus galbula*), and western blue bird (*Sialia mexicana*);
- reptiles such as gopher snake (*Pituophis catenifer)* and western fence lizard (*Sceloporus occidentalis*); and
- mammals such as gray fox (*Urocyon cinereoargenteus*), long-tailed weasel (*Mustela frenata*), and western gray squirrel (*Sciurus griseus*.

Oak woodlands also encompass the principal watersheds supporting essential riverine habitat for endangered fish. Many creeks in the project area provide the best remaining habitat for Federally threatened spring run Chinook salmon (*Oncorhynchus tshawytscha)*. Improved water quality will benefit these rare fish.

Chaparral

This community is highly adapted to periodic fire. Post-fire recovery of chaparral begins with a cover of subshrubs, annuals, and perennial herbs. However, shrubs that will be dominant in mature chaparral are present as seedlings and root-crown sprouts. Wildlife management considerations usually focus on selecting alternative fire and vegetation management treatments to keep the chaparral in mixed age classes and reduce the risk of catastrophic wildfire.

Common chaparral wildlife species expected to benefit from the project include:

- birds such as California quail (*Callipepla californica*), scrub jay (*Aphelocoma coerulescens*), and wrentit (*Chamaea fasciata*);
- reptiles such western rattlesnake (*Crotalus oreganus*); and
- mammals such as mule deer (*Odocoileus hemionus*) and brush rabbit (*Sylvilagus bachmani*).

Riparian Woodland

Riparian woodland is another very diverse natural community. The multilayered vegetation, water source, and ecotone between the riparian zone and adjacent uplands makes it important wildlife habitat. Valley and foothill riparian woodlands provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife.

Common riparian woodland wildlife species expected to benefit from the project include:

- birds such as red-shouldered hawk (*Buteo lineatus*), belted kingfisher (*Ceryle*

alcyon), and wood duck (*Aix sponsa*);
- reptiles such as western pond turtle (*Actinemys marmorata)* and common garter snake (*Thamnophis sirtalis*);
- amphibians such as Pacific tree frog (*Hyla regilla*) and California newt (*Taricha torosa);* and
- mammals such as river otter (*Lontra canadensis*), raccoon (*Procyon lotor*), and western red bat (*Lasiurus blossevillii*).

Riparian woodlands also significantly affect essential riverine habitat for endangered fish by controlling sediments, adding nutrients, and providing shade to moderate temperature. Many creeks in the project area provide the best remaining habitat for the Federally- and State-listed threatened spring run Chinook salmon, and Federally and State-listed endangered winter-run Chinook salmon. Fish and Game Code Section 2088 specifically prohibits fishes in the class Osteichthyes (bony fishes) from being authorized for take through a VLP.

Freshwater Marsh

Freshwater marshes (one type of wetland) are among the most productive wildlife habitats in California. Wetlands in the Sacramento Valley in private ownership are often managed for waterfowl hunting. The combination of vegetation and open water in wetlands provides food, rearing areas, and cover for wildlife. Because aquatic and terrestrial habitats overlap in wetlands, they serve wildlife from both realms, as well as plants and animals that have adapted specifically to life within the wetlands.

Common freshwater marsh wildlife species expected to benefit from the project include:
- birds such as great blue heron (*Ardea herodias*), northern harrier (*Circus cyaneus*), and a broad diversity of waterfowl and shorebirds;
- reptiles such as western pond turtle (*Actinemys marmorata)* and common garter snake (*Thamnophis sirtalis*);
- amphibians such as California toad (*Bufo boreas halophilus)* and Pacific tree frog (*Hyla regilla*)*;* and
- mammals such as muskrat (*Ondatra zibethicus*) and beaver (*Castor canadensis*).

Valley Grassland

Many wildlife species use valley grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and escape cover. Grassland management strategies include grazing to produce a mosaic of habitat features such as height, cover density, and diversity of plant species. Controlled burning has been useful to increase plant diversity and select for native grassland plant species.

Common valley grassland wildlife species expected to benefit from the project include:

- birds such as horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), and short-eared owl (*Asio flammeus*);
- reptiles such as western rattlesnake (*Crotalus oreganus*) and coast horned lizard (*Phrynosoma coronatum*); and
- mammals such as black-tailed jackrabbit (*Lepus californicus*), American badger (*Taxidea taxus*), and coyote (*Canis latrans*).

Vernal Pools

Vernal pools occur within the landscape of other natural communities such as valley grassland and valley and foothill woodland. Vernal pools have a unique seasonal dichotomy as a shallow wetland in the winter and spring, and completely drying out in the summer and fall. Many species that occur in vernal pools are highly specialized to adapt to this regime. However, more common and mobile species use vernal pools in the wet season.

Common vernal pool species expected to benefit from the project include:

- birds such as greater yellow-legs (*Tringa melanoleuca*), snowy egret (*Egretta thula*), and a broad diversity of waterfowl;
- reptiles such as common garter snake (*Thamnophis sirtalis*); and
- amphibians such as western spadefoot toad *(Spea hammondii)*.

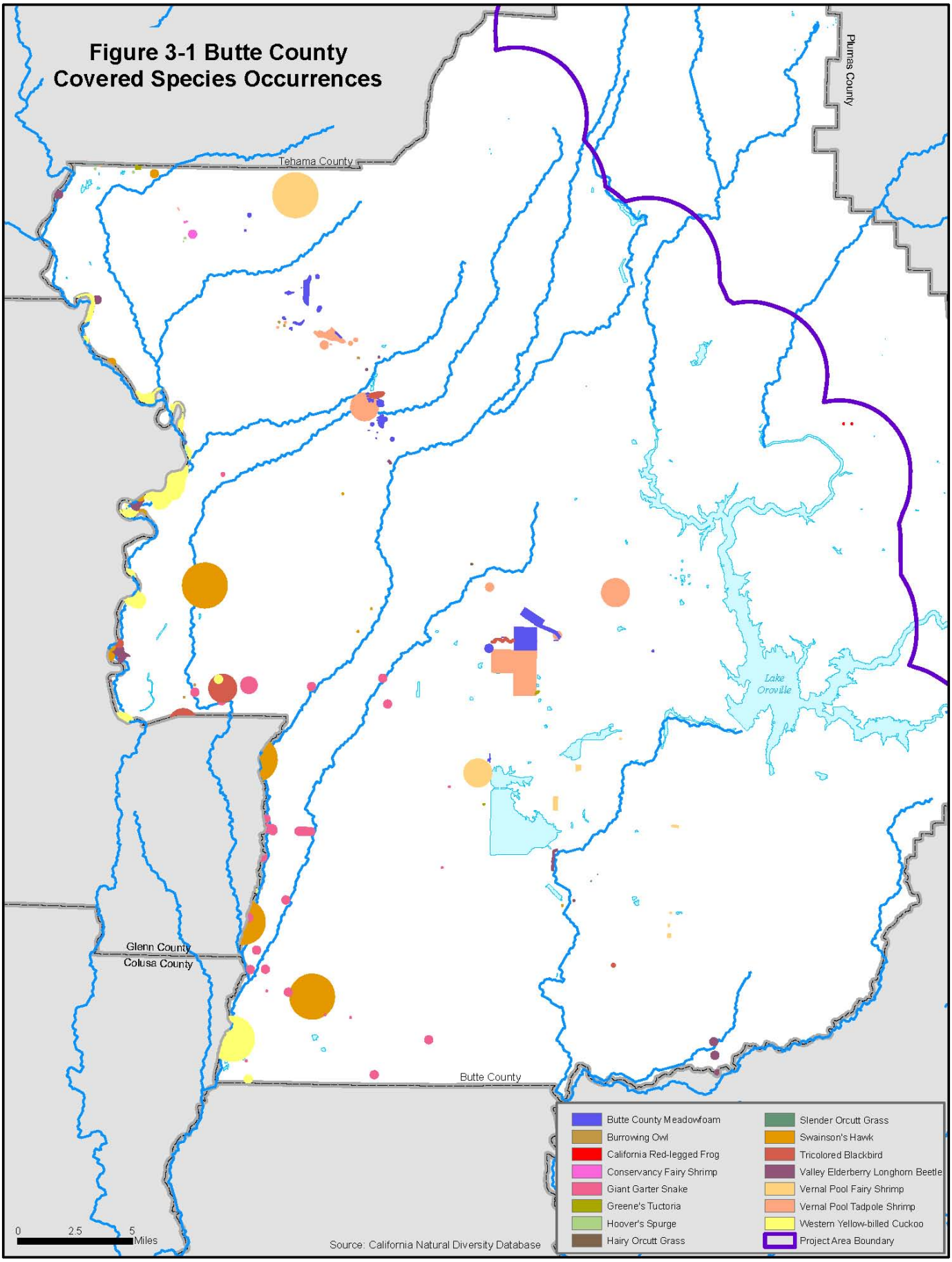


Figure 3-1 Butte County
Covered Species Occurrences
Plumas County
Tehama County
Lake Oroville
Glenn County
Colusa County
Butte County
0
2.5
5
Miles
Source: California Natural Diversity Database
Butte County Meadowfoam
Burrowing Owl
California Red-legged Frog
Conservancy Fairy Shrimp
Giant Garter Snake
Greene's Tuctoria
Hoover's Spurge
Hairy Orcutt Grass
Slender Orcutt Grass
Swainson's Hawk
Tricolored Blackbird
Valley Elderberry Longhorn Beetle
Vernal Pool Fairy Shrimp
Vernal Pool Tadpole Shrimp
Western Yellow-billed Cuckoo
Project Area Boundary

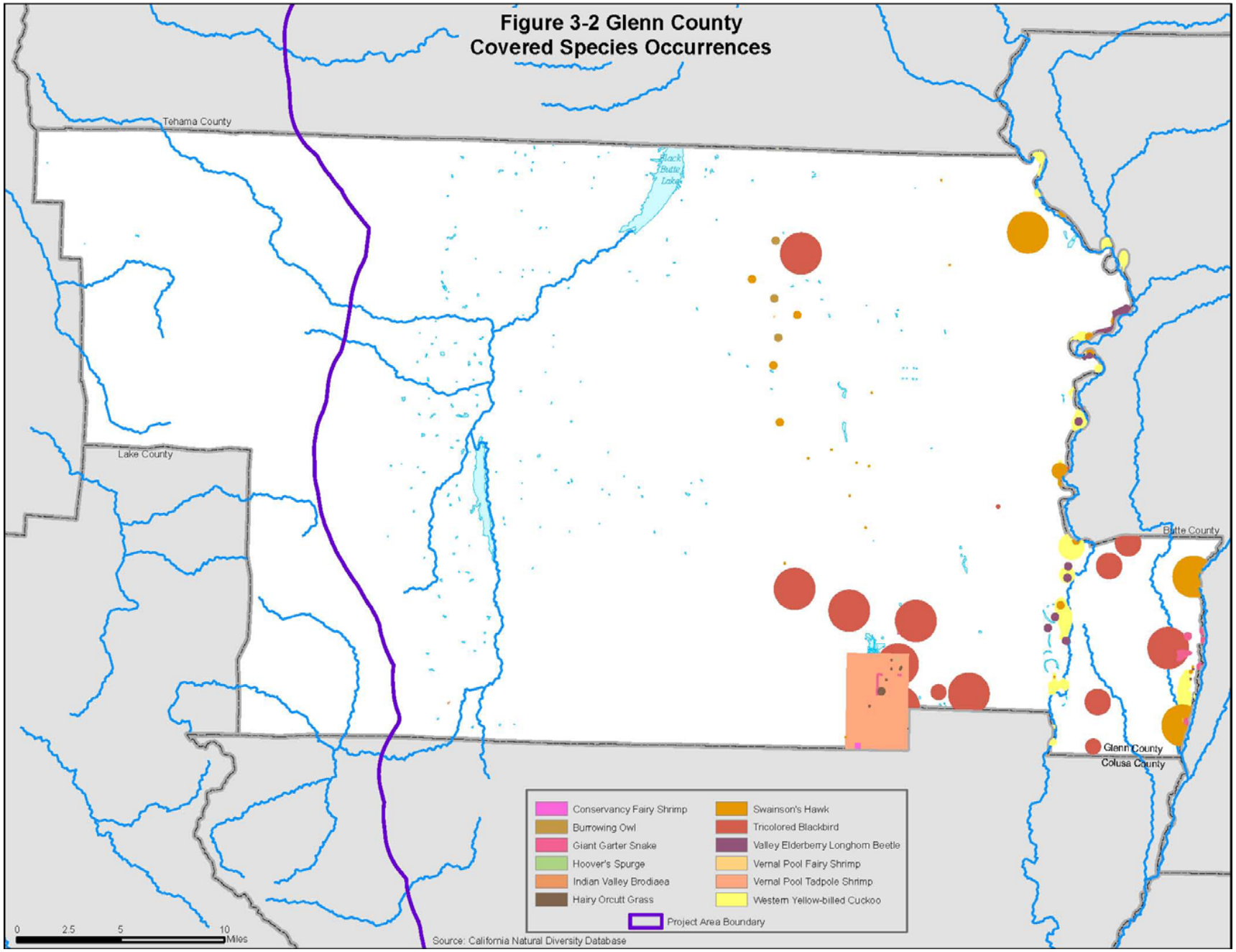


Figure 3-2 Glenn County
Covered Species Occurrences
Tehama County
Lake County
Butte County
Glenn County
Colusa County
Black Butte Lake
Conservancy Fairy Shrimp
Burrowing Owl
Giant Garter Snake
Hoover's Spurge
Indian Valley Brodiaea
Hairy Orcutt Grass
Swainson's Hawk
Tricolored Blackbird
Valley Elderberry Longhorn Beetle
Vernal Pool Fairy Shrimp
Vernal Pool Tadpole Shrimp
Western Yellow-billed Cuckoo
Project Area Boundary
0 2.5 5 10
Miles
Source: California Natural Diversity Database

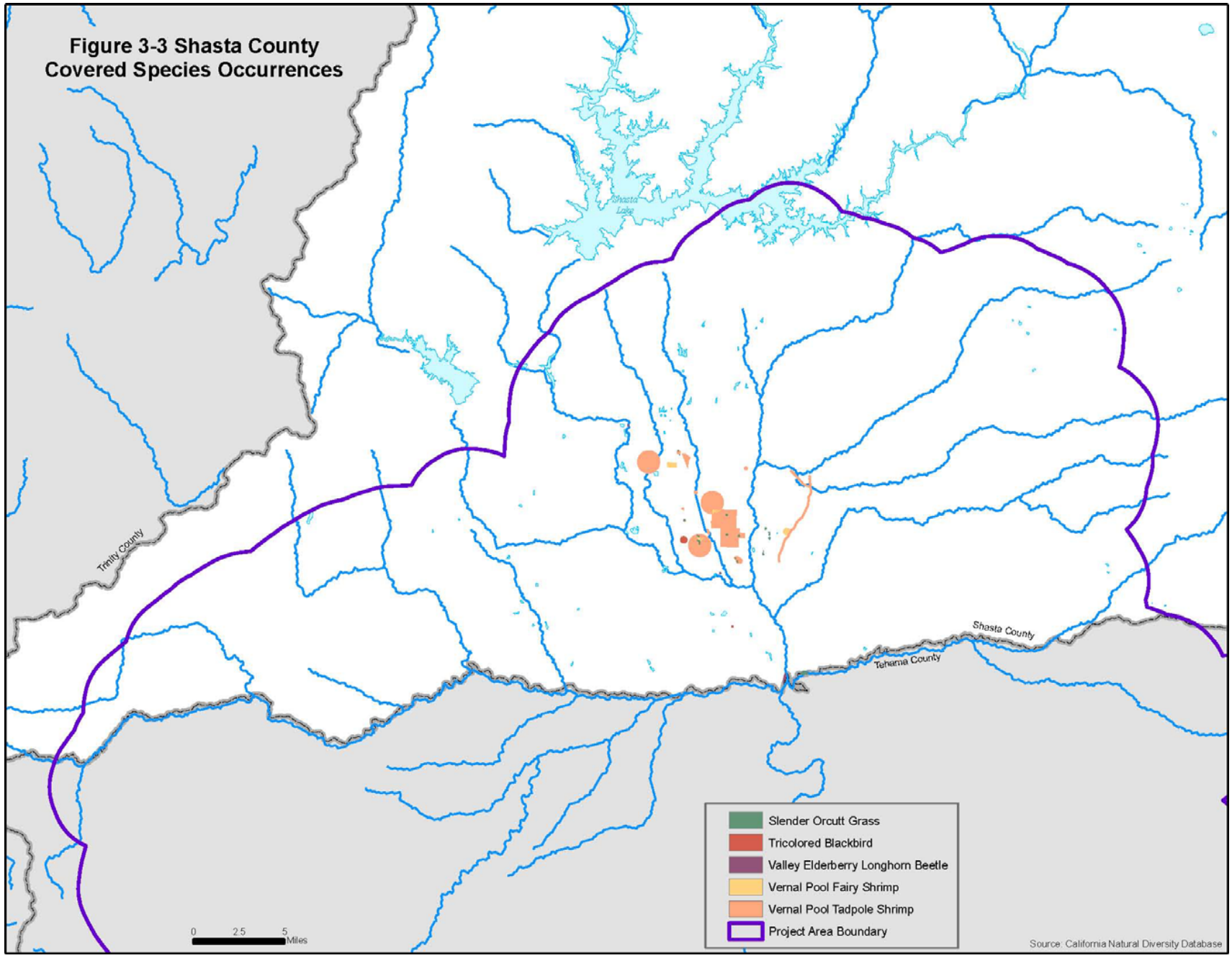


Figure 3-3 Shasta County
Covered Species Occurrences
Shasta Lake
Trinity County
Shasta County
Tehama County
0 2.5 5 Miles
Slender Orcutt Grass
Tricolored Blackbird
Valley Elderberry Longhorn Beetle
Vernal Pool Fairy Shrimp
Vernal Pool Tadpole Shrimp
Project Area Boundary
Source: California Natural Diversity Database

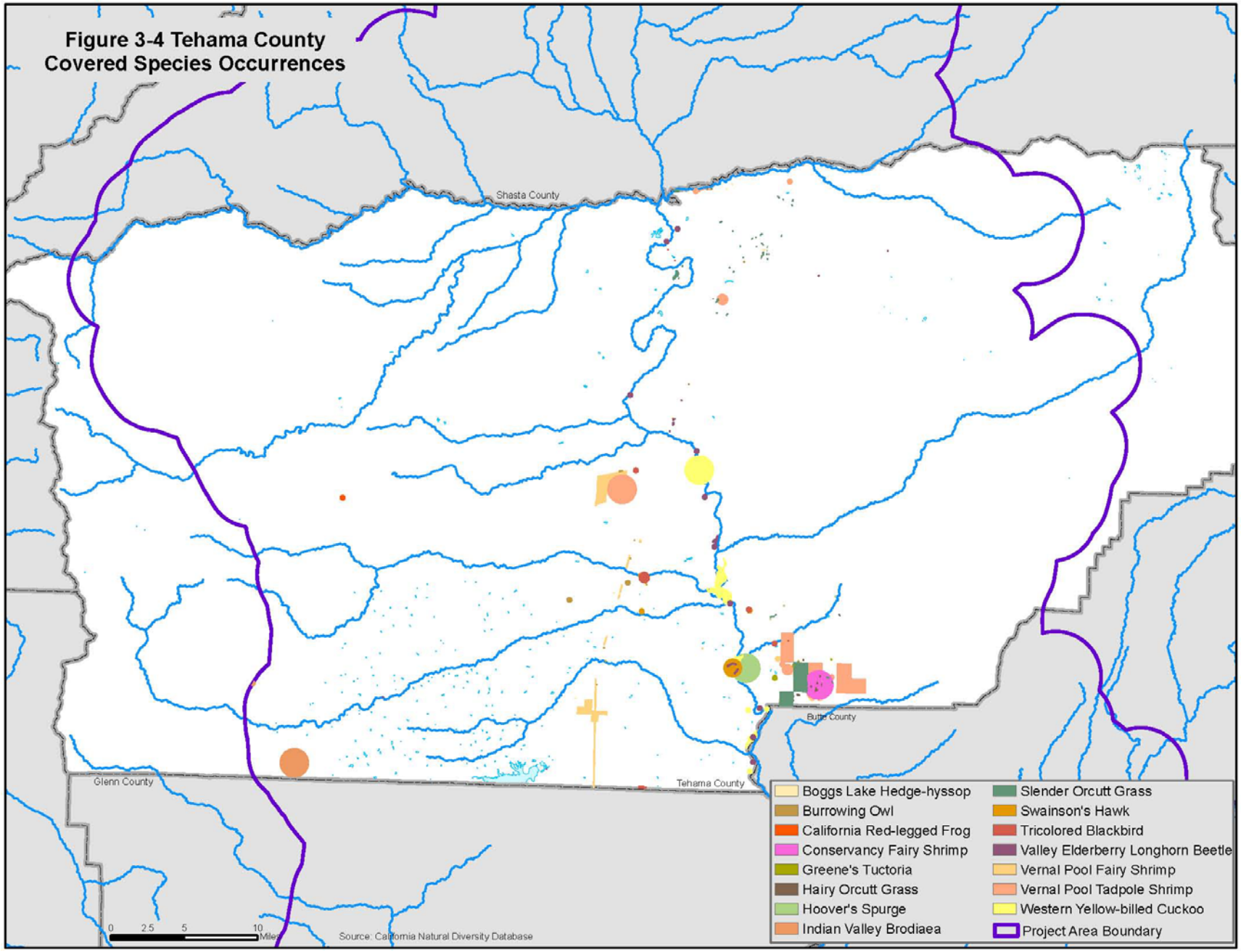


Figure 3-4 Tehama County
Covered Species Occurrences
Shasta County
Butte County
Glenn County
Tehama County
0 2.5 5 10 Miles
Source: California Natural Diversity Database
Boggs Lake Hedge-hyssop
Burrowing Owl
California Red-legged Frog
Conservancy Fairy Shrimp
Greene's Tuctoria
Hairy Orcutt Grass
Hoover's Spurge
Indian Valley Brodiaea
Slender Orcutt Grass
Swainson's Hawk
Tricolored Blackbird
Valley Elderberry Longhorn Beetle
Vernal Pool Fairy Shrimp
Vernal Pool Tadpole Shrimp
Western Yellow-billed Cuckoo
Project Area Boundary

4 ENVIRONMENTAL EFFECTS

The Take associated with routine and on-going agricultural activities will be authorized for enrolled properties when landowners agree to implement the terms of the program in their Cooperative Agreement. The terms include establishing baseline, implementation of beneficial activities, monitoring, reporting, and complying with avoidance and minimization measures.

DFG completed an initial study of the VLP in the form of an environmental checklist (Appendix A) to assess the potential impacts of the program. Due to the beneficial activities contained as part of the VLP, the incorporation of avoidance and minimization measures, and the habitat enhancement which mitigates for potential impacts in advance of those impacts, DFG has concluded, based on the environmental checklist, that none of the potential effects of the project are considered significant.

Please refer to the environmental checklist in Appendix A and Section 3.1 for a discussion of the environmental factors that would not be significantly affected by the project.

4.1 Agriculture Resources

The CRCC VLP is designed to provide an incentive for rangeland landowners to voluntarily enhance habitat values while maintaining economic vitality for ranching. Ranching lands are predominantly natural habitats where livestock grazing is managed. Beneficial and routine and ongoing ranching activities under the program will focus on managing the existing natural landscape and grazing to improve habitat for the Covered Species and Species of Conservation Concern. Some areas within the ranching landscape will be modified to restore and enhance wildlife habitat values; however, all enrolled lands will remain in agricultural use as ranchlands. Conversion to non-agricultural uses will not be covered nor authorized by the CRCC VLP. Wildlife habitat enhancement on existing ranchlands does not conflict with existing zoning or Williamson Act contracts.

4.1.1 Effects on Neighboring Landowners

The activities of one agricultural landowner under the CRCC VLP may have the potential to effect neighboring properties in a variety of ways. Landowner choices about management actions immediately on their boundary (*e.g.*, fence maintenance, fire breaks, tree planting or removal) may have effects because of their spatial proximity. Other potential effects could be indirect. For example, habitat enhancements may increase certain types of vegetation that could provide more fuel for wildfire. Enrolled landowners will continue to implement fire protection measures, and the CRCC VLP will authorize the incidental Take of listed species that may occur during that activity. Therefore, effects on neighboring lands will be less than significant.

Of specific concern related to the CRCC VLP are two indirect effects: the potential for threatened and endangered species to move from the enrolled property where habitat is being enhanced onto a neighbor's land; and the potential for wildlife from the enrolled property to damage nearby crops.

When a landowner voluntarily signs up for the CRCC VLP and restores or enhances wildlife habitat on her/his land, the improved habitat will likely result in increases in wildlife populations (which is the objective of the program). These increased wildlife populations may use adjacent lands as part of their home range for foraging, breeding, and resting. Such uses may impact adjoining agricultural practices.

4.1.1.1 Listed Species Inhibiting Activities

Certain routine and ongoing agricultural practices could result in Take of Covered Species on neighboring lands even though the neighboring landowner has not enhanced habitat to attract the species. Landowners who are adjacent to or in the immediate vicinity of an enrolled property may be fearful that the actions of their neighbors intended to attract and enhance listed species may result in species immigration onto their property thereby inhibiting their activities. This fear may lead to significant peer pressure on landowners interested in participating in the VLP and discourage them from participating (N. Cremers, pers. comm.).

The joint CRCC VLP/SHA contains a provision for neighboring landowners to obtain incidental Take authority for their routine and ongoing agricultural activities. Landowners who are adjacent to or within the immediate vicinity of a property enrolled in the CRCC VLP/SHA may request coverage for their routine and ongoing agricultural activities. Such landowners are not required to undertake any management activities for Covered Species; however, they must agree to allow an assessment of the habitat baseline on their property and implement Take avoidance and minimization measures for State-listed species. The neighboring landowner must enter into a "Neighboring Landowner Agreement" with the Program Administrator. So long as baseline for the Covered Species is maintained on the neighboring property, the landowner may incidentally Take those species in the course of routine and ongoing agricultural activities on the property. The neighboring landowner must agree to give the Program Administrator at least 90 days notice (except when precluded by emergency situations) of any planned activity that the owner reasonably anticipates will result in incidental Take of Covered Species on the property. Advanced notice is not required for Routine, Ongoing and emergency activities. This time period provides an opportunity to discuss Take avoidance measures and provide the FWS, DFG, or another mutually agreed-upon entity access and opportunity to relocate, if appropriate, any affected individuals of the Covered Species.

The effects of the Take of State-listed and sensitive species from routine and ongoing activities are discussed in Section 4.2.1. Avoidance and minimization measures for Cooperators and neighboring landowners are listed in Attachment 5 of the SHA/VLP (Appendix C).

4.1.1.2 Wildlife Interfering with Farming

Farmers typically consider themselves to be stewards of the land, and most enjoy seeing wildlife and find wildlife use of their farms to be compatible with farming. Many farmers enhance portions of their farms specifically to attract wildlife. On other farms, typical practices inadvertently attract wildlife such as harvested grain fields and flooded tail water ponds.

When wildlife habitat adjoins farmed land, there is potential for insects and other animals to damage crops (foraging on adjacent fields, for instance) or interfere with farming practices. For example, central valley waterfowl may forage on grain crops eating the seeds and knocking down the stalks making harvest less productive. This impact led to the formation of National Wildlife Refuges and State Wildlife Areas. These protected lands were designed to provide high quality habitat to attract waterfowl away from private farmlands.

Two of the Covered Species (giant garter snake, Swainson's hawk) and three Species of Conservation Concern (Sacramento Valley red fox, burrowing owl, and tricolored blackbird) regularly use farmed landscapes for habitat. Giant garter snakes use irrigation canals and rice fields. Swainson's hawks nest in large trees and forage in alfalfa and other row crops. Burrowing owls and Sacramento Valley red fox use berms along field and canal borders for nesting and denning, and forage in ruderal and crop areas. Tricolored blackbirds nest in dense vegetation, which can include grain crops and forage in ruderal and crop areas. All of these species are considered to be declining in numbers across their range, and are currently found on farmed lands in the project area in very low numbers. None of these species, but tricolored blackbirds, consumes crops grown on farms. Tricolor blackbirds are known to consume some grains, and colonies may affect grain crops by causing stalks to fall over.

Although the program is not focused on changing cultivated farm lands to natural wildlife habitat, some cultivated lands associated with ranches could be restored to natural habitat if the landowner chooses to do so. Some wildlife species that typically use cultivated farm lands in significant numbers, such as waterfowl, shorebirds, pheasants, etc., could be affected. Loss of cultivated lands to natural habitat would displace the wildlife species living there to other cultivated lands in the Sacramento Valley (USDA reports 739,552 acres of total cropland in the four county program area). Restoration of habitat on cultivated lands is expected to be very minimal, since most ranchers are focused on ranching not farming. Some species that use cultivated lands may also find suitable habitat on the restored habitat lands (ducks and shorebirds also use wetlands and ponds, and pheasants also use grasslands and vernal pool uplands).

Lands used for grazing do not typically overlap with those used for intensive crop production due to environmental factors. Rangelands are typically not converted to farmland, because the soils are less fertile or inhospitable, the landscape is often sloped, and water necessary for farming may not be available. Rangelands are typically on the foothill lands that surround the Sacramento Valley floor where farming is the

dominant land use. Other than the edge between rangelands and crop lands that abut each other along the edge of the valley, the two different agricultural lands are disjunct from each other. The distances between the vast majority of these lands are expected to minimize any influences of wildlife interference with farming. Since the rangelands to be enhanced already provide value to wildlife as habitat, the enhancements that will occur as a result of the management practices are expected to benefit the population as a whole, but are not expected to significantly change wildlife populations in any one location so as to significantly increase effects on nearby cultivated farm lands.

The VLP regulations (§786(c)) specifically direct development of VLPs to "provide sufficient flexibility to maximize participation and to gain the maximum wildlife benefits without compromising the economics of agricultural operations." The neighboring landowner program discussed in Section 4.1.1.1 provides an avenue for neighboring landowners to work with the Program Administrator to address any wildlife interference issues due to properties enrolled in the CRCC VLP. The Program Administrator and the various other partners (FWS, DFG, NRCS, CFBF, and RCD) will work with neighboring landowners to find solutions to balance wildlife enhancement with farming feasibility. To insure that landowners will receive appropriate attention, the Program Administrator has established a position to administer the CRCC VLP, which is supported by funding from the FWS.

Because of the forgoing provisions related to neighboring landowners in the CRCC VLP, the potential effects on agricultural resources are considered less than significant.

4.1.2 Change of Use from Cultivation to Wildlife Habitat

A major component of the CRCC VLP is habitat enhancement to benefit sensitive species on rangelands which already predominantly occur on native habitats. Some landowners may enroll properties with a combination of rangeland and cropland. Landowners may elect to restore some cultivated, fallow, or ruderal acreage to native habitat, effectively removing it from cultivated production. Conversion of cultivated land to wildlife habitat would not be removing land from agricultural production as the restored land could be managed as a part of an overall livestock grazing management program. Restoration of wildlife habitat would be neither irreversible nor cause serious degradation or elimination of the physical or natural conditions that provide the site's values for farming. All lands restored under the CRCC VLP are eligible to be returned to the status of the land at the point it was enrolled in the program (returning to baseline). The decisions to either restore cultivated land to habitat or return a property to its baseline condition are at the sole discretion of the landowner based upon personal or economic reasons.

The CRCC VLP does not authorize the establishment of any houses or other major buildings, or land uses that would physically or economically preclude returning the land to cultivation in the future if there were to be such a decision by the landowner. Returning properties to baseline would not be prohibitively costly. Returning the land to

cultivation would require removing the native vegetation and implementing some soil preparation, which is similar to the requirements of the original clearing of habitat necessary to create farmed land decades ago.

Because of the landowner's ability to return the enrolled property to baseline conditions inherent in the CRCC VLP, the potential effects of changing cultivated land to wildlife habitat are considered less than significant.

4.2 Biological Resources

For the purposes of this EA, biological resources include vegetation, wildlife, fish, and waters of the United States, including wetlands. This section includes a discussion of the effects of the CRCC VLP on State-listed and sensitive species, streams and fisheries, and other biological resources.

Some enhancement and restoration activities may result in temporary disturbance to sensitive plant communities such as riparian, wetlands, and vernal pools that support Covered Species and other wildlife. However, the enhancement and restoration are intended to result in increased habitat and improved habitat quality for Covered Species and Species of Conservation Concern, including enhanced habitat connectivity across the ranching landscape. Based on past experience with Safe Harbor agreements, it is anticipated that landowners will maintain habitat enhancements well beyond the initial 10 year enrollment term so long as the benefits of the Take authorizations for routine and ongoing ranching are also maintained (FWS 1999a). An initial independent evaluation of the Safe Harbor Program showed that no landowner had withdrawn from the safe harbor program and exercised the right to return to baseline (Wilcove and Lee 2004). Therefore, the benefits can be expected to be maintained for an extended period of time and outweigh the temporary negative effects of the enhancement actions.

4.2.1 Effects on State-listed and Sensitive Species

Activities associated with habitat enhancement and restoration, routine and ongoing ranching, and returning a property to baseline all have the potential to impact State-listed and sensitive species. The CRCC VLP contains species-specific beneficial activities for 15 Covered Species and 3 Species of Conservation Concern (Appendix C, Section 6) that landowners may elect to implement on their ranch or suggest other beneficial measures with the concurrence of DFG and FWS. Such measures must meet the intent to enhance the amount and/or quality of habitat for the Covered Species and Species of Conservation Concern. Maps of Covered Species and Species of Conservation Concern occurrences by county are included in Figures 3-1 to 3-4. Maps of other sensitive species occurrences by county are included in Figures 4-1 to 4-4.

<u>Habitat Enhancement and Restoration</u>

Take of Covered Species incidental to routine and ongoing agricultural activities

may occur as a direct result of habitat manipulation for enhancement or restoration. Some of these activities may also be employed to return a property to baseline conditions.

- Removal of invasive plants – This activity would open up areas for native plant restoration. Removal actions may include mechanical ground disturbance with machinery, hand tools, livestock grazing, and/or application of herbicides. Covered Species may be displaced from the area due to the vegetation removal or disruption from noise and human activities. Livestock may trample listed and sensitive plants. Prescribed fires may help eliminate invasive plants and provide more suitable conditions for native vegetation, but may impact a Covered Species in the line of fire through intense heat or smoke.
- Grading for pond or wetland development or enhancement – Habitat conditions for some Covered Species would be improved with new ponds or actions to recontour ponds. Grading would be carried out by heavy machinery. Soil and existing vegetation would be disrupted. Covered Species may be displaced from the area due to the vegetation removal or disruption from noise and human activities. Water quality conditions in existing ponds during and immediately following mechanical disturbance may be temporarily impacted until sediments settle.
- Vegetation clearing to maintain open water in stock ponds or wetlands – Ponds or wetlands used by Covered Species can become filled in by overgrown emergent vegetation. Vegetation clearing may be necessary to enhance open water habitat. Vegetation clearing may require draining the pond and the use of machinery which may displace or crush Covered Species. Water quality conditions in existing ponds during and immediately following mechanical disturbance may be temporarily impacted until sediments settle.
- Restore hydrologic regimes to vernal pools – This activity may result in ground disturbing activities to remove ditches, canals, and small dams and to restore former topography to vernal pool areas. Grading may be necessary and would likely have the same effects as described above. Take of vernal pool species may occur through crushing of “cysts”, plants, or seeds.
- Tillage prior to and planting of native vegetation – Formerly cultivated or ruderal vegetation areas may be seeded with native vegetation. Site preparation would include shallow tillage to prepare the soil and mechanical planting of seeds. Planting of native vegetation for other habitat types (riparian, oak woodland, ponds, elderberry savannahs) may involve site preparation as well as the use of machinery or hand power tools such as augers to facilitate planting seedlings and saplings. Vehicles transporting equipment and supplies may drive across vegetated areas. Tillage may also be used to remove old senescent growth and rejuvenate vegetation. Cultivation would be carried out by heavy machinery. Soil and existing vegetation would be disrupted. Covered Species may be displaced from the area due to the vegetation removal or disruption from noise and human activities.
- Stabilize eroding banks of water bodies – These actions will reduce sediments in waterways thereby improving water quality for Covered Species and other

wildlife. These minor earthmoving activities, site preparation, and planting native vegetation would have the same general effects as described above for grading and tillage. These actions may require landowners to notify DFG pursuant to Fish and Game Code Section 1600 *et. seq.* of their intent to alter a streambank. Projects that stay below the "substantial alteration" threshold of earthmoving activities do not need an agreement. Projects that will result in "substantial alteration" would require a Streambed Alteration Agreement. "Substantial alteration" is defined during consultation with DFG.

- Install fencing – Managing livestock grazing will be an important tool for enhancing the suitability of the habitat for Covered Species. Fences may be installed to exclude livestock from sensitive areas (*e.g.,* riparian or wetlands), or to establish pastures that provide more management control to the ranch manager. Fence installation will result in very minor effects on Covered Species, but which would be similar to planting seedlings or saplings (augering, driving along fence lines to deliver materials, etc.).
- Burn old, senescent vegetation – Prescribed fires can rejuvenate native vegetation and create more diverse habitat conditions. Cultivation or grading for fire breaks will typically be a routine and ongoing activity, but additional fire breaks may be necessary to manage the fire. Some Covered Species may be overcome by intense heat or smoke.

For each of the State-listed and Species of Conservation Concern addressed by the VLP, a list of Take avoidance and minimization measures has been incorporated to reduce incidental Take that may result from enhancement and restoration actions (see Section 2.1.4, and Appendix C, Attachment 5). With the implementation of Take avoidance and minimization measures, the incidental Take associated with enhancement and restoration activities is expected to be negligible. This is because the habitat enhancement would not be necessary if the site were already providing good quality habitat occupied by these species and did not require any restoration or enhancement. The baseline assessment conducted for each enrolling property will be used to identify suitable habitat for Covered Species and Species of Conservation Concern and where Take avoidance and minimization measures will apply.

Routine and Ongoing Ranching Activities

Take of State-listed species will also be authorized in association with regular ranching activities. Some of these activities may also be employed to return a property to baseline conditions. Potential impacts include:

- Collisions with farm vehicles – In the course of normal travels around the ranch, Covered Species may be accidentally struck by vehicles.
- Trampling by livestock – Livestock graze and rest in the same habitats where the Covered Species occur. Livestock may step or lay on individual plants and animals.
- Control ground-burrowing rodents – Rodent burrows can be a hazard for livestock potentially causing serious injuries. Rodent burrows may be collapsed

by grading or discing. Although poisonous grain is designed to be very specific to the target species, inadvertent poisoning of Covered Species may occur. The VLP prohibits collapsing, grading or discing burrows and the use of toxic or suffocating gases where California red-legged frogs, burrowing owls, Sacramento Valley red fox, or giant garter snakes exist.

- Removal of nest trees for safety - Trees both alive and dead provide nesting habitat for Covered Species. Some trees may become damaged by wind, water erosion, lightning strikes, fires, disease, etc. If these damaged or dead trees could fall where ranch workers might be injured, they may need to be removed for safety. Covered Species may be evicted from the tree or crushed when the tree falls.
- Removal of nest trees for water movement management – Trees in streams or canals may impede water movement management and cause subsequent erosion of banks. Covered Species may be evicted from the tree or crushed when the tree falls.
- Vegetation clearing to maintain open water in stock ponds – Ponds used by livestock for drinking water can become filled in by emergent vegetation. To maintain sufficient access for livestock to open water, vegetation clearing may be necessary. Vegetation clearing may require draining the pond and the use of machinery which may displace or crush Covered Species.
- Maintenance and construction of livestock management facilities – This would include fencing and corrals. See the discussion of the effects of fence installation above under Habitat Enhancement and Restoration. This would also include sheds and outbuildings. These types of structures are likely to be located near ranch management compounds where little to no habitat for Covered Species exists. Impacts to Covered Species may result from grading the site with heavy machinery. Soil and existing vegetation would be disrupted. Covered Species may be displaced from the area due to the vegetation removal or disruption from noise and human activities. Construction of new barns, shops, and houses is not included in routine and ongoing ranching activities and therefore not covered by the VLP.
- Planting, harvest, or rotation of non-irrigated forage crops – Ranching operations often include growing winter grain or forage crops to produce food for livestock in the summer and autumn months. These crops use winter rains as their source of water. The effects of this activity on Covered Species would generally be the same as shallow tillage prior to planting native vegetation (see above under Habitat Enhancement and Restoration). There would be an additional time of disturbance and effect when the crop is harvested and gathered. Conversion of natural habitat to cultivation is not covered by the VLP. Additionally, crop production may be a standard practice on portions of the ranches. The crops grown may provide habitat value to Covered Species. Changing from one crop to another may change the value to Covered Species, and may affect different Covered Species in different ways. Impacts related to the cultivation would be similar to those described above.
- Road repair, maintenance, or de-commissioning – These road activities would involve grading, but are unlikely to affect Covered Species. The primary potential

area of impact would be the immediate shoulder of the road. De-commissioning could result in restoration of the roadway to habitat for the Covered Species.

- New roads – Typically, new road construction would not be covered by the VLP. However, there may be instances where it is desirable to relocate a road out of a sensitive habitat area. Approval by FWS and/or DFG is required for new road construction. Grading would be carried out by heavy machinery. Soil and existing vegetation would be disrupted. Covered Species may be displaced from the area due to the vegetation removal or disruption from noise and human activities.
- Fire breaks – Most ranches maintain fire breaks as a fire prevention tool, and they are disced for maintenance approximately once per year. Effects on Covered Species would be similar to those discussed above for tillage under Habitat Enhancement and Restoration.
- Stabilize eroding banks of water bodies – These actions will reduce sediments in waterways thereby improving water quality for Covered Species and other wildlife. The VLP only covers minor earthmoving activities to stabilize eroding banks. Major bank stabilization projects would require separate consultations with FWS and DFG. All alterations to the banks of water bodies requires notification to DFG pursuant to FGC Section 1600 *et seq.* These minor earthmoving activities, site preparation, and planting native vegetation would have the same general effects as described for grading and tillage above.
- Maintenance of irrigation ditches and/or water diversions – Minor ground disturbance would be needed to perform this maintenance. Soil and existing vegetation would be disrupted. Covered Species may be displaced from the area due to the vegetation removal or disruption from noise and human activities.
- Emergency activities (e.g., fighting floods or fires) – Actions necessary to protect lives and property during emergencies such as floods or fires could result in incidental Take of Covered Species. Such actions may include discing, grading, earthmoving, removal of vegetation, etc. The effects of these actions on Covered Species have been described above under grading, tillage, and stabilizing banks.

The Cooperative Agreement will include Take avoidance and minimization measures for State-listed species and Species of Conservation Concern that must be implemented as part of routine and ongoing ranching activities (see Section 2.1.4, and Appendix C, Attachment 5). These measures are easily accomplished in the day-to-day operation of a livestock ranch. With the implementation of Take avoidance and minimization measures, the potential incidental Take of Covered Species during routine and ongoing ranching activities is expected to be minor.

Return to Baseline

Inherent in the CRCC VLP is the ability for a landowner to withdraw from the program at any time with no penalties, according to prescribed terms and conditions. Activities allowed include removing the habitat enhancements and returning the property to the condition it was when the landowner enrolled (baseline). The actions to carry out the habitat removal would be the same as described above under Routine and Ongoing Ranching Activities and Habitat Enhancement and Restoration. Take may

occur in association with returning a property to baseline. Effects on State-listed species and Species of Conservation Concern and their habitats would potentially be:

- Vernal pool plants – Returning to baseline could include reinitiating cultivation, grading created or restored pools to fill them in, reinstalling ditches or canals that alter hydrology, removing alternate livestock water sources, and returning to original grazing practices. Effects on the plants could include destruction during cultivation, destruction or burying by grading activities, loss of hydrology necessary for growth and reproduction, trampling by livestock, compaction of soils reducing habitat suitability, and decreased water quality.
- Indian Valley brodiaea – Returning to baseline for this species could include resuming mowing, discing, and inappropriate grazing in serpentine soil areas. Such activities could subject Indian Valley brodiaea to trampling and over-browsing by livestock and mechanical destruction of the plants.
- Giant garter snake – Returning to baseline could include removal of created wetlands and waterway connectivity, grazing that would eliminate waterside and emergent vegetation, and resumption of ground disturbing activities during the snake's inactive period. Snakes could be subject to injury during grading to fill wetlands and waterways, crushing in their burrows, isolation away from other habitats and mates due to loss of connectivity, and subject to increased predation due to loss of cover around waterways.
- Swainson's hawk – Returning to baseline could include removal of trees and snags used for nesting and roosting, removal of suitable forage crops, return to grazing practices that result in vegetative cover unfavorable to foraging visibility. Effects on Swainson's hawk could include loss of nests after the nesting season and decreased foraging opportunities causing the hawks to fly farther to obtain prey.
- Yellow-billed cuckoo – Returning to baseline could include removal of created or enhanced riparian habitat, and return to grazing practices that allow invasive plant species. Effects on cuckoos could be loss of nests after the nesting season and loss of foraging, breeding, and resting habitat.
- Burrowing owl – Returning to baseline for this species could include resuming mowing and discing, management that allows vegetation to grow tall, intense ground squirrel control, and collapsing of unoccupied burrows. Effects on burrowing owls could be loss of suitable foraging habitat and loss of burrows
- Tricolored blackbird – Returning to baseline for this species could include removal of suitable nesting substrates, loss of food sources due to lack of irrigation near nesting colonies, management that allows vegetation on foraging sites to grow tall, harvesting of grain and silage crops where colonies exist, and return to grazing practices where livestock forage on and trample habitat. Effects on tricolored blackbirds could include loss of nests and young, and loss of foraging, breeding, and resting habitat.
- Sacramento Valley red fox – Actions to return to baseline for this species could include resuming mowing and discing, grazing that allows grasslands to grow tall, removal of riparian vegetation or upland shrubs, intense ground squirrel control, and collapsing of dens. Effects on Sacramento Valley red fox could be loss of

suitable foraging habitat and loss of dens.

Before returning the enrolled property to baseline, a landowner must implement the appropriate avoidance and minimization measures for State-listed species and Species of Conservation Concern. A list of avoidance and minimization measures that will be implemented during return to baseline are included in Attachment 5 of the VLP (Appendix C). The landowner must give the Program Administrator at least 90 days notice of any planned activities that the landowner reasonably anticipates will result in incidental Take of Covered Species on the enrolled property (including returning to baseline). Advanced notice for Routine, Ongoing, and emergency activities is not required. The Program Administrator will then notify DFG and/or FWS. This notice gives the agencies (or another appropriate entity) an opportunity to remove (if appropriate) individual Covered Species from the property prior to planned activities to avoid Take.

Establishing baseline in advance of enrolling a property insures that the “amount” of species that exist on site (the number of species, or the acreage and general quality of suitable Covered Species habitat) will be protected and remain even if the landowner withdraws from the program in the future. A landowner must initiate conservation measures to receive Take authority for State and federally-listed Covered Species. Such activities must be determined to provide a ``net conservation benefit.'' Net conservation benefit means the cumulative benefits of the management practices identified in the VLP and individual Cooperative Agreement that provide for an increase in a species' population and/or the enhancement, restoration, or maintenance of Covered Species' suitable habitat within the enrolled property, taking into account the length of the agreement and any off-setting adverse effects attributable to the incidental taking allowed by the permits (FWS 1999a). Net conservation benefits must be sufficient to contribute, either directly or indirectly, to the recovery of the Covered Species.

DFG and FWS anticipate that implementation of the beneficial activities will produce a net conservation benefit for the Covered Species by increasing habitat available to Covered Species for the terms of the Cooperative Agreements. These net conservation benefits may result from enhancing and restoring habitats; reducing fragmentation and increasing the connectivity of habitats; maintaining or increasing species population numbers or distribution; reducing the effects of catastrophic events; buffering protected areas; and creating areas for testing and implementing new management techniques and conservation strategies.

Net conservation benefits may contribute, directly or indirectly, to the recovery of the Covered Species and may be of varying duration and not permanent in nature. Although the VLP may not permanently conserve or recover species populations or their habitats, it nevertheless offers important short-term, mid-term, and, in some cases, long-term net conservation benefits. An assessment of the SHA program in 2003 (Wilcove and Lee 2004) showed that no landowners had withdrawn from the program and returned their properties to baseline conditions. Thus, benefits of the CRCC VLP for

the Covered Species are hoped to persist for a significant period of time.

As a fail safe measure, the VLP includes the option for DFG and FWS to suspend or revoke the permits for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. Such cause might be failure on the part of the Program Administrator to perform the duties detailed in the VLP (including failure to assure that landowners perform the duties in their Cooperative Agreements), or declines in a species' population such that continuation of the program would cause jeopardy to the species' continued existence.

By restoring or enhancing habitat for Covered Species, the landowners will be creating opportunities for new individuals of the Covered Species to exist on the property. The habitat restoration, enhancement and management for Covered Species will occur in advance of the primary potential impacts associated with returning a property to baseline, and the benefits may exist for many years. Together with maintaining the baseline habitat quantity and general quality, these benefits for the species provided in advance of Take, therefore, mitigate the effects of any incidental Take.

4.2.1.1 Excessive Livestock Grazing

The effects of grazing on wildlife vary from beneficial to detrimental, depending upon how grazing is managed, including the seasonality and duration of grazing and the type and number of livestock. These effects also depend on the relative sensitivities of individual wildlife species, since not all species respond the same way to grazing. Well-managed livestock grazing can benefit sensitive plant and animal species, particularly by controlling annual grasses and invasive plants where these have become established. These working lands are an essential part of the solution to conserving the State's wildlife.

While recognizing the values of appropriate grazing practices, excessive grazing practices also stress sensitive species. Excessive grazing refers to livestock grazing at a frequency or intensity that causes degradation of native plant communities, reduces habitat values for native wildlife species, degrades aquatic or other ecosystems, or impairs ecosystem functions (DFG 2007). (The term "overgrazing" has a different meaning; it is usually used in referring to the productivity of the forage crop and range condition).

Much of the research related to the effects of grazing on wildlife has been conducted on public lands (U.S. Forest Service and Bureau of Land Management). These lands are typically not situated in the project area, since the more productive grazing lands of the foothills are in private ownership. Much of the following information is extrapolated from such research, which is focused on vegetation communities at higher elevations. However, the underlying premise of excessive grazing applies to lower elevation foothill vegetation communities as well.

Livestock grazing in riparian areas can be a cause for concern because cattle will congregate in these habitats, using them as water sources. Cattle are attracted to the lush forage, water, and shade of riparian habitat. In late summer and fall, especially when upland habitats have dried out, cattle can decimate riparian plant communities by trampling and stripping forage and cover needed by wildlife. Livestock trampling of stream channels results in collapse of stream banks and erosion of soils. In excessively grazed areas, cattle trails and reduced plant cover also contribute to erosion. Increased sediment in waterways can shade out aquatic plants, fill important pool habitats, and scour away or smother stream-bottom sediments that are important spawning sites and invertebrate habitats. Livestock consume and trample riparian plants, which decreases shade and can increase water temperatures, reducing habitat for species that depend on cool water.

Excessive grazing also contributes to changes in plant communities important for wildlife diversity. Annual Mediterranean grasses have replaced most native perennial grasses, and livestock can aid the spread of invasive weeds. In the foothills, shrubs were often cleared with fire or herbicides to expand rangelands or to respond to brush encroachment on overgrazed lands (Burcham 1982, Menke et al. 1996). Excessive grazing is a factor in reducing the regeneration of blue oak and many other plant species throughout the predominantly privately owned foothill region (McCreary 2001). Livestock compact soils and remove leaf litter, making conditions less than optimal for germination of acorns and new growth. Livestock also consume acorns and young oak seedlings.

Today, livestock numbers have been lowered to levels that are more sustainable for forage for livestock production (Kondolf et al. 1996, Menke et al. 1996). However, poorly managed grazing continues to have negative consequences for forage, cover, and nest sites for dozens of wildlife species. Plant communities and ecosystems that are particularly important for sustaining wildlife diversity, including riparian, grassland, and oak woodland habitats, continue to be subject to livestock grazing.

A major focus of the CRCC VLP is to manage non-federal grazing lands in ways to improve habitat conditions for Covered Species while keeping a viable ranching operation. Through the Cooperative Agreement process, the Program Administrator will work with the landowner to assess current grazing regimes and make adjustments to benefit wildlife while maintaining an economically viable ranching business. Landowners are also expected to consult with NRCS, WCB, Service, and others related to landowner cost share incentive programs designed to enhance wildlife habitat. Through the required annual report, landowners will report on the success of management actions (including grazing program adjustments) to achieve wildlife benefits. The Program Administrator will also conduct monitoring of enrolled properties to assess management practices and Covered Species' use of the enrolled properties. The monitoring will assess the condition of the habitats being managed under each Cooperative Agreement, and determine if beneficial activities could be modified to improve success. Landowners may agree to allow research to be conducted on their property to obtain additional information on grazing management strategies that will be

compatible with Covered Species management. Since the CRCC VLP includes mechanisms to adjust landowners' grazing management practices to benefit Covered Species, the effects of excessive grazing are expected to be reduced and are therefore not considered significant.

4.2.1.2 Temporary Habitat as a Demographic Sink

The habitat enhancements that will result from the CRCC VLP are considered temporary, because landowners may withdraw from the program and return their property to baseline. To mitigate this effect, landowners will generally sign up for 10 year terms, and some landowners may choose to maintain the enhancements indefinitely. Thus, although the habitat enhancements may be removed, the benefits are expected to last for a significant period of time.

Temporary habitat has an important role in single and multi-species conservation, adding at any particular time, to both the total quantity of habitat available as well as to its connectivity. It can be used for feeding, sheltering and reproduction. Temporary habitat can provide essential life processes: (i) inter-specific and intra-specific competition, (ii) predation avoidance, (iii) territory maintenance and size, (iv) seasonal migrations, (v) daily movements, (vi) energetics, (vii) gene diversity, and (viii) population and/or genetic adaptability. These are general ecological principles that affect all species. Each of these is an essential component of individual species survival that can be attributed to numerous species at any single location. Even if the habitat is temporally shifted in location, it can represent a viable matrix of conservation land and net conservation benefits for the affected species.

A "sink" is an area of very low quality habitat that maintains a species population with negative growth rates through immigration from populations with positive growth rates ("sources"). The concern related to the temporary habitat established through the CRCC VLP is that animals that would have survived elsewhere may be drawn in from a source habitat to the enhanced habitat and subsequently lost due to the temporary nature of the habitat, becoming a "demographic sink." Dias (1996) argued that an inversion between source and sink habitat is possible so that sinks may actually become sources. An enhanced habitat area that was a sink prior to enhancement may be sufficiently improved such that it becomes a source where juveniles emigrate to occupy other habitat areas. Since a major goal of the CRCC VLP is to improve habitat conditions on rangelands and thus increase sensitive species populations, it can be concluded that the animals lost when the temporary habitat is removed are not a net subtraction from the baseline condition, but instead are a temporary addition. The net population of the habitat enhancements of the CRCC VLP should still be no less than if the temporary habitat was never available.

A similar potential impact could occur if Covered Species move from a protected habitat area to an enrolled property where the habitat may be only temporary. As stated above, these temporary habitat improvements are expected to last at least 10 years, which will provide benefits to Covered Species for a significant period of time. Habitat conditions on the enrolled property would have to be significantly better to cause the species to move there and stay. If the property is not sufficiently enhanced to provide for

all their needs, the species could be expected to move to other suitable habitat that better meets their needs. Since the goal of the CRCC VLP is to improve habitat conditions on rangelands and thus increase sensitive species populations, species that are attracted to enrolled properties and stay will likely be better able to contribute offspring to the larger population over time. The improved reproduction/recruitment rates are expected to contribute a net conservation benefit to the species populations, and could be expected to offset losses of individuals when the temporary habitat is removed.

Years of failure to address the scope of ongoing conflicts between agriculture and threatened and endangered species conservation virtually precluded the potential for the temporary component of recovery habitat that can provide benefits. The benefits expected to accrue from the long term agreements to provide enhanced temporary habitat offset the loss of species when the property is returned to baseline, and thus the effects are less than significant.

4.2.2 Effects on Streams and Fisheries

Many creeks and streams run through the project area and feed into the Feather and Sacramento Rivers. Some of the major tributaries include Butte, Cottonwood, Battle, Mill, and Deer Creeks. The rivers and their tributaries provide important habitat for a variety of common and special-status fish species. The special status fish species include the federally and State-listed threatened spring-run Chinook salmon, and federally and State-listed endangered winter-run Chinook salmon. Fall run Chinook salmon and late fall run Chinook salmon are federal species of concern. Hardhead (*Mylopharodon conocephalus*) are thought to be declining, and therefore becoming more isolated and vulnerable to threats.

Implementation of the enhancement, restoration, and return to baseline activities may temporarily disturb fish habitat. If the landowner chooses never to return to baseline, some changes to streambanks could be permanent. Riparian enhancement may require ground disturbance for bank stabilization, erosion repair, invasive species removal, and native vegetation planting. Such projects will be designed in consultation with the Program Administrator and other advising agencies (DFG, FWS, NRCS, National Marine Fisheries Service (NMFS)) to reduce the effects (such as measures to prevent sediment from entering streams) and avoid Take of fish species. Additional protective/mitigation measures will likely be required for the landowner to comply with Fish and Game Code Section 1600 and Clean Water Act Section 404.

Routine and ongoing ranch management activities may include livestock entering and trampling stream channels, including possible disturbance of spawning redds, supplying water to livestock watering troughs, and removal of downed limbs or other vegetation clogging water control structures or waterways. These activities could potentially result in soil erosion and/or sedimentation of local creeks and subsequent minor water quality degradation resulting in potential adverse effects to special-status fish. Increased sediment input could increase turbidity and reduce feeding efficiency of juvenile and adult fish.

Activities that may affect stream habitat or water quality or supply can require notification to the appropriate agencies (DFG for Fish and Game Code §1602, U.S. Army Corps of Engineers for Clean Water Act, and Regional Water Quality Control Board for various water quality protection laws). Listed fish species are not Covered Species under the CRCC VLP, so any potential Take of fish would require separate consultation with DFG and/or FWS or NMFS to obtain the appropriate Take permits. These independent consultations would include measures to avoid, minimize, and mitigate the effects of the temporary impacts or permanent changes: therefore, potential water quality degradation and subsequent effects resulting from these activities would minimized.

Suitable vegetation, including appropriate native species, would be planted concurrently or soon after removal of existing undesirable vegetation or other restoration or management actions to minimize the potential for severe erosion to occur on disturbed, unprotected land. When appropriate, fencing would be installed to protect enhanced and existing riparian and aquatic habitats. In addition, restoration and enhancement of natural riparian areas on rangelands would result in long-term beneficial effects to fish in the project area by increasing complexity of the aquatic environment, and providing cover, food, shade, and other habitat components. Enhanced riparian and wetland buffers along streams will filter pollutants and trap sediments before they enter the aquatic environment resulting in improved water quality that will benefit sensitive fish. Gravel recruitment rates would not be significantly affected. Therefore, the overall effects of the CRCC VLP on streams, habitat, and sensitive fish species are considered beneficial.

4.2.3 Effects on Other Biological Resources

The other types of biological resources not previously discussed that might be affected by the CRCC VLP include sensitive habitats, common wildlife, and vegetation. The baseline assessment conducted for each enrolling property will note the location and amount of the sensitive habitat areas for Covered Species, so that enhancement and restoration activities can avoid unnecessary impacts.

Some natural communities are considered sensitive because of high species diversity, high productivity, unusual nature, limited distribution, declining status, or a combination of these attributes. Local, state, and federal agencies consider such habitats important. Sensitive habitats in the program area include riparian woodland, freshwater marsh, and vernal pools. These may be temporarily impacted by enhancement, restoration, and ranch management activities. Degraded habitat areas may need to be impacted to take actions that will improve conditions such as removing invasive species, planting native vegetation, restoring hydrology, or constructing fencing to facilitate controlled grazing. Such impacts will be planned to avoid and minimize impacts, and to be short term. Sensitive habitats that are higher quality provide more of the necessary life requisites that plants and animals need, e.g. more and better breeding conditions, food, shelter, and less competition for resources from invasive or non-native species. The enhancements will result in a long-term increase in the overall

amount of sensitive habitat, habitat quality, and the populations of plants and animals it supports.

The natural communities in the program area also support common wildlife and plant species (see Section 3.3). Enhancement, restoration, and ranch management activities could also affect these common plant and animal species. The effects anticipated would be similar to the effects on Covered Species described in Section 4.2.1. These activities could temporarily reduce habitat value for populations of common plant and animal species on enrolled properties, but these species and their habitats are locally and regionally abundant, widely distributed, and are not considered sensitive. Enhanced native habitats are anticipated to support greater numbers and a higher diversity of common species which would offset any temporary negative effects.

Some actions to change habitat conditions may have the potential to benefit one species but be detrimental to another. Careful planning with the landowners by the Program Administrator and consulting with agencies like NRCS, DFG and FWS will avoid or balance such conflicts.

Therefore, effects on vegetation and common wildlife species from beneficial activities and management practices, including sensitive habitats, may be negative in the short term. Restoration and enhancement of natural habitat would reduce competition from invasive and non-native species, provide more and better quality habitat, and buffer these resources against losses in other areas from other impacts. The CRCC VLP will have a long-term beneficial effect on native habitat and associated plant and wildlife species. Therefore, the impacts of the program are less than significant and will result in a positive environmental effect.

Returning to Baseline

A landowner who chooses to return their property to baseline would be authorized to remove all habitat enhancement and restoration, but must assure that baseline conditions are maintained. The activities to remove enhancements would be similar to those taken to initiate the enhancement. Such activities could include vegetation removal (including trees) by mechanical or chemical means, grading, mowing, discing, burning, and altering water management. The potential effects on State-listed species and Species of Conservation Concern are discussed in Section 4.2.1. Other more common species of wildlife would also be affected by the loss of enhanced habitat.

- Effects on valley and foothill woodland, chaparral, riparian woodland, and valley grassland – Trees, shrubs, and herbaceous plants that were planted could be removed. Mechanical removal would impact the surrounding vegetation and disrupt the soil. Erosion could occur and impact downstream water quality. If herbicides are used, adjacent vegetation may be affected by overspray. Invasive plants may colonize the disturbed areas. Wildlife would be displaced from lost habitat, or potentially injured or killed during mechanical removal.

- Effects on freshwater marsh and vernal pools – Wetland areas and ponds may be drained causing the wetland vegetation to dry out and die. Wet habitats may be filled with soil. Vegetation may be removed mechanically or by treating with herbicides. Mechanical removal would impact the surrounding vegetation and disrupt the soil and potentially result in erosion. If herbicides are used, adjacent vegetation may be affected by overspray. Water quality may be affected by sediments and herbicides. Wildlife would be displaced from lost habitat, or potentially injured or killed during mechanical removal.

The overall effect is that the amount of habitat and/or the quality of habitat available to Covered Species and wildlife in general will return to the status it was before the restoration or enhancement activities were initiated.

4.3 Cultural Resources

For the purposes of this EA, cultural resources are defined as prehistoric and historic archaeological sites, and resources of interest to Native American groups. According to the California Historic Resources Information System (CHRIS), the type of cultural resources that would be most likely to be encountered in the project area include chert and obsidian flakes (debitage), shell beads, stone tools, milling stones, and mortar holes. There is only a very remote possibility of finding Native American remains as a result of this program.

If land management activities beneficial to sensitive species will require ground disturbance in previously undisturbed areas or cause greater ground disturbance than was determined from baseline conditions, and will be carried out using federal funding, the federal agency (U.S. Fish and Wildlife Service, Natural Resources Conservation Service, etc.) will conduct all necessary cultural resources reviews and surveys. State and Federal agencies are mandated to avoid or minimize impacts to significant cultural resources through project design. If projects that will require ground disturbance in previously undisturbed areas or enhanced ground do not use any federal funding, the Program Administrator and the Department will ensure that all necessary cultural resources reviews and surveys are conducted. All projects will be designed to avoid or minimize impacts to significant cultural resources. These activities would require avoidance of cultural resources during the initial disturbance, so no additional actions would be necessary to return to baseline.

In the unlikely event that human remains of Native American origin are discovered, landowners will notify the Program Administrator, who will then notify DFG, and comply with all federal and state laws relating to the disposition of Native American burials. Excavation of the site and all nearby areas reasonably suspected to overlie adjacent human remains will be halted until the County Coroner has been contacted to determine that no investigation of the cause of death is required, and, if the Coroner determines that the remains are Native American,

- the Coroner has contacted the Native American Heritage Commission;
- the Native American Heritage Commission has identified the person or persons it believes to be the most likely descended from the deceased Native American; and
- the most likely descendent has made recommendations to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, unless the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

4.3.1 Effects on Cultural Resources

Some enhancement and restoration activities may result in temporary disturbance to cultural resources. Best Management Practices have been developed to avoid or minimize impacts to cultural resources and are described below. Routine and Ongoing agricultural activities, which are considered part of the environmental baseline condition, include the activities described below, and any others that a rancher may undertake to maintain a ranching operation. Activities that are not listed below will be analyzed by DFG and FWS during the review process for individual Cooperative Agreements to determine if the activity is appropriate for coverage under the CRCC VLP. DFG and FWS recognize that routine and ongoing activities may vary from one ranching operation to another, and vary with changing environmental and economic conditions. This section includes a discussion of the effects of the CRCC VLP on cultural resources and the BMPs that will be recommended to avoid or minimize impacts to cultural resources.

1. Livestock grazing can impact cultural resources when cattle wallow in the site area or vehicles drive through. Fencing off the site will avoid impacts to cultural resources.
2. Control of ground-burrowing rodents using poisonous grain according to the labeled directions and local, State, and federal regulations and guidelines. This activity should not impact cultural resources.
3. Control and management of burrow complexes using discing and grading to destroy burrows and fill openings. Discing and grading can disturb archaeological sites, but when grading and discing is limited to the original depth of the ponds or ditches, cultural resources should not be further impacted.
4. Routine management and maintenance of stock ponds and berms to maintain livestock water supplies. Regrading of existing ponds and berms can disturb archaeological sites. Limit grading to the original depth of the ponds and bring in (weed-free) soil to build up the berms instead of using soil adjacent to site.
5. Routine maintenance or construction of fences for grazing management. Installation of fence posts can impact cultural resources. When repairing fences, use the same post holes.

6. Planting, harvest, or rotation of non-irrigated forage crops as part of a rangeland livestock operation (excluding conversion of natural habitat to cultivation). If discing is involved, keep discing at or above previously disturbed depths.
7. Maintenance and construction of livestock management facilities such as corrals, sheds, and other ranch outbuildings. Any new construction may impact cultural resources. Avoid constructing new facilities on archaeological sites.
8. Repair, maintenance, or de-commissioning of unimproved ranch roads. This activity may include improvement, upgrade, or construction of new roads if approved by DFG and FWS. Any new construction of grading may impact cultural resources. Keep grading at or above previously graded level and avoid constructing new roads on archaeological sites.
9. Discing of fence lines or perimeter areas for fire prevention control and other fire prevention activities. Keep discing at or above previous depth.
10. Placement of mineral supplements and supplemental feeding. Avoid placing mineral supplements or supplemental feeding on or near archaeological sites.
11. Control and management of noxious weeds. This activity should not impact cultural resources.
12. Application of herbicide and fertilizer. This activity should not impact cultural resources.
13. Riparian area maintenance (e.g., clearing debris, repairing erosion on banks). Many cultural resources are located along riparian areas. If new ground disturbance is to occur, a record search and possible survey should be done prior to activity.
14. Activities associated with irrigated pastures (e.g., maintenance of irrigation ditches and/or water diversions). Maintenance activities should be limited to at or above the original grade.
15. Movement of livestock. This activity should not impact cultural resources.
16. Use of all-terrain and off-road vehicles in pasture for ranch management activities. Driving off-road is primarily a problem in muddy areas, so avoid driving over sites when the area is muddy.
17. Use of horses and horse grazing. This activity should not impact cultural resources.
18. Emergency activities (e.g., fighting floods or fires). Use of heavy equipment could impact cultural resources. Avoid heavy equipment use in archaeological sites areas to the greatest extent practicable.
19. Livestock watering in natural streams including diversions. This activity should not impact cultural resources.

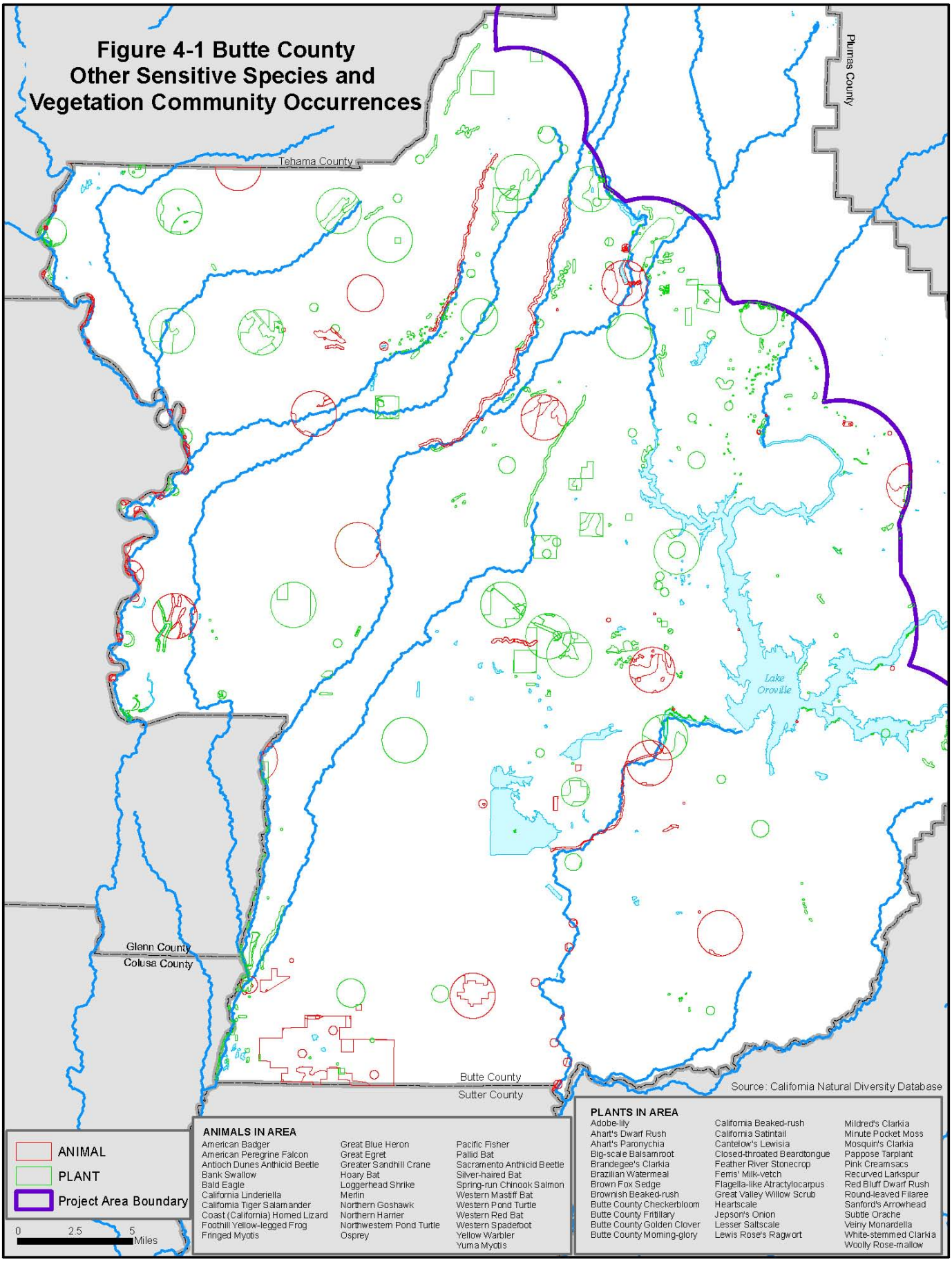


Figure 4-1 Butte County
Other Sensitive Species and
Vegetation Community Occurrences
Plumas County
Tehama County
Lake Oroville
Glenn County
Colusa County
Butte County
Sutter County
Source: California Natural Diversity Database
ANIMAL
PLANT
Project Area Boundary
0 2.5 5 Miles
ANIMALS IN AREA
American Badger
American Peregrine Falcon
Antioch Dunes Anthicid Beetle
Bank Swallow
Bald Eagle
California Linderiella
California Tiger Salamander
Coast (California) Horned Lizard
Foothill Yellow-legged Frog
Fringed Myotis
Great Blue Heron
Great Egret
Greater Sandhill Crane
Hoary Bat
Loggerhead Shrike
Merlin
Northern Goshawk
Northern Harrier
Northwestern Pond Turtle
Osprey
Pacific Fisher
Pallid Bat
Sacramento Anthicid Beetle
Silver-haired Bat
Spring-run Chinook Salmon
Western Mastiff Bat
Western Pond Turtle
Western Red Bat
Western Spadefoot
Yellow Warbler
Yuma Myotis
PLANTS IN AREA
Adobe-lily
Ahart's Dwarf Rush
Ahart's Paronychia
Big-scale Balsamroot
Brandegee's Clarkia
Brazilian Watermeal
Brown Fox Sedge
Brownish Beaked-rush
Butte County Checkerbloom
Butte County Fritillary
Butte County Golden Clover
Butte County Morning-glory
California Beaked-rush
California Satintail
Cantelow's Lewisia
Closed-throated Beardtongue
Feather River Stonecrop
Ferris' Milk-vetch
Flagella-like Atractylocarpus
Great Valley Willow Scrub
Heartscale
Jepson's Onion
Lesser Saltscale
Lewis Rose's Ragwort
Mildred's Clarkia
Minute Pocket Moss
Mosquin's Clarkia
Pappose Tarplant
Pink Creamsacs
Recurved Larkspur
Red Bluff Dwarf Rush
Round-leaved Filaree
Sanford's Arrowhead
Subtle Orache
Veiny Monardella
White-stemmed Clarkia
Woolly Rose-mallow

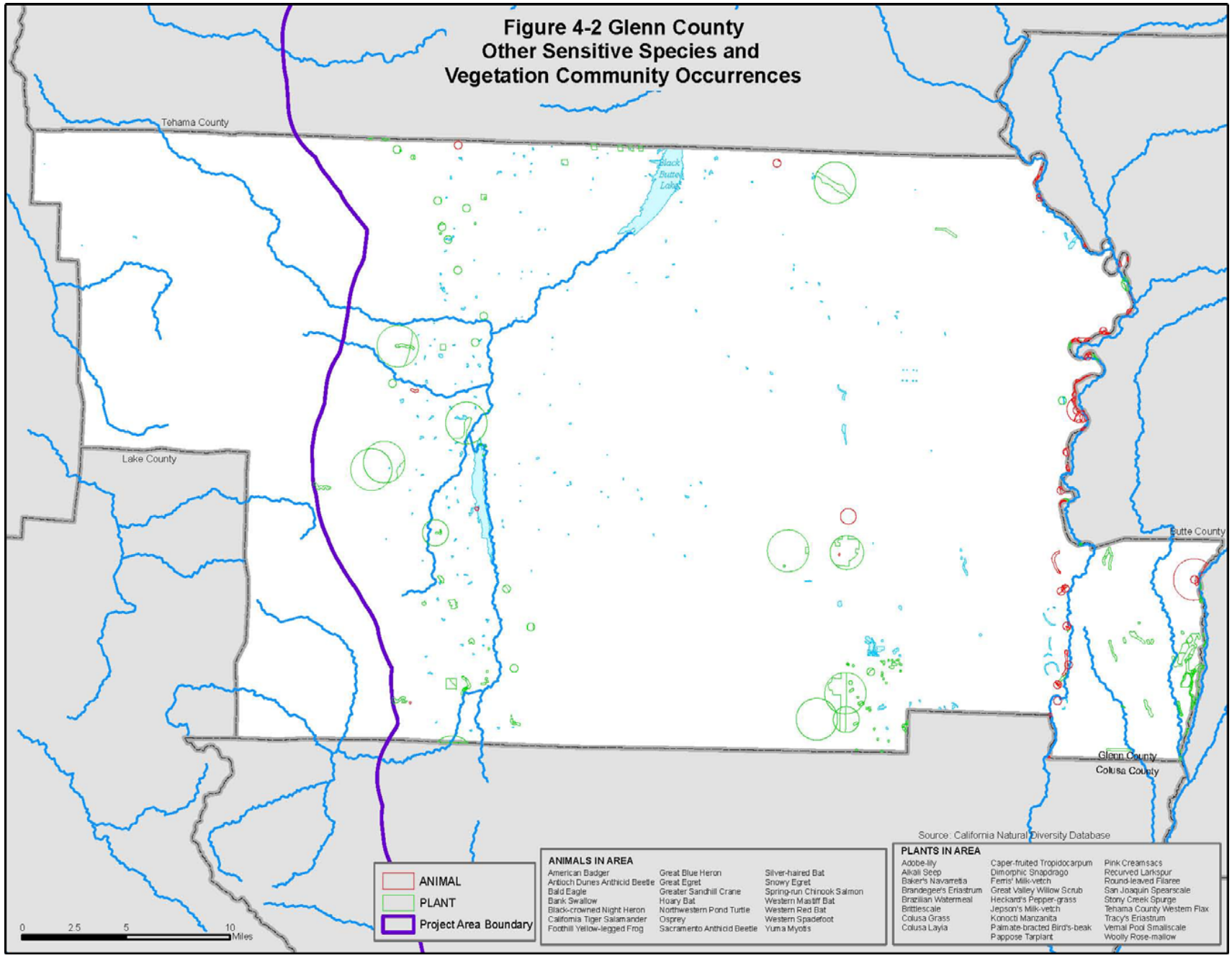


Figure 4-2 Glenn County
Other Sensitive Species and
Vegetation Community Occurrences
Tehama County
Black Butte Lake
Lake County
Butte County
Glenn County
Colusa County
Source: California Natural Diversity Database
ANIMAL
PLANT
Project Area Boundary
ANIMALS IN AREA
American Badger
Antioch Dunes Anthicid Beetle
Bald Eagle
Bank Swallow
Black-crowned Night Heron
California Tiger Salamander
Foothill Yellow-legged Frog
Great Blue Heron
Great Egret
Greater Sandhill Crane
Hoary Bat
Northwestern Pond Turtle
Osprey
Sacramento Anthicid Beetle
Silver-haired Bat
Snowy Egret
Spring-run Chinook Salmon
Western Mastiff Bat
Western Red Bat
Western Spadefoot
Yuma Myotis
PLANTS IN AREA
Adobe-lily
Alkali Seep
Baker's Navarretia
Brandegee's Eriastrum
Brazilian Watermeal
Brittlescale
Colusa Grass
Colusa Layia
Caper-fruited Tropidocarpum
Dimorphic Snapdragon
Ferris' Milk-vetch
Great Valley Willow Scrub
Heckard's Pepper-grass
Jepson's Milk-vetch
Konocti Manzanita
Palmate-bracted Bird's-beak
Pappose Tarplant
Pink Creamsacs
Recurved Larkspur
Round-leaved Filaree
San Joaquin Spearscale
Stony Creek Spurge
Tehama County Western Flax
Tracy's Eriastrum
Vernal Pool Smallscale
Woolly Rose-mallow
0 2.5 5 10 Miles

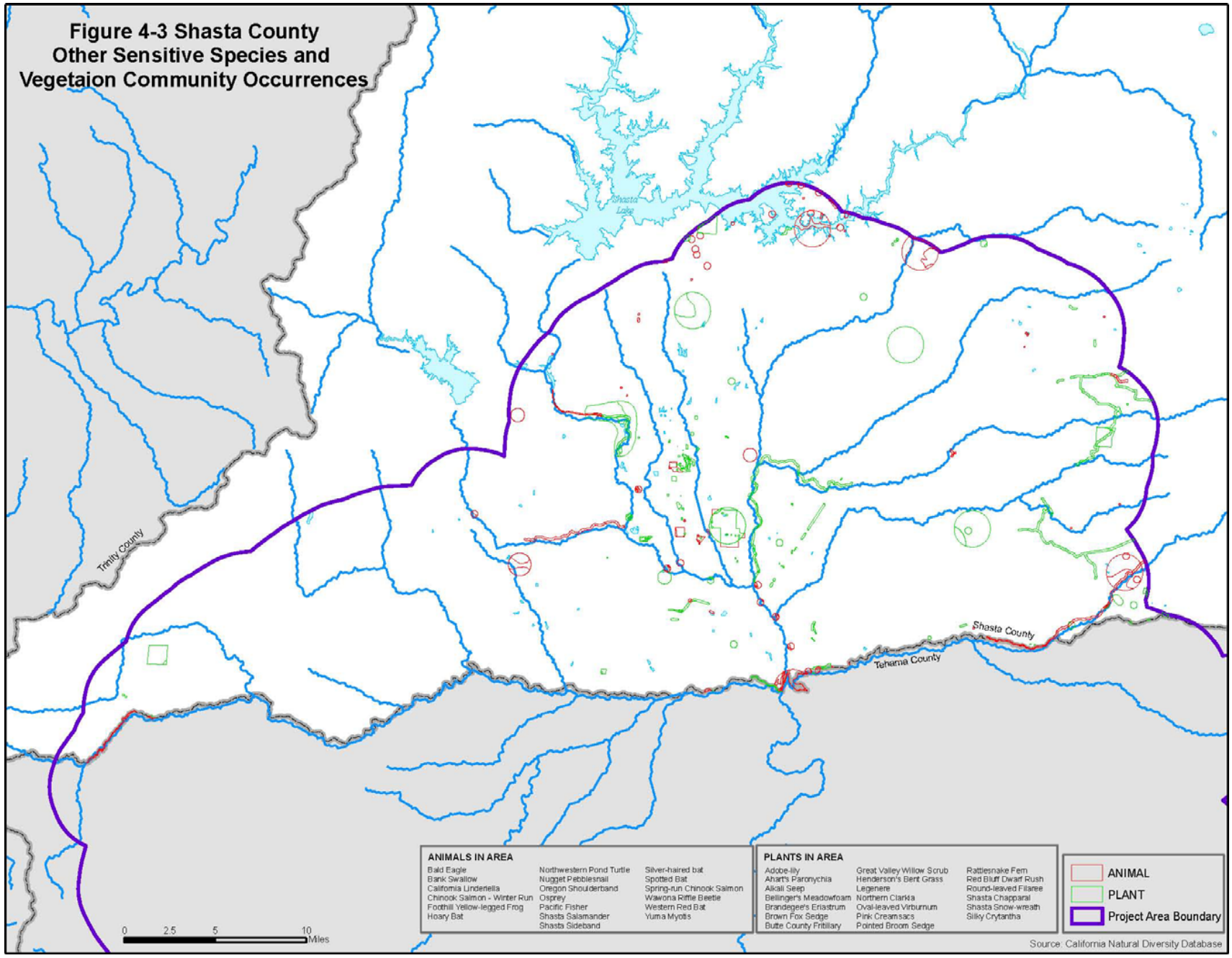


Figure 4-3 Shasta County
Other Sensitive Species and
Vegetaion Community Occurrences
Shasta Lake
Trinity County
Shasta County
Tehama County
ANIMALS IN AREA
Bald Eagle
Bank Swallow
California Linderiella
Chinook Salmon - Winter Run
Foothill Yellow-legged Frog
Hoary Bat
Northwestern Pond Turtle
Nugget Pebblesnail
Oregon Shoulderband
Osprey
Pacific Fisher
Shasta Salamander
Shasta Sideband
Silver-haired bat
Spotted Bat
Spring-run Chinook Salmon
Wawona Riffle Beetle
Western Red Bat
Yuma Myotis
PLANTS IN AREA
Adobe-lily
Ahart's Paronychia
Alkali Seep
Bellinger's Meadowfoam
Brandegee's Eriastrum
Brown Fox Sedge
Butte County Fritillary
Great Valley Willow Scrub
Henderson's Bent Grass
Legenere
Northern Clarkia
Oval-leaved Viburnum
Pink Creamsacs
Pointed Broom Sedge
Rattlesnake Fern
Red Bluff Dwarf Rush
Round-leaved Filaree
Shasta Chaparral
Shasta Snow-wreath
Silky Crytantha
ANIMAL
PLANT
Project Area Boundary
0 2.5 5 10
Miles
Source: California Natural Diversity Database

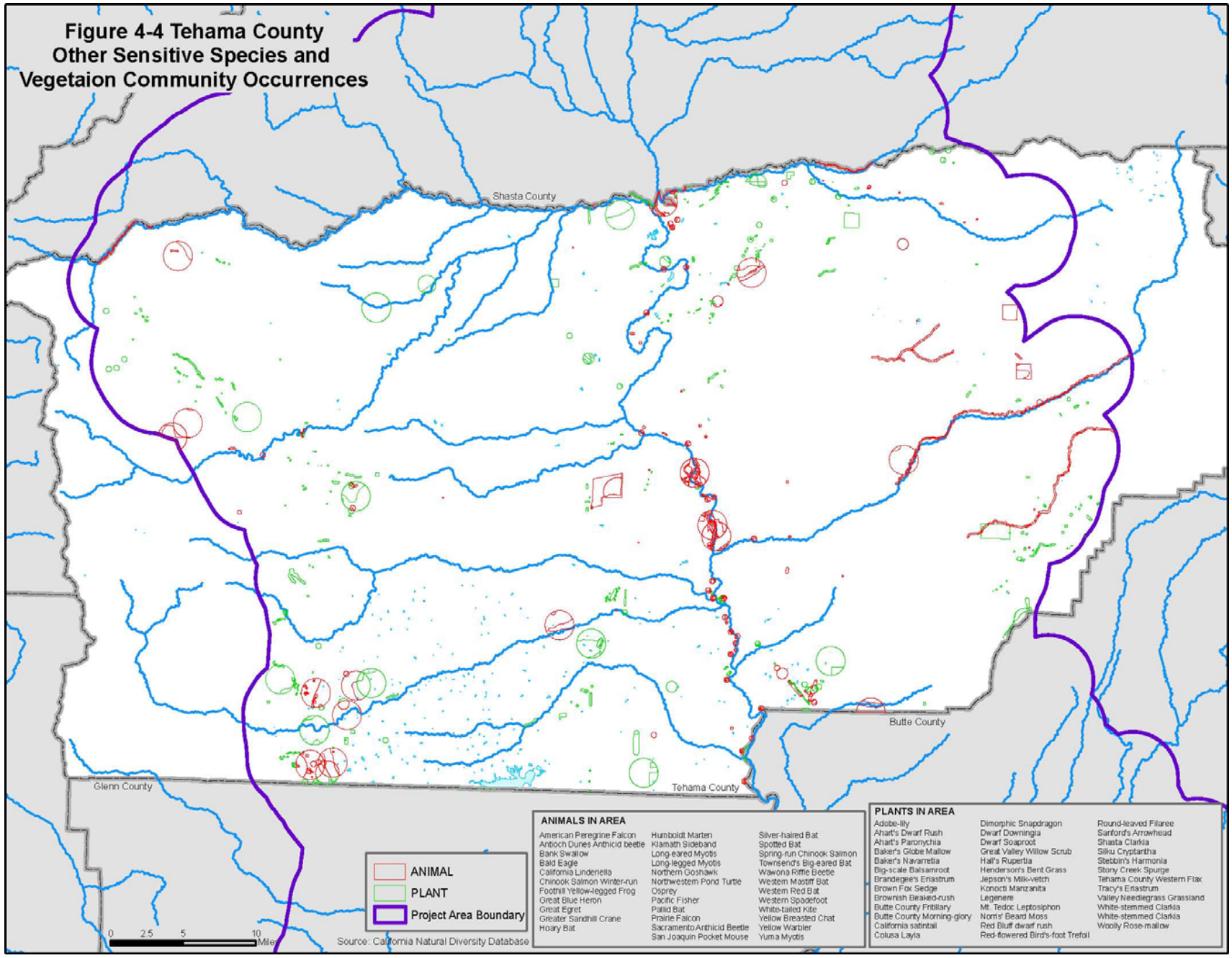


Figure 4-4 Tehama County
Other Sensitive Species and
Vegetaion Community Occurrences
Shasta County
Butte County
Tehama County
Glenn County
ANIMAL
PLANT
Project Area Boundary
0 2.5 5 10 Miles
Source: California Natural Diversity Database
ANIMALS IN AREA
American Peregrine Falcon
Antioch Dunes Anthicid beetle
Bank Swallow
Bald Eagle
California Linderiella
Chinook Salmon Winter-run
Foothill Yellow-legged Frog
Great Blue Heron
Great Egret
Greater Sandhill Crane
Hoary Bat
Humboldt Marten
Klamath Sideband
Long-eared Myotis
Long-legged Myotis
Northern Goshawk
Northwestern Pond Turtle
Osprey
Pacific Fisher
Pallid Bat
Prairie Falcon
Sacramento Anthicid Beetle
San Joaquin Pocket Mouse
Silver-haired Bat
Spotted Bat
Spring-run Chinook Salmon
Townsend's Big-eared Bat
Wawona Riffle Beetle
Western Mastiff Bat
Western Red Bat
Western Spadefoot
White-tailed Kite
Yellow Breasted Chat
Yellow Warbler
Yuma Myotis
PLANTS IN AREA
Adobe-lily
Ahart's Dwarf Rush
Ahart's Paronychia
Baker's Globe Mallow
Baker's Navarretia
Big-scale Balsamroot
Brandegee's Eriastrum
Brown Fox Sedge
Brownish Beaked-rush
Butte County Fritillary
Butte County Morning-glory
California satintail
Colusa Layia
Dimorphic Snapdragon
Dwarf Downingia
Dwarf Soaproot
Great Valley Willow Scrub
Hall's Rupertia
Henderson's Bent Grass
Jepson's Milk-vetch
Konocti Manzanita
Legenere
Mt. Tedoc Leptosiphon
Norris' Beard Moss
Red Bluff dwarf rush
Red-flowered Bird's-foot Trefoil
Round-leaved Filaree
Sanford's Arrowhead
Shasta Clarkia
Silky Cryptantha
Stebbin's Harmonia
Stony Creek Spurge
Tehama County Western Flax
Tracy's Eriastrum
Valley Needlegrass Grassland
White-stemmed Clarkia
White-stemmed Clarkia
Woolly Rose-mallow

5 OTHER CEQA-REQUIRED SECTIONS

5.1 Cumulative Effects of Other Similar Projects in the Region

Incidental Take Permits (CESA §2081)

DFG may authorize incidental take of state-listed species pursuant to CESA §2081 when the impacts are fully mitigated. Currently there is only one §2081 permit in effect in the project area that authorizes take of CRCC VLP Covered Species:

2081-2002-017-02 Wild Goose Storage Facility Expansion
County: Butte, Colusa
Species: Swainson's hawk, bank swallow, giant garter snake
Date Issued: 9/26/2002
Expiration: 10/1/2012
Project Description: Increase storage and delivery capacities of an existing, natural gas storage field. It involves expanding the existing 1.5-acre well pad and a remote facility from 6.1 acres to 12.2 acres, and installing 30 miles of new pipeline. Approximately 7.3 acres will be permanently impacted, and 288 acres temporarily impacted.
Required Mitigation Acres: 136.56 acres
Security Required: $3,051,050

The impacts of this project are fully mitigated by permanent protection of compensation habitat and an endowment to fund its management in perpetuity. The cumulative effects of this project combined with the CRCC VLP are less than significant.

Other Habitat Enhancement Programs

There are several programs in the region that provide incentives to landowners to enhance, restore, and manage habitat for wildlife. These programs have goals that match or are similar to those of the proposed project, *i.e.,* providing additional, better quality habitat. Within these programs there are many projects that are either planned or already approved. Table 5-1 summarizes these programs and projects including the number of CRCC VLP Covered Species that are expected to benefit from these other similar projects (if known).

There are three other safe harbor agreements (SHA) in the four county project area described below. Two of these are already permitted by FWS. One project, the Sacramento River Conservation Area will be a combined SHA and Voluntary Local Program pursuant to Fish and Game Code §2086. This project is in the planning phase and is modeling its structure, agreements, and administration after the CRCC VLP. These three projects are anticipated to have similar beneficial effects on 5 of the 18 species covered by the CRCC VLP.

DFG sponsors the California Waterfowl Habitat Program that provides

landowners with technical assistance and financial incentives to manage wetland habitat. This program is focused on providing quality waterfowl habitat for 10 year terms. Although information is not tracked related to the CRCC VLP Covered Species, wetlands in the project area could be expected to provide beneficial habitat for 3 of the 18 species covered by the CRCC VLP (Table 3-1).

DFG also sponsors the Landowner Incentive Program (LIP) which is an effort to reverse the decline of at-risk species in the Central Valley of California through enhancement and management of private lands. The program focuses on the Central Valley's three predominant historical habitat types: wetlands, native grasslands, and riparian habitat. The LIP assists landowners with enhancing these three habitat types by providing annual incentive payments in return for implementing habitat management plans that benefit special status species. LIP projects in the CRCC VLP project area have created habitat that may benefit three of the 18 species covered by the CRCC VLP.

The Permanent Wetland Easement Program is sponsored by DFG in cooperation with the Wildlife Conservation Board which pays willing landowners approximately 50-70% of their property's fair market value to purchase the farming and development rights in perpetuity. Easement landowners are required to follow a cooperatively developed wetland management plan. Although information is not tracked relative to the CRCC VLP Covered Species, wetlands in the project area could be expected to provide beneficial habitat for three of the 18 species covered by the CRCC VLP (Table 3-1).

The Partners for Fish and Wildlife Program is sponsored by the FWS and provides technical assistance and cost-share funding to private landowners and their partners for wildlife habitat restoration. Priority is given to projects that support native habitats and species, and where landowners agree to maintain the habitat for at least ten years. Projects within the CRCC VLP project area have created habitat that may benefit five of the 18 CRCC VLP Covered Species.

The NRCS sponsors two programs for enhancing and restoring wildlife habitat on private lands: the Wetlands Reserve Program (WRP), and the Wildlife Habitat Incentives Program (WHIP). WRP provides an opportunity for landowners to receive financial incentives to restore, protect, and enhance wetlands in exchange for retiring marginal land from agriculture. Landowners who voluntarily agree to grant either a permanent or 30 year easement receive financial compensation, plus NRCS will cost-share and provide technical assistance on wetland restoration. WRP projects in the CRCC VLP project area have provided habitat that may benefit eight of the 18 species covered by the CRCC VLP. WHIP is a voluntary program for landowners who want to develop and improve wildlife habitat primarily on private land. Through WHIP, NRCS provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP agreements generally last from five to ten years. WHIP projects in the CRCC VLP project area have provided habitat that may benefit 12 of the 18 species covered by the CRCC VLP.

Table 5-1: Similar Projects within the Project Area

Program/Project Name	Sponsors	Counties	Natural Communities	# of Same Covered Species *	Status
Burrows Ranch; Big Bluff Ranch Safe Harbor Agreement	Private landowners; FWS	Tehama	Riparian forest, wetlands, grassland, oak and elderberry savannah	2 – CRLF, VELB	Permitted
California Riparian Habitat Conservation Program – 19 projects	Wildlife Conservation Board (WCB); CSU Chico; River Partners, Glenn County RCD: many other partners	Butte (2), Glenn (9), Shasta (6), Tehama (2)	Riparian forest	NI	15 Complete, 4 Approved
California Waterfowl Habitat Program – 10 projects	Private landowners; DFG	Butte (7), Glenn (3)	Wetlands	NI	Ongoing
Cottonwood Creek Programmatic Safe Harbor Agreement	Cottonwood Creek Watershed Group; FWS	Shasta, Tehama	Riparian, wetlands	1 - CRLF	Permitted
Habitat Enhancement and Restoration Program – 7 projects	WCB; DFG; California Conservation Corps; many other partners	Butte (3), Glenn (1), Shasta (2), Tehama (1)	Riparian forest, wetlands, instream	NI	5 Complete, 2 Approved
Inland Wetlands Conservation Program – 24 projects	WCB; DFG; California Waterfowl Association; Ducks Unlimited	Butte (18), Glenn (4), Tehama (2)	Wetlands	NI	20 Complete, 4 Approved
Landowner Incentive Program (LIP) – 12 projects	Private landowners; DFG	Butte (5), Glenn (4), Shasta (2), Tehama (1)	Riparian, grassland, wetlands	3 – GGS, TCBB, VELB	Ongoing; Planning
Partners for Wildlife – 76 projects	Private landowners; FWS; NRCS; USFS; DFG; many other partners	Butte, Glenn, Shasta, Tehama	Riparian forest, grassland, wetlands, oak and elderberry savannah, chaparral	5- GGS, VELB, SWHA, TCBB, WYBC	69 Complete, 7 Planning

Program/Project Name	Sponsors	Counties	Natural Communities	# of Same Covered Species *	Status
Permanent Wetland Easement Program – 9 projects	Private landowners; DFG	Butte (8), Glenn (1)	Wetlands, grassland	NI	Ongoing
Sacramento River Programmatic Safe Harbor Agreement and Voluntary Local Program	Sacramento River Conservation Area Forum; FWS; DFG	Butte, Glenn, Shasta, Tehama, Colusa, Yolo, Sutter	Riparian forest, grassland, oak and elderberry savannah, and oxbows	4 – VELB, GGS, SWHA, WYBC	Planning
Wetlands Reserve Program (WRP) - purchased easements and installed fencing	Private landowners; NRCS	Shasta, Tehama	Vernal pools	8 - VPS	Complete
Wildlife Habitat Incentives Program (WHIP) – 22 projects	Private landowners; NRCS	Butte, Glenn, Shasta, Tehama	Riparian, wetland, grassland	4 - CRLF, VELB, SWHA, TCBB	17 Complete, 5 Planning

*CRLF – CA Red-legged frog; GGS – Giant garter snake, NI – No information; SWHA – Swainson's hawk; TCBB – Tricolored blackbird; VELB – Valley elderberry longhorn beetle; VPS – Vernal pool species (Conservancy fairy shrimp, Vernal pool fairy shrimp, Vernal pool tadpole shrimp, Hoover's spurge, Butte County meadow foam, hairy Orcutt grass, slender Orcutt grass, Greene's tuctoria, and Bogg's Lake hedge-hyssop); WYBC – Western yellow-billed cuckoo.

The Wildlife Conservation Board sponsors four programs that fund restoration and enhancement of wildlife habitat: California Riparian Habitat Conservation Program, Inland Wetlands Conservation Program, Ecosystem Restoration on Agricultural Lands Program and Habitat Enhancement and Restoration Program. The California Riparian Habitat Conservation Program has a basic mission to develop coordinated conservation efforts aimed at protecting and restoring the state's riparian ecosystems. The Inland Wetlands Conservation Program was established to carry out the programs of the Central Valley Joint Venture (CVJV). The mission of the CVJV, established under the North American Waterfowl Management Plan, is to "work collaboratively through diverse partnerships to protect, restore, and enhance wetlands and associated habitats for waterfowl, shorebirds, waterbirds, and riparian songbirds." Projects under the Inland Wetlands Conservation Program are only located in the Central Valley. The Ecosystem Restoration on Agriculture Lands Program assists farmers and ranchers in integrating agricultural activities with ecosystem restoration and wildlife protection. The Habitat Enhancement and Restoration Program focuses on restoration of fisheries habitat, wetlands outside the Central Valley, native grasslands, and forests. Although information is not tracked relative to the CRCC VLP Covered Species, wetlands in the project area could be expected to provide beneficial habitat for three of the 18 species covered by the CRCC VLP; riparian forest enhancement could be expected to provide beneficial habitat for four of the 18 Covered Species; grassland enhancement could be expected to provide beneficial habitat for four of the 18 Covered Species; and valley and foothill woodland enhancement could be expected to provide beneficial habitat for two of the 18 Covered Species (see Table 3-1 for covered species natural community associations).

The main intent of the proposed CRCC VLP is to create benefits to candidate, threatened, and endangered species, and to wildlife generally, by the enhancement of habitat through voluntary landowner efforts. Success in achieving wildlife benefits could result in a beneficial environmental effect. With success in the CRCC VLP, the cumulative condition of habitats for the Covered Species will improve on rangelands in the project area. With improved habitat conditions, the cumulative conditions of the candidate, threatened, endangered, and sensitive species are expected to improve and contribute to their recovery. The CRCC VLP would not have an adverse effect on the environment; rather, it would result in an overall environmentally beneficial contribution.

5.2 Unavoidable Significant Effects on the Environment

A full range of potential environmental effects have been examined for this Environmental Analysis (EA). All impact issues have been found to be less than significant based on the Environmental Checklist and supporting discussion in Appendix A. Issues related to Agriculture Resources, Biological Resources and Cultural Resources have been evaluated in Section 4 of the EA. No significant adverse effects on the environment were identified as a result of the analysis, so no significant unavoidable effects are anticipated.

5.3 Growth-Inducing Impacts

In 14 CCR §15126(d), the State CEQA Guidelines require addressing growth-inducing impacts in environmental impact reports. Growth-inducing impacts can occur under direct and indirect circumstances. When substantial new employment opportunities are created, population growth can occur as a direct consequence of employees moving into the region. When infrastructure is expanded, such as increasing wastewater treatment plan capacity, it can remove an obstacle to growth, indirectly inducing population growth. Other actions that can stimulate population growth include new housing supply, substantially increased sale of goods, and services, or extension of utilities into unserved areas.

The proposed project applies specifically to enhancing habitat for sensitive species while maintaining and managing ranching activities on rangelands for the purpose of producing or marketing animal products. The VLP Regulations (CCR §786 *et seq.*) define these routine and ongoing agricultural activities as not including the conversion of agricultural land to nonagricultural use. Since conversion to nonagricultural or urban use will not be authorized under the CRCC VLP, the potential for growth-inducement does not exist. Activities that typically might have some potential for growth inducement, such as generation of employment opportunities and generation of the sale of goods, are already occurring on the ranches that may participate in this program and will not constitute new effects. The proposed project would have no effect on parameters that are typically evaluated in addressing potential growth inducement, such as provision of housing supply, generation of new employment opportunities, generation of the sale of new goods and services, removal of growth obstacles, expansion of infrastructure, or extension of utilities. Therefore, the proposed project will not result in any growth-inducing impacts.

5.4 Climate Change Analysis

During the last 50 years in California and western North America, winter and spring temperatures have been warmer, spring snow levels in lower- and mid-elevation mountains have dropped, snowpack has been melting one to four weeks earlier, and flowers are blooming one to two weeks earlier. Climate change in the future is anticipated to follow the same trends with temperatures in California expected to rise 4.7 to 10.5°F by the end of the century resulting in less snow cover in the mountains, more heavy rain events in winter causing more frequent flooding, and increased risk of large wildfires (California Climate Change Center 2006).

Global warming is expected to intensify threats to natural communities in California by increasing the risk of wildfire. If precipitation increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems are expected to increase by approximately 30 percent toward the end of the century, because more winter rain will stimulate the growth of more plant “fuel” available to burn in the summer and fall. In contrast, a hotter, drier climate could promote up to 90 percent more fires by the end of

the century by drying out and increasing the flammability of woodland and forest vegetation (California Climate Change Center 2006).

Global warming is expected to alter the distribution and character of natural vegetation. With warmer temperatures, plant communities such as grasslands and oak woodlands are expected to move up in elevation and latitude, changing the landscape over time in the project area. Warming temperatures are also resulting in rising sea level projected to be 22 to 35 inches higher by the end of the century (California Climate Change Center 2006). Such a change would inundate low elevation areas and exacerbate flooding events as far inland as the Central Valley.

In this section we will discuss how these projected climate changes may impact the plant communities and Covered Species in the CRCC VLP over the 50 years of the permit term, and how the proposed activities may help mitigate for the climate change impacts to the State-listed, rare, and Species of Conservation Concern and their habitats. Later, we will discuss the potential impacts of the program on greenhouse gases.

Effects on Species

- Vernal pool plants – Climate change trends may cause some of the smaller vernal pools to dry up before the plants are able to set seed. Improvements to hydrology and appropriate grazing regimes may improve the likelihood of the vernal pool plants perpetuating in these drier areas.
- Indian Valley brodiaea – Climate change impacts to this species could include prolonged drought conditions on serpentine soil areas. Studies to determine improved grazing regimes may help scientists understand the impacts of climate change on serpentine soils and the Indian Valley brodiaea.
- Giant garter snake – Climate change may impact the giant garter snake through higher water levels in winter due to increased flood events. Maintained and repaired levees that protect developed areas from higher flood flows will provide basking and overwintering habitat for this species and connectivity between wetland areas. Maintaining rangelands in ranching management and enhancing habitat conditions will increase connectivity of habitat. Improved connectivity will allow giant garter snake to take advantage of more of the landscape to meet their cover and foraging needs.
- Swainson's hawk – Climate change may impact the Swainson's hawk through the rise in water levels, potentially affecting the growth and sustainability of riparian trees. Existing riparian vegetation may be inundated, but additional new riparian habitat may develop if levees are set back to handle additional flood flows. If snow amounts decline, foraging habitat may be reduced, because less water will be available for irrigation of crops that benefit this species through the insects and small mammals that thrive in certain crops. The beneficial activities anticipated for this VLP will conserve existing nesting trees and grow new trees that may eventually provide nesting opportunities. Additionally, improved management of rangelands may provide additional foraging opportunities for

Swainson's hawk in non-crop areas.

- Yellow-billed cuckoo – Climate change may impact the Yellow-billed cuckoo through the rise in water levels, potentially affecting the growth and sustainability of riparian vegetation. Existing riparian vegetation may be inundated, but additional new riparian habitat may develop if levees are set back to handle additional flood flows. Enhancements anticipated for the benefit of this species, including the planting of native riparian vegetation, should offset losses over the duration of this permit. Maintaining rangelands in ranching management and enhancing habitat conditions will increase connectivity of habitat. Improved connectivity will allow yellow-billed cuckoos to take advantage of more of the landscape to meet their nesting and foraging needs.
- Burrowing owl – Effects on burrowing owls due to climate change could be loss of suitable foraging habitat. Enhancements to existing burrows including weed management, improved grassland vegetation, and reduced ground squirrel control should offset impacts to this species from drought conditions that may arise. Maintaining rangelands in ranching management and enhancing habitat conditions will increase connectivity of habitat. Improved connectivity will allow burrowing owls to take advantage of more of the landscape to meet their cover and foraging needs.
- Tricolored blackbird – Impacts to this species from climate change could include loss of suitable nesting substrates and food sources due to less irrigation water for crops. Avoidance measures during nesting season and enhancements to the nesting habitat for this species should minimize any impacts due to climate change. Maintaining rangelands in ranching management and enhancing habitat conditions will increase connectivity of habitat. Improved connectivity will allow tricolored blackbirds to take advantage of more of the landscape to meet their nesting and foraging needs.
- Sacramento Valley red fox – Rising sea levels may inundate portions of the Sacramento Valley red fox's range outside of the program area causing foxes to move northward and higher in elevation. Foxes may lose suitable foraging habitat. Enhancements to grasslands and riparian habitat should offset impacts by providing better habitat for prey species. Maintaining rangelands in ranching management and enhancing habitat conditions will increase connectivity of habitat. Improved connectivity will allow red foxes to take advantage of more of the landscape to meet their cover and foraging needs.

Effects on Greenhouse Gases

The activities to be authorized under the CRCC VLP are known to contribute greenhouse gas emissions that are affecting climate change. However, there are also activities authorized under the CRCC VLP that are known to provide carbon sequestration, reducing the effects of greenhouse gases. DFG does not believe approval of the program will result in an adverse impact associated with greenhouse gas emissions.

The routine and ongoing ranching activities authorized by the CRCC VLP will

include the use of vehicles and ranch equipment, and livestock grazing which will produce greenhouse gas emissions, carbon dioxide and methane respectively. Livestock ranching has been occurring on these lands for many, many years. Properties that enroll in the program will remain in livestock production and are anticipated to have livestock numbers and vehicle and equipment usage remain approximately the same as current conditions. These activities and their related emissions are historic and ongoing activities and DFG expects the activities and related impacts will continue regardless of the proposed program. For purposes of CEQA, the greenhouse gas emissions associated with these historic and ongoing activities are considered part of the environmental baseline.

The analysis that follows focuses on the nature and extent to which the proposed program will cause a physical change to the existing environmental baseline. To the extent there is a project-related change, the analysis will then turn to whether the direct or reasonably foreseeable indirect changes to the environment that may be caused by the proposed program are significant. The threshold by which project-related greenhouse gas impacts would be considered significant is whether project-related impacts will impair California's ability to achieve the reduction goals established by Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006. AB 32 establishes a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions (California Climate Change Portal).

While CRCC VLP Covered Activities are known to produce historic and ongoing greenhouse gas emissions, DFG expects the proposed program, if approved and implemented, will result in a net reduction in these emissions. The CRCC VLP authorizes habitat restoration and enhancement to improve vegetation cover and quality on the properties, and return to baseline conditions. The actions will involve additional vehicle and equipment operation for vegetation removal, soil conditioning, pond and wetland construction, vernal pool hydrology restoration, seed and vegetation planting, and similar activities to remove the enhancements should a landowner choose to withdraw from the program. These activities will result in a slight increase in greenhouse gases.

Habitat enhancement activities for each enrolled property are expected to be of short duration. Potential increases in emissions from enhancement activities will only occur in the initial phases (a few days to a few weeks) when vehicular and equipment operation is necessary to carry out the restoration and enhancement actions. Initial vegetation planting may require irrigation for a year or two which could involve operating water pumps. Native habitat restoration requires little to no maintenance and therefore little to no additional greenhouse gas emissions. Similarly, the activities authorized to return the enhanced habitat to its baseline condition and their resulting emissions would be of short duration, only the time period necessary to remove the enhancements. Conditions on the property after returning to baseline would be the same as the environmental baseline, as if the project had not occurred.

Carbon sequestration is the process by which atmospheric carbon dioxide is

absorbed by vegetation through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils. Carbon sequestration in natural vegetation helps offset fossil fuel emissions, one of the key drivers of human-induced climate change (USFS). Ranching practices can increase the ability of ranchlands to sequester additional atmospheric carbon while enhancing other ecosystem services, such as improved soil and water quality (USFS). Planting native vegetation, restoring ecosystem function, and improving natural community health are some of the ways to increase sequestered carbon. All of these beneficial activities will occur during implementation of the CRCC VLP.

The CRCC VLP does not authorize a change in land use that would result in significant changes to acreages of natural vegetation. The habitat restoration and enhancement to be conducted under the CRCC VLP will result in some removal of vegetation that could increase carbon dioxide emissions from decaying vegetation and by reducing carbon sequestration capacity. The vegetation removal is the first step of the activities planned to improve and increase native species' vegetative cover, abundance, and quality on enrolled properties. Subsequent actions would include planting native vegetation and grazing management to enhance native vegetation. The result of the habitat restoration and enhancement is expected to be a net increase in the carbon sequestration capacity of enrolled properties.

The history of these types of habitat enhancement projects has demonstrated that so long as the regulatory benefits remain intact, landowners have not withdrawn from the program but instead are continuing to maintain the habitat enhancements they installed (Wilcove and Lee 2004). Over the 50 year life of the CRCC VLP, the long term carbon sequestration benefits of this program are expected to more than offset the short term effects of emissions from the enhancement actions and return to baseline actions (if any). Thus, the CRCC VLP is expected to result in a net reduction in greenhouse gases over the existing environmental baseline.

Participation in the CRCC VLP will contribute to the ability of landowners to sustain a viable ranching business and hopefully prevent such lands from being converted to other more industrial or urban uses that would produce significantly more greenhouse gas emissions. DFG does not believe approval of the program will result in an adverse impact associated with greenhouse gas emissions. The proposed program is not expected in any respect to impair California's ability to achieve the reduction goals established by AB 32. DFG has concluded that the potential environmental effects on climate from the CRCC VLP are less than significant, and DFG believes they will be positive over the life of the program.

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8 APPENDICES

A - Environmental Checklist – see page vi

B - Notice of Preparation

C - CRCC Programmatic Safe Harbor Agreement/Voluntary Local Program

D –Species Occurrences by County

D-1 Butte County
D-2 Glenn County
D-3 Shasta County
D-4 Tehama County

APPENDIX B Notice of Preparation and Public Meeting Notes

Notice of Preparation

To:
California State Clearinghouse
1400 Tenth Street, Suite 222
P.O. Box 3044
Sacramento, CA 95812-3044

From:
California Dept. of Fish and Game
Habitat Conservation Branch
1416 Ninth Street
Sacramento, CA 95814

Subject: Notice of Preparation of a Draft Environmental Analysis for a Certified Regulatory Program

Project Title: California Rangeland Conservation Coalition Programmatic Safe Harbor Agreement and Voluntary Local Program

Project Applicant: California Cattlemen's Association, Program Administrator

The California Department of Fish and Game (Department) will be the Lead Agency and will prepare an Environmental Analysis (EA) for the project identified above. The Voluntary Local Program is a Certified Regulatory Program pursuant to CEQA Section 15251(p). The project description, location, and the potential environmental effects are contained in the attached materials. We need to know the views of your organization as to the scope and potential significance of impacts that might be associated with this project.

Submitting Comments
DFG invites written comments from interested parties to ensure that the full range of issues related to the proposed project are identified and analyzed. Due to the time limits mandated by State law, information, written comments, and questions related to the preparation of the EA must be sent at the earliest possible date but not later than 30 days after the date at the bottom of this notice. Written comments should be directed to the contact below. All comments received, including commenters' names and addresses, will become part of the official administrative record and may be made available to the public.

Public Meeting
A public meeting has been scheduled to provide an overview of the proposed action and obtain feedback. The meeting will be held on the following date at the following location:

March 20, 2008
4:00 p.m. – 6:00 p.m.
Chico Library, 1108 Sherman Avenue, Chico, CA 95926
(530) 891-2762

For Further Information Contact:

Jennifer Hogan
California Department of Fish and Game
Habitat Conservation Branch
1416 9th Street – Room 1280
Sacramento, CA 95814
Telephone: (916) 651-8711
E-mail: jhogan@dfg.ca.gov

Supplemental Information
Persons needing reasonable accommodations in order to attend and participate in a public meeting should contact Jennifer Hogan at (916) 651-8711 as soon as possible. In order to allow sufficient time to process requests, please call no later than 1 week before the public meeting. Information regarding this proposed project is available in alternative formats upon request.

Date _____ Signature _____

Scott A. Flint
Acting Branch Chief
Habitat Conservation Branch

Telephone: (916) 653-4875

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15251(p), 15375.

Project Title: California Rangeland Conservation Coalition Programmatic Safe Harbor Agreement and Voluntary Local Program

Lead Agency: California Department of Fish and Game

Project Applicant: California Cattlemen's Association, Program Administrator

Geographic Scope: Butte, Glenn, Shasta, and Tehama Counties, California

Introduction

Pursuant to the California Environmental Quality Act (CEQA), the California Department of Fish and Game (Department) plans to prepare an Environmental Analysis (EA) to evaluate the impacts of the requested approval of a programmatic Safe Harbor Agreement/Voluntary Local Program and issuance of an authorization pursuant to Section 2086 of the California Fish and Game Code (FGC) and implementing regulations in Section 786 *et seq.* of Title 14 of the California Code of Regulations. The Voluntary Local Program (VLP) is a Certified Regulatory Program pursuant to CEQA Section 15251(p). Upon the authorization of a VLP, the Take of candidate, threatened, or endangered species incidental to routine and ongoing agricultural activities that occurs while the specified management practices are followed is not prohibited (FGC §2086(c)).

The EA will identify short-term and long-term potentially significant effects on the environment, alternatives, and will also address any growth-inducing and cumulative effects of the proposed project. Where feasible, the EA will identify mitigation measures to reduce potentially significant impacts to a level below significance.

During the development of the VLP, the Department worked closely with various members of the California Rangeland Conservation Coalition, including: (1) the California Cattlemen's Association; (2) the California Farm Bureau Federation; (3) U.S. Fish and Wildlife Service (FWS); (4) the U.S.D.A. Natural Resources Conservation Service (NRCS); (5) Environmental Defense; (6) Defenders of Wildlife; and (7) Sustainable Conservation. In addition, the Department and other members of the California Rangeland Conservation Coalition met with recognized species experts and private cattle ranchers in development of the VLP. The California Department of Food and Agriculture was invited to participate, and was kept informed about progress.

Project Description

The California Cattlemen's Association (Applicant) is proposing to be the Program Administrator for the California Rangeland Conservation Coalition Programmatic Safe Harbor Agreement and VLP. The VLP is a joint document between the Department and the FWS that covers Take of listed species through the Department's VLP (FGC §2086) and the FWS' Safe Harbor Agreement Program (pursuant to Section 10(a)(1)(A) of the

Federal Endangered Species Act). The purpose of the VLP is to encourage non-federal landowners to voluntarily enhance, restore, and maintain habitat for sensitive, candidate, threatened and endangered species that benefit from maintenance of ranching activities. In exchange for voluntarily enhancing sensitive species habitat, landowners who enroll in the program and comply with all program requirements will receive Take authorization for state and federally-listed Covered Species associated with routine and ongoing agricultural activities. Without the protection afforded through the incidental Take authorization, non-federal landowners would likely not enhance habitat conditions for state and federally-listed species. The programmatic VLP will cover non-federal lands that are managed as rangeland within the CRCC focus area within Butte, Glenn, Shasta, and Tehama counties (see attached map). Individual lands to be enrolled will be identified by the Program Administrator. The VLP becomes effective upon issuance of a Take authorization pursuant to FGC Section 2086 and will be in effect for 50 years.

Under the VLP, the California Cattlemen's Association as the Program Administrator will hold the incidental Take authorization and enroll individual landowners, lessees, or land managers (collectively referred to as Cooperators) into the VLP through individual Cooperative Agreements. For each enrolled property, the baseline conditions must be established prior to enrollment and shall be based upon a survey of the habitat on the property. Baseline evaluations will identify the species to be covered, estimate the population on the property of each Covered Species and/or estimate the acreage of suitable habitat, and include a description of the suitable habitat or other relevant habitat features utilized by the Covered Species on the property. In order to receive the protections regarding Take of state and federally-listed Covered Species specified in the VLP, a Cooperator must maintain on the enrolled property at least as many of the Covered Species as were present when the Cooperator entered into the program and/or the same amount and general quality of habitat.

The Department and FWS will work with individual landowners and the Program Administrator to determine which species will be covered under individual Cooperative Agreements. The VLP includes a list of beneficial activities for each Covered Species. Cooperative Agreements will contain a detailed description of the beneficial activities the landowner will undertake to enhance and manage habitat for Covered Species. The Department and FWS will review all Cooperative Agreements prior to the Program Administrator signing a Cooperative Agreement. The FWS will review Cooperative Agreements for federally-listed species and the Department will review Cooperative Agreements for State-listed, rare, and Species of Special Concern. Prior to approval, the Department and FWS will ensure that each Cooperative Agreement will minimize and mitigate for impacts to Covered Species and provide a net conservation benefit for Covered Species. Once it is determined that the Cooperative Agreement should result in a net conservation benefit for Covered Species, the Department and/or FWS will authorize the Program Administrator to sign the Cooperative Agreement. Upon signing a Cooperative Agreement, the Program Administrator will issue a Certificate of Inclusion to a Cooperator authorizing incidental Take of state and federally-listed Covered Species on the enrolled property for habitat enhancement, management, and routine

and ongoing ranching activities. The Cooperative Agreements developed pursuant to this VLP will be for a term of at least 10 years, and will be renewable.

Landowners may withdraw from the VLP and return the property to baseline. The Take of state and federally-listed Covered Species associated with returning a property to baseline is authorized through the VLP. To return the enrolled property to baseline conditions, a Cooperator must demonstrate that baseline conditions were maintained and that activities necessary to achieve a net conservation benefit were carried out for the duration of the Cooperative Agreement. The Cooperator must employ measures appropriate to avoid or minimize the level of Take, and no species or habitat shall be adversely affected until the Cooperator has given the Program Administrator or the Department/FWS prior notice of at least 90 days to provide an opportunity to relocate individual Covered Species.

The VLP also contains a provision to authorize Take of state and federally-listed Covered Species on lands adjacent to or within the immediate vicinity of enrolled properties (Neighboring Lands). It is the Department's and FWS' goal to minimize any concerns that neighboring landowners may have that the actions of enrolled landowners will inadvertently encumber them. A Neighboring Landowner may receive incidental Take authority provided: (1) s/he enters into a written agreement with the Program Administrator; (2) such written agreement specifies the baseline conditions on the Neighboring Land; and (3) activities resulting in such incidental Take are due to routine and ongoing agricultural activities and are consistent with maintaining the baseline conditions on the adjacent property.

The Program Administrator is responsible for monitoring species and habitat conditions on enrolled properties and reporting annually to the Department and FWS on the status of species and habitats and overall program operation.

Covered Species

The VLP proposes to enhance and manage habitat for twenty (20) sensitive species. The Applicant is requesting Take authorization for the following State threatened and endangered species:

- ***Giant garter snake (*Thamnophis gigas*) – CA Threatened, Federal Threatened***
- ***Swainson's hawk (*Buteo swainsoni*) – CA Threatened***
- ***Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – CA Endangered, Federal candidate***
- ***Indian Valley brodiaea (*Brodiaea coronaria *ssp.* rosea*) – CA Endangered***
- ***Boggs Lake hedge-hyssop (*Gratiola heterosepala*) – CA Endangered***
- ***Butte County meadowfoam (*Limnanthes floccosa *ssp*. californica*) – CA Endangered, Federal Endangered***
- ***Hairy Orcutt grass (*Orcuttia pilosa*) – CA Endangered, Federal Endangered***
- ***Slender Orcutt grass (*Orcuttia tenuis*) – CA Endangered, Federal***

Threatened

The VLP also covers management activities that will maintain and enhance habitat for the following additional rare, fully protected, federally-listed species, and Species of Special Concern:

- ***Bald eagle (*Haliaeetus leucocephalus*) – CA Endangered, Fully Protected***
- ***Greater sandhill crane (*Grus canadensis tabida*) – CA Threatened, Fully Protected***
- ***California black rail (*Laterallus jamaicensis coturniculus*) – CA Threatened, Fully Protected***
- ***Conservancy fairy shrimp (*Branchinecta conservatio*) – Federal Endangered***
- ***Vernal pool fairy shrimp (*Branchinecta lynchi*) – Federal Threatened***
- ***Vernal pool tadpole shrimp (*Lepidurus packardi*) – Federal Endangered***
- ***Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) – Federal Threatened***
- ***California red-legged frog (*Rana aurora draytonii*) – Species of Special Concern, Federal Threatened***
- ***Burrowing owl (*Athene cunicularia*) - Species of Special Concern***
- ***Tri-colored blackbird (*Agelaius tricolor*) - Species of Special Concern***
- ***Hoover's spurge (*Chamaesyce hooveri*) – Federal Threatened***
- ***Greene's tuctoria (*Tuctoria greenei*) – CA Rare, Federal Endangered***

Covered Activities

Each Cooperative Agreement shall specify the restoration and/or enhancement, and management practices to be carried out on the enrolled property to which it applies and a timetable for implementing those activities. Each enrolled property will present a unique set of site-specific considerations and challenges, depending on the type of habitat present (riparian, wetlands, vernal pools, grasslands, oak woodlands), and the type of activities that occur on the enrolled property. Typical activities will include native vegetation planting, irrigation of new plantings, managing grazing to improve habitat, erosion control, invasive species control, constructing new ponds, restoring microtopography, reducing pesticide use, and protecting existing habitat through fencing or rotational grazing. This list is not exhaustive, but serves as general guidance for the type of beneficial management practices that the Department and FWS anticipate Cooperators to implement under the Cooperative Agreements.

The following activities are considered by the Department and FWS to be routine and ongoing activities associated with ranching and agricultural activities that are covered under the VLP. These activities would be covered for incidental Take once one or more beneficial activities, such as those listed above, are implemented. This list of activities was developed in conjunction with NRCS, the California Farm Bureau Federation, and the California Cattlemen's Association. As with the list of beneficial activities, this list of

routine activities is not exhaustive and merely serves to provide guidance as to the type of activities that will be covered under the VLP. Routine ranching activities include the activities described below, and any others that a rancher may undertake to maintain a sustainable ranching operation. Activities that are not listed below will be analyzed by the Department during the review process for individual Cooperative Agreements to determine if the activity is appropriate for coverage under the VLP. The Department and FWS recognize that routine activities may vary from one ranching operation to another, and vary with changing environmental and economic conditions.

1. Livestock grazing according to normally acceptable and established levels of intensity in terms of the number of head of livestock per acre of rangeland.
2. Control of ground-burrowing rodents using poisonous grain according to the labeled directions and local, State, and federal regulations and guidelines. In areas where California red-legged frogs, giant garter snakes, or western burrowing owls exist, the use of toxic or suffocating gases is prohibited due to their non-target-specific mode of action.
3. Control and management of burrow complexes using discing and grading to destroy burrows and fill openings. This activity is not covered in areas within suitable upland habitat for giant garter snakes, western burrowing owls, or within 0.7 miles of known or potential California red-legged frog breeding habitat.
4. Routine management and maintenance of stock ponds and berms to maintain livestock water supplies. This activity does not include the intentional introduction of species into a stock pond that may prey on Covered Species, such as non-native fish and bullfrogs.
5. Routine maintenance or construction of fences for grazing management.
6. Planting, harvest, or rotation of non-irrigated forage crops as part of a rangeland livestock operation (excluding conversion of natural habitat to cultivation).
7. Maintenance and construction of livestock management facilities such as corrals, sheds, and other ranch outbuildings.
8. Repair, maintenance, or de-commissioning of unimproved ranch roads. This activity may include improvement, upgrade, or construction of new roads if approved by the Department and FWS.
9. Discing of fence lines or perimeter areas for fire prevention control and other fire prevention activities.
10. Placement of mineral supplements and supplemental feeding.
11. Control and management of noxious weeds.
12. Application of herbicide and fertilizer.
13. Riparian area maintenance (e.g., clearing debris, repairing erosion on banks).
14. Activities associated with irrigated pastures (e.g., maintenance of irrigation ditches and/or water diversions).
15. Movement of livestock.
16. Use of all-terrain and off-road vehicles in pasture for ranch management activities.
17. Use of horses and horse grazing.

18. Emergency activities (e.g., fighting floods or fires).

Probable Environmental Effects of the Project

The management activities specified in the Cooperative Agreements are expected to result in a net conservation benefit to the Covered Species by increasing the availability of suitable breeding, foraging, and dispersal habitat for the species. Expected beneficial outcomes for Covered Species include increasing the amount of suitable habitat; increasing population numbers; increasing habitat connectivity to aid in species movement; and protecting and managing the habitat for a minimum of ten years.

Although the VLP is expected to result in an overall net conservation benefit for the Covered Species, Covered Species may be adversely affected as a result of the VLP. A Cooperator may return the enrolled property to baseline at any time without penalties or disincentives for withdrawing from participation. The VLP requires the Cooperators to implement measures to avoid or minimize Take during actions to return to baseline, and notify the Department/FWS 90 days prior to initiating such actions. This allows the Department/FWS the opportunity to translocate species, thus reducing the level of incidental Take through the direct loss of individuals. However, the return to baseline habitat conditions could result in the loss of individual Covered Species and/or their habitat. The enhanced habitat conditions for the Covered Species that will result because of the VLP would not have occurred without the incentive provided to landowners in the form of the incidental Take protection. The enhanced habitat conditions that will exist for a minimum of 10 years is intended to offset and mitigate for the potential loss of species and their habitat should the Cooperator choose to return the enrolled property to baseline.

Routine and ongoing ranching activities on the enrolled properties and Neighboring Lands could also result in incidental Take through harm, harassment, injury, or death of Covered Species. Mitigation measures to avoid and reduce impacts associated with routine and ongoing ranching activities are incorporated into the VLP. Effects of these lawful activities are expected to be minor when compared to the beneficial effects listed above. FWS records indicate that few ranching landowners withdraw from Safe Harbor Agreements they have voluntarily entered into; thus, the benefits of the program are expected to continue beyond the initial 10 year term.

In summary, the VLP is expected to aid in the conservation and recovery of Covered Species by creating and enhancing suitable habitat, and managing habitat to reduce threats from non-native predators and ongoing ranching activities for a minimum of ten years. The VLP will also offer the opportunity to determine the effectiveness of active management for Covered Species, which will aid land managers in decisions regarding habitat enhancement for these species. Therefore, the VLP and the activities it covers, which are facilitated by the incidental Take authorized pursuant to FGC §2086, will provide a net conservation benefit and mitigate potential impacts to the Covered Species.

NOP Distribution List:

American Farmland Trust	Ducks Unlimited
American Land Conservancy	Endangered Species Coalition
Audubon California	Environmental Defense
Bureau of Land Management	Glenn County Agricultural Commissioner
Butte County Agricultural Commissioner	Glenn County Planning and Public Works Agency
Butte County Development Services Department	Glenn County Resource Conservation District
Butte County Resource Conservation District	Institute for Ecological Health
Butte Environmental Council	Jumping Frog Research Institute
CA Association of Resource Conservation Districts	National Wild Turkey Federation
CA Cattlemen's Association	Natural Resources Conservation Service
CA Chapter of the International Soil and Water Conservation Society	Northern California Regional Land Trust
CA Department of Conservation	Sacramento River Watershed Program
CA Department of Food and Agriculture	San Joaquin Raptor / Wildlife Rescue Center
CA Department of Forestry and Fire Protection	Shasta County Agricultural Commissioner
CA Department of Parks and Recreation	Shasta County Department of Resource Management
California Farm Bureau Federation	State Lands Commission
California Invasive Plant Council	State Water Resources Control Board
California Native Grasslands Association	Sustainable Conservation
California Native Pant Society	Tehama County Agricultural Commissioner
California Oak Foundation	Tehama County Planning Department
CA Office of Planning and Research	Tehama County Resource Conservation District
California Open Lands	The Nature Conservancy
California Rangeland Trust	The Xerces Society for Invertebrate Conservation
CA Regional Water Quality Control Board Central Valley Region	Trust for Public Land
CA Resources Agency	U.S. Fish and Wildlife Service
California Wildlife Foundation	U.S. Forest Service
Cal-Pac Section Society for Range Management	University of California
Community Alliance with Family Farmers	Western United Dairymen
Defenders of Wildlife	Wildlife Conservation Board
	Wildplaces

California Rangeland Conservation Coalition
Interagency Coordination Committee
Programmatic Safe Harbor/Voluntary Local Program
Notes from the Public Meeting

The public meeting for the Programmatic Safe Harbor/Voluntary Local Program to satisfy the requirements of CEQA was held on March 20, 2008 from 4-6 p.m. at the Butte County Library in Chico, California. A total of nine (9) people from the public attended the meeting and six (6) California Rangeland Conservation Coalition (CRCC) partners putting together the programmatic agreement were present.

The California Department of Fish and Game (Department) distributed a Notice of Preparation that included information on the public meeting to the State Clearinghouse and 60 potentially interested agencies and groups. A notice for the public meeting was published in the Chico Enterprise, Redding Record Searchlight, Willows Journal, and the Red Bluff Daily News prior to the meeting. In addition, notification of the meeting was provided through the California Rangeland Conservation Coalition e-mail distribution list (over 500 local, state and federal agencies; conservation organizations; and agricultural groups), California Cattlemen's Association e-mail distribution list (over 1,000 ranchers located throughout California, including the program area), and environmental conservation organization e-mail distribution list.

The following list of comments and questions were posed by members of the audience. Following each comment or question is a brief response.

COMMENTS/QUESTIONS

Adjacent Landowner Agreement:

A very important component of the program is the ability for adjacent landowner to partake in the program.

The Department and the CRCC partners putting together the programmatic agreement recognize this concern and will include the opportunity for adjacent landowners to receive coverage through the programmatic Safe Harbor Agreement/Voluntary Local Program (SHA/VLP).

What is the difference between Mitigated – Net Conservation Benefit:

These are the different standards of the two laws under which the program will be evaluated and approved. The Department must evaluate the effects of a Voluntary Local Program to assure that the impacts to state-listed species have been mitigated. The U.S. Fish and Wildlife Service (Service) must evaluate a Safe Harbor Agreement to assure that a net conservation benefit will be the result. As currently constructed, the beneficial activities included in the Programmatic SHA/VLP will meet these standards.

Baseline/Qualified Individual:

Concern that a qualified individual (biologist) will need to be employed with a regulatory agency.

A qualified individual (biologist) who is required under the programmatic agreement to

determine baseline on enrolling properties does not need to be employed with a regulatory agency (Department or Service). The Service and or the Department need to only approve a qualified individual to assess the property.

Concern regarding the cost of having an individual/biologist.
The Department or Service can provide a qualified individual. In addition the Natural Resources Conservation Service (NRCS) and/or the University of California Cooperative Extension may have qualified individuals on staff who can assess the property at no cost to the landowner.

Is the baseline for the species or the habitat?
The baseline assessment under this program focuses on habitat characteristics and acreage rather than counting individuals of the various species.

Projects:

What happens if I don't want to do any new projects, just keep what is there?
This situation would be individually considered. As long as there is a net conservation benefit and impacts are mitigated, the landowner may be eligible to participate and receive coverage under the program.

Costs to implement conservation projects are a big disincentive.
There currently are many cost-sharing programs available to landowners through the Service, Department, NRCS, and Wildlife Conservation Board. The CRCC is working to increase funds for projects that would align with the programmatic agreement. Additionally, the CRCC partners will work together to provide additional incentives for landowners enrolled or looking to enroll in the program - a competitive advantage within current conservation cost-share program scoring.

What about the financial investment put in with a public program or grant funds and then a landowner opts out of the SHA/VLP agreement?
Yes, a landowner may opt out of the SHA/VLP at any time. If the landowner has used federal funds on the project and then decided to take the property back to baseline, the agreement between the funder and the landowner would be in question. For example, a landowner participating in the NRCS Wildlife Habitat Incentives Program (WHIP) agrees to install a project. There is a contract between the landowner and NRCS that includes a time that the project must be maintained (life of the project). The landowner may opt out of the SHA/VLP, but is still under an agreement with NRCS for the WHIP project.

PowerPoint:

SLIDE: What's in a SHA/VLP?

Suggest replacing the word "salvage" with "relocate".

Routine and On-going Agricultural Activities:

Who will determine the set stocking rate under the normal acceptable practices.
A set stocking rate will not be determined through the programmatic agreement,

maintaining landowner flexibility to adjust for drought, species needs, etc. The landowner's Cooperative Agreement with the Program Administrator, California Cattlemen's Association, will describe the beneficial activities and routine and ongoing activities on the property.

Area:

Why is there a specific geographic region?

The portions of Butte, Glenn, Shasta and Tehama counties that are covered in the agreement provide habitat for a suite of species that co-exist with ranching. This SHA/VLP is envisioned as a pilot project. CRCC partners are interested in expanding this agreement or creating similar agreements throughout the CRCC focus area.

Why would a landowner want to participate in the program?

In exchange for voluntarily enhancing habitat under this program, a landowner would receive protection from harming or killing the covered listed species during routine and ongoing agricultural activities for their entire property, not just the habitat enhancement areas. Furthermore, partners to the CRCC are looking to establish funding sources for participants and creating a competitive advantage for landowners within existing cost-share wildlife habitat enhancement programs.

Can you compensate taking out habitat in one place on your property and install it on another place on your property?

The SHA/VLP only covers routine and ongoing agricultural activities. It does not cover land use changes. Conversion of natural habitat to farmland or farmland to housing is not considered to be a routine and ongoing agricultural activity.

Have you considered including bank swallow? What about the adobe lily?

The CRCC Interagency group considered a long list of species that could be potentially covered by the Programmatic Agreement. Many species were dropped from consideration for a variety of reasons such as insufficient knowledge about beneficial activities, unlikelihood of occurring on rangelands in the program area, and if the species was not listed by either the Department or Service.

Is this agreement for all landowners?

The program is focused only on restoring and enhancing habitat for listed and sensitive species that exist on non-federal rangelands, particularly in the foothills.

Would enrolling in the program jeopardize land enrolled under the Williamson Act?

[The agency representatives at the meeting were not prepared to answer this question. Habitat enhancement on ranchlands does not conflict with Williamson Act contracts.]

Concern that a landowner will have to have permission to opt out.

The SHA/VLP Programmatic Agreement specifically allows landowners to withdraw from the program with 90 days notice to the Program Administrator, Department, and Service. The notice allows the agencies an opportunity to relocate any listed species that would be impacted when the property is returned to baseline. The landowner must

maintain the baseline habitat quantity and general quality.

COMMENT LETTERS RECEIVED

Two people provided comments at the March 20th public scoping meeting, which are included in the meeting notes above. One email was received, acknowledging their receipt of the Public Notice, but no comments were made regarding the proposed program.

APPENDIX C CRCC Programmatic SHA/VLP

[double click below to open this linked document]

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APPENDIX D Species Occurrences by County

Appendix D-1 Butte County

Appendix D-2 Glenn County

Appendix D-3 Shasta County

Appendix D-4 Tehama County

APPENDIX D-1 Butte County
Covered Species Occurrences
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status*	CWHR Habitat	Number of Occurrences
Burrowing owl	SSC	Annual Grassland	3
		Cropland	4
		Irrigated Row and Field Crops	1
		Valley Oak Woodland	1
Burrowing owl Total			9
Butte County meadowfoam	FE, CE, 1B.1	Annual Grassland	15
		Blue Oak-Foothill Pine	1
		Cropland	1
		Irrigated Row and Field Crops	1
		Urban	3
		Valley-Foothill Riparian	1
Butte County meadowfoam Total			22
Conservancy fairy shrimp	FE	Annual Grassland	2
		Cropland	1
Conservancy fairy shrimp Total			3
Giant garter snake	FT, CT	Annual Grassland	1
		Cropland	2
		Freshwater Emergent Wetlands	5
		Irrigated Row and Field Crops	22
		Orchard and Vineyard	1
		Irrigated Row and Field Crops	1
Giant garter snake Total			32
Greene's tuctoria	FE, CR, 1B.1	Annual Grassland	3
		Irrigated Row and Field Crops	1
Greene's tuctoria Total			4
Hairy orcutt grass	FE, CE, 1B.1	Annual Grassland	1
Hairy orcutt grass Total			1
Hoover's spurge	FT,1B.2	Annual Grassland	4
Hoover's spurge Total			4
Slender orcutt grass	FT CE, 1B.1	Annual Grassland	3
		Orchard and Vineyard	1
Slender orcutt grass Total			4
Swainson's hawk	CT	Annual Grassland	3
		Cropland	5
		Freshwater Emergent Wetlands	3
		Irrigated Row and Field Crops	7
		Orchard and Vineyard	1
		Valley-Foothill Riparian	11
Swainson's hawk Total			30
Tricolored blackbird	SSC	Annual Grassland	3
		Cropland	4
		Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	2
		Valley-Foothill Riparian	1

Tricolored blackbird Total			11
Valley elderberry longhorn beetle	FT	Annual Grassland	2
		Cropland	6
		Irrigated Row and Field Crops	2
		Orchard and Vineyard	2
		Urban	2
		Valley-Foothill Riparian	10
Valley elderberry longhorn beetle Total			22
Vernal pool fairy shrimp	FT	Annual Grassland	13
		Blue Oak-Foothill Pine	1
		Cropland	1
		Irrigated Row and Field Crops	2
		Orchard and Vineyard	1
		Urban	1
Vernal pool fairy shrimp Total			19
Vernal pool tadpole shrimp	FE	Annual Grassland	16
		Blue Oak-Foothill Pine	1
		Cropland	1
		Irrigated Row and Field Crops	2
		Urban	2
Vernal pool tadpole shrimp Total			22
Western yellow-billed cuckoo	FC, CE	Annual Grassland	1
		Cropland	4
		Freshwater Emergent Wetlands	3
		Irrigated Row and Field Crops	4
		Orchard and Vineyard	3
		Valley-Foothill Riparian	12
Western yellow-billed cuckoo Total			27
Grand Total Occurrences			216

* Key to status: FE – Federal endangered, FT – Federal threatened, FC – Federal candidate, , FD – Federal delisted, CE – California endangered, CT – California threatened, CR – California rare, SSC - California Species of Special Concern, numbers – CNPS listing.

Butte County Sensitive Species Occurrences (Non-Covered)
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status	CWHR Habitat	Number of Occurrences
Adobe-lily	1B.2	Annual Grassland	6
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	2
		Cropland	2
		Irrigated Row and Field Crops	2
		Mixed Conifer	1
		Orchard and Vineyard	3
		Urban	1
		Valley-Foothill Riparian	1
Adobe-lily Total			19
Ahart's dwarf rush	1B.2	Annual Grassland	1
		Blue Oak-Foothill Pine	1
		Cropland	3
		Urban	1
		Valley-Foothill Riparian	1
Ahart's dwarf rush Total			7
Ahart's paronychia	1B.1	Annual Grassland	4
Ahart's paronychia Total			4
American badger	SSC	Annual Grassland	1
		Irrigated Row and Field Crops	1
American badger Total			2
American peregrine falcon	FD, CE, CFP	Blue Oak-Foothill Pine	2
American peregrine falcon Total			2
Bald eagle	FD, CE, CFP	Annual Grassland	1
		Blue Oak-Foothill Pine	2
		Urban	2
Bald eagle Total			5
Bank swallow	CT	Cropland	7
		Irrigated Row and Field Crops	1
		Orchard and Vineyard	11
		Valley-Foothill Riparian	22
Bank swallow Total			41
California black rail	CT, CFP	Irrigated Row and Field Crops	1
California black rail Total			1
Brandegee's clarkia	1B.2	Blue Oak-Foothill Pine	7
Brandegee's clarkia Total			7
Brazilian watermeal	2.3	Annual Grassland	1
		Cropland	1
		Freshwater Emergent Wetlands	2
		Orchard and Vineyard	1
		Valley-Foothill Riparian	1
Brazilian watermeal Total			6
Brown fox sedge	2.2	Blue Oak-Foothill Pine	2
		Cropland	1
		Lacustrine	2

		Orchard and Vineyard	1
		Valley-Foothill Riparian	3
Brown fox sedge Total			9
Butte County checkerbloom	1B.2	Annual Grassland	6
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	19
		Irrigated Row and Field Crops	1
		Orchard and Vineyard	1
		Urban	2
Butte County checkerbloom Total			30
Butte County fritillary	3.2	Blue Oak-Foothill Pine	5
		Irrigated Row and Field Crops	1
		Orchard and Vineyard	1
		Urban	3
Butte County fritillary Total			10
Butte County golden clover	1B.2	Annual Grassland	9
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	2
		Irrigated Row and Field Crops	1
Butte County golden clover Total			13
Butte County morning-glory	1B.2	Blue Oak-Foothill Pine	1
		Urban	4
Butte County morning-glory Total			5
California beaked-rush	1B.1	Blue Oak-Foothill Pine	4
California beaked-rush Total			4
California satintail	2.1	Blue Oak-Foothill Pine	1
California satintail Total			1
California tiger salamander	FT, SSC	Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	1
California tiger salamander Total			2
Coast (California) horned lizard	SSC	Annual Grassland	1
		Blue Oak-Foothill Pine	1
		Urban	1
Coast (California) horned lizard Total			3
Ferris' milk-vetch	1B.1	Cropland	1
		Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	6
		Orchard and Vineyard	1
Ferris' milk-vetch Total			9
Flagella-like atractylocarpus	2.2	Blue Oak-Foothill Pine	1
Flagella-like atractylocarpus Total			1
Greater sandhill crane	CT, CFP	Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	3
		Orchard and Vineyard	1
		Urban	1
Greater sandhill crane Total			6

Heartscale	1B.2	Freshwater Emergent Wetlands	2
Heartscale Total			2
Lesser saltscale	1B.1	Freshwater Emergent Wetlands	2
Lesser saltscale Total			2
Lewis Rose's ragwort	1B.2	Blue Oak-Foothill Pine	2
		Urban	3
Lewis Rose's ragwort Total			5
Loggerhead shrike	SSC	Annual Grassland	1
Loggerhead shrike Total			1
Merlin	SSC	Irrigated Row and Field Crops	1
Merlin Total			1
Northern harrier	SSC	Irrigated Row and Field Crops	2
Northern harrier Total			2
Northwestern pond turtle	SSC	Annual Grassland	2
		Blue Oak-Foothill Pine	1
		Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	2
		Lacustrine	1
Northwestern pond turtle Total			7
Osprey	SSC	Blue Oak-Foothill Pine	2
		Orchard and Vineyard	1
		Valley-Foothill Riparian	5
Osprey Total			8
Pallid bat	SSC	Orchard and Vineyard	1
		Urban	1
		Valley Oak Woodland	1
Pallid bat Total			3
Pappose tarplant	1B.2	Freshwater Emergent Wetlands	1
Pappose tarplant Total			1
Pink creamsacs	1B.2	Annual Grassland	2
		Blue Oak-Foothill Pine	2
		Cropland	1
		Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	2
		Lacustrine	1
		Urban	2
		Valley-Foothill Riparian	1
Pink creamsacs Total			12
Recurved larkspur	1B.2	Irrigated Row and Field Crops	1
Recurved larkspur Total			1
Red Bluff dwarf rush	1B.1	Annual Grassland	7
		Blue Oak-Foothill Pine	5
		Mixed Conifer	1
Red Bluff dwarf rush Total			13
Round-leaved filaree	1B.1	Irrigated Row and Field Crops	1
Round-leaved filaree Total			1
Sanford's arrowhead	1B.2	Annual Grassland	3
		Orchard and Vineyard	1
Sanford's arrowhead Total			4
Spring-run chinook salmon	FT, CT	Annual Grassland	1
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	2

		Urban	1
		Valley-Foothill Riparian	1
Spring-run chinook salmon Total			6
Subtle orache	1B.2	Freshwater Emergent Wetlands	1
Subtle orache Total			1
Veiny monardella	1B.1	Annual Grassland	1
		Blue Oak-Foothill Pine	2
Veiny monardella Total			3
Western mastiff bat	SSC	Annual Grassland	3
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	3
		Irrigated Row and Field Crops	1
		Orchard and Vineyard	3
		Urban	1
		Valley-Foothill Riparian	2
Western mastiff bat Total			14
Western pond turtle	SSC	Cropland	1
		Urban	1
Western pond turtle Total			2
Western spadefoot	SSC	Annual Grassland	3
		Blue Oak-Foothill Pine	1
Western spadefoot Total			4
White-stemmed clarkia	1B.2	Blue Oak-Foothill Pine	9
		Lacustrine	2
White-stemmed clarkia Total			11
Woolly rose-mallow	2.2	Annual Grassland	3
		Blue Oak-Foothill Pine	1
		Cropland	3
		Freshwater Emergent Wetlands	8
		Irrigated Row and Field Crops	14
		Orchard and Vineyard	1
		Valley-Foothill Riparian	2
Woolly rose-mallow Total			32
Yellow warbler	SSC	Annual Grassland	1
Yellow warbler Total			1
Grand Total Occurrences			324

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APPENDIX D-2 Glenn County
Covered Species Occurrences
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status*	CWHR Habitat	Number of Occurrences
Burrowing owl	SSC	Annual Grassland	1
		Irrigated Row and Field Crops	3
Burrowing owl Total			4
Conservancy fairy shrimp	FE	Freshwater Emergent Wetlands	1
Conservancy fairy shrimp Total			1
Giant garter snake	FT, CT	Irrigated Row and Field Crops	7
		Freshwater Emergent Wetlands	1
Giant garter snake Total			8
Hairy orcutt grass	FE, CE, 1B.1	Freshwater Emergent Wetlands	6
Hairy orcutt grass Total			6
Hoover's spurge	FT,1B.2	Freshwater Emergent Wetlands	3
Hoover's spurge Total			3
Indian Valley brodiaea	CE, 1B.1	Blue Oak-Foothill Pine	1
Indian Valley brodiaea Total			1
Swainson's hawk	CT	Annual Grassland	1
		Barren	1
		Cropland	2
		Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	22
		Orchard and Vineyard	3
		Valley-Foothill Riparian	11
Swainson's hawk Total			41
Tricolored blackbird	SSC	Freshwater Emergent Wetlands	5
		Irrigated Row and Field Crops	15
		Lacustrine	2
		Orchard and Vineyard	1
		Valley-Foothill Riparian	1
Tricolored blackbird Total			24
Valley elderberry longhorn beetle	FT	Cropland	1
		Irrigated Row and Field Crops	7
		Orchard and Vineyard	2
		Valley-Foothill Riparian	9
Valley elderberry longhorn beetle Total			19
Vernal pool fairy shrimp	FT	Annual Grassland	1
		Barren	1
		Irrigated Row and Field Crops	1
Vernal pool fairy shrimp Total			3
Vernal pool tadpole shrimp	FE	Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	1
		Lacustrine	1
Vernal pool tadpole shrimp Total			3
Western yellow-billed cuckoo	FC, CE	Cropland	3

		Irrigated Row and Field Crops	10
		Orchard and Vineyard	7
		Valley-Foothill Riparian	18
Western yellow-billed cuckoo Total			38
Grand Total Occurrences			151

* Key to status: FE – Federal endangered, FT – Federal threatened, FC – Federal candidate, , FD – Federal delisted, CE – California endangered, CT – California threatened, CR – California rare, SSC - California Species of Special Concern, numbers – CNPS listing.

Glenn County Sensitive Species Occurrences (Non-Covered)
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status	CWHR Habitat	Number of Occurrences
Adobe-lily	1B.2	Blue Oak Woodland	7
		Blue Oak-Foothill Pine	2
		Lacustrine	2
		Urban	1
		Valley Oak Woodland	7
Adobe-lily Total			19
American badger	SSC	Annual Grassland	1
		Barren	1
		Irrigated Row and Field Crops	2
American badger Total			4
Baker's navarretia	1B.1	Irrigated Row and Field Crops	1
		Urban	1
Baker's navarretia Total			2
Bald eagle	FD, CE, FP	Blue Oak Woodland	1
		Lacustrine	1
Bald eagle Total			2
Bank swallow	CT	Cropland	1
		Irrigated Row and Field Crops	10
		Orchard and Vineyard	3
		Valley-Foothill Riparian	23
Bank swallow Total			37
Brandegee's eriastrum	1B.2	Blue Oak Woodland	1
Brandegee's eriastrum Total			1
Brazilian watermeal	2.3	Cropland	1
		Irrigated Row and Field Crops	1
		Orchard and Vineyard	1
		Valley-Foothill Riparian	1
Brazilian watermeal Total			4
Brittlescale	1B.2	Freshwater Emergent Wetlands	9
		Irrigated Row and Field Crops	2
		Urban	1
		Valley Oak Woodland	1
Brittlescale Total			13
California tiger salamander	FT, SSC	Irrigated Row and Field Crops	1
California tiger salamander Total			1
Caper-fruited tropidocarpum	1B.1	Irrigated Row and Field Crops	1
		Urban	1
Caper-fruited tropidocarpum Total			2
Colusa grass	FT, CE, 1B.1	Freshwater Emergent Wetlands	1
Colusa grass Total			1
Colusa layia	1B.2	Blue Oak Woodland	1
Colusa layia Total			1
Dimorphic snapdragon	4.3	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	3

		Valley Oak Woodland	3
Dimorphic snapdragon Total			7
Drymaria-like western flax	1B.2	Blue Oak-Foothill Pine	1
Drymaria-like western flax Total			1
Ferris' milk-vetch	1B.1	Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	1
Ferris' milk-vetch Total			2
Foothill yellow-legged frog	SSC	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	2
Foothill yellow-legged frog Total			3
Green jewel-flower	1B.2	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
Green jewel-flower Total			2
Heartscale	1B.2	Freshwater Emergent Wetlands	5
		Irrigated Row and Field Crops	1
Heartscale Total			6
Heckard's pepper-grass	1B.2	Freshwater Emergent Wetlands	3
Heckard's pepper-grass Total			3
Jepson's milk-vetch	1B.2	Valley Oak Woodland	2
Jepson's milk-vetch Total			2
Northwestern pond turtle	SSC	Blue Oak-Foothill Pine	1
Northwestern pond turtle Total			1
Osprey	SSC	Irrigated Row and Field Crops	1
		Orchard and Vineyard	3
		Valley-Foothill Riparian	4
Osprey Total			8
Palmate-bracted bird's-beak	FE, CE, 1B.1	Freshwater Emergent Wetlands	2
palmate-bracted bird's-beak Total			2
Pappose tarplant	1B.2	Valley Oak Woodland	1
Pappose tarplant Total			1
Pink creamsacs	1B.2	Irrigated Row and Field Crops	1
		Valley Oak Woodland	1
Pink creamsacs Total			2
Recurved larkspur	1B.2	Irrigated Row and Field Crops	1
		Urban	1
Recurved larkspur Total			2
Round-leaved filaree	1B.1	Irrigated Row and Field Crops	1
		Urban	1
Round-leaved filaree Total			2
San Joaquin spearscale	1B.2	Blue Oak-Foothill Pine	1
		Freshwater Emergent Wetlands	2
		Irrigated Row and Field Crops	2
		Urban	1
		Valley Oak Woodland	2
San Joaquin spearscale Total			8
Stony Creek spurge	1B.2	Barren	1
		Blue Oak Woodland	5
		Blue Oak-Foothill Pine	1
		Cropland	1
		Irrigated Row and Field Crops	1

		Valley Oak Woodland	3
Stony Creek spurge Total			12
Vernal pool smallscale	1B.2	Freshwater Emergent Wetlands	11
Vernal pool smallscale Total			11
Western mastiff bat	SSC	Valley-Foothill Riparian	2
Western mastiff bat Total			2
Western spadefoot	SSC	Valley Oak Woodland	1
Western spadefoot Total			1
Woolly rose-mallow	2.2	Freshwater Emergent Wetlands	1
		Irrigated Row and Field Crops	13
Woolly rose-mallow Total			14
Grand Total Occurrences			179

* Key to status: FE – Federal endangered, FT – Federal threatened, FC – Federal candidate, , FD – Federal delisted, CE – California endangered, CT – California threatened, CR – California rare, CFP – California fully protected, SSC - California Species of Special Concern, numbers – CNPS listing.

APPENDIX D-3 Shasta County
Covered Species Occurrences
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status*	CWHR Habitat	Number of Occurrences
Boggs Lake hedge-hyssop	CE, 1B.2	Annual Grassland	4
Boggs Lake hedge-hyssop Total			4
Slender orcutt grass	FT CE, 1B.1	Blue Oak Woodland	2
		Blue Oak-Foothill Pine	8
		Pasture	1
		Urban	1
		Valley-Foothill Riparian	1
Slender orcutt grass Total			13
Tricolored blackbird	SSC	Blue Oak-Foothill Pine	1
		Dryland Grain Crops	3
		Lacustrine	2
		Pasture	1
		Urban	1
Tricolored blackbird Total			8
Valley elderberry longhorn beetle	FT	Blue Oak Woodland	1
		Cropland	1
		Urban	2
Valley elderberry longhorn beetle Total			4
Vernal pool fairy shrimp	FT	Annual Grassland	1
		Blue Oak Woodland	2
		Blue Oak-Foothill Pine	4
		Urban	1
Vernal pool fairy shrimp Total			8
Vernal pool tadpole shrimp	FE	Annual Grassland	1
		Blue Oak Woodland	2
		Blue Oak-Foothill Pine	15
		Cropland	1
		Urban	2
Vernal pool tadpole shrimp Total			21
Grand Total Occurrences			58

* Key to status: FE – Federal endangered, FT – Federal threatened, FC – Federal candidate, FD – Federal delisted, CE – California endangered, CT – California threatened, CR – California rare, SSC - California Species of Special Concern, numbers – CNPS listing.

Shasta County Sensitive Species Occurrences (Non-Covered)
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status	CWHR Habitat	Number of Occurrences
Ahart's paronychia	1B.1	Annual Grassland	2
		Blue Oak Woodland	7
		Blue Oak-Foothill Pine	2
Ahart's paronychia Total			11
American badger	SSC	Annual Grassland	1
		Pasture	2
American badger Total			3
Bald eagle	FD, CE, CFP	Blue Oak Woodland	3
		Blue Oak-Foothill Pine	9
		Pasture	1
		Valley-Foothill Riparian	2
Bald eagle Total			15
Bank swallow	CT	Annual Grassland	1
		Blue Oak Woodland	3
		Cropland	1
		Pasture	3
		Perennial Grassland	2
		Urban	1
		Valley-Foothill Riparian	2
Bank swallow Total			13
Bigeye marbled sculpin	SSC	Annual Grassland	1
		Dryland Grain Crops	1
		Pasture	3
		Perennial Grassland	3
Bigeye marbled sculpin Total			8
Black swift	SSC	Blue Oak-Foothill Pine	1
Black swift Total			1
Brandegee's eriastrum	1B.2	Blue Oak-Foothill Pine	3
Brandegee's eriastrum Total			3
Brown fox sedge	2.2	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
		Cropland	1
		Urban	3
		Valley-Foothill Riparian	1
Brown fox sedge Total			7
Butte County fritillary	3.2	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	9
Butte County fritillary Total			10
California wolverine	CT	Annual Grassland	1
		Blue Oak-Foothill Pine	1
		Pasture	1
California wolverine Total			3
Chinook salmon winter-run	FE, CE	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
		Cropland	1
		Urban	1

		Valley-Foothill Riparian	1
Chinook salmon winter-run Total			5
English Peak greenbriar	1B.3	Blue Oak-Foothill Pine	1
		Pasture	1
English Peak greenbriar Total			2
English sundew	2.3	Blue Oak-Foothill Pine	1
		Pasture	1
English sundew Total			2
Foothill yellow-legged frog	SSC	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	12
		Cropland	2
Foothill yellow-legged frog Total			15
Greater sandhill crane	CT, CFP	Blue Oak-Foothill Pine	1
		Dryland Grain Crops	3
		Pasture	9
Greater sandhill crane Total			13
Hardhead	SSC	Annual Grassland	1
		Blue Oak-Foothill Pine	2
		Perennial Grassland	2
Hardhead Total			5
Henderson's bent grass	3.2	Blue Oak-Foothill Pine	4
Henderson's bent grass Total			4
Howell's alkali grass	1B.1	Blue Oak-Foothill Pine	1
Howell's alkali grass Total			1
Howell's thelypodium	1B.2	Pasture	1
Howell's thelypodium Total			1
Legenere	1B.1	Blue Oak-Foothill Pine	3
Legenere Total			3
Long-leaved starwort	2.2	Blue Oak-Foothill Pine	1
		Pasture	1
Long-leaved starwort Total			2
Marsh skullcap	2.2	Dryland Grain Crops	3
		Pasture	1
		Perennial Grassland	1
Marsh skullcap Total			5
Niles' harmonia	1B.1	Blue Oak-Foothill Pine	1
Niles' harmonia Total			1
Northern clarkia	1B.3	Blue Oak-Foothill Pine	1
Northern clarkia Total			1
Northern goshawk	SSC	Blue Oak-Foothill Pine	2
northern goshawk Total			2
Northwestern pond turtle	SSC	Annual Grassland	1
		Blue Oak-Foothill Pine	6
		Cropland	1
		Lacustrine	7
		Pasture	1
		Urban	1
		Valley Oak Woodland	1
Northwestern pond turtle Total			18
Oregon fireweed		Blue Oak-Foothill Pine	1

Oregon fireweed Total			1
Osprey	SSC	Blue Oak Woodland	3
		Blue Oak-Foothill Pine	5
		Cropland	2
		Urban	2
		Valley-Foothill Riparian	2
Osprey Total			14
Oval-leaved viburnum	2.3	Blue Oak-Foothill Pine	1
		Chamise-Redshank Chaparral	1
Oval-leaved viburnum Total			2
Pacific fisher	FC	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	9
		Chamise-Redshank Chaparral	1
Pacific fisher Total			11
Pallid bat	SSC	Annual Grassland	1
		Blue Oak-Foothill Pine	2
Pallid bat Total			3
Pink creamsacs	1B.2	Blue Oak-Foothill Pine	1
Pink creamsacs Total			1
Pit roach	SSC	Blue Oak-Foothill Pine	2
Pit roach Total			2
Profuse-flowered pogogyne	1B.2	Annual Grassland	1
		Dryland Grain Crops	1
Profuse-flowered pogogyne Total			2
Red Bluff dwarf rush	1B.1	Annual Grassland	1
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	15
		Urban	3
Red Bluff dwarf rush Total			20
Rough sculpin	CT	Annual Grassland	1
		Blue Oak-Foothill Pine	1
		Dryland Grain Crops	1
		Pasture	3
		Perennial Grassland	2
Rough sculpin			8
Shasta clarkia	1B.1	Blue Oak-Foothill Pine	1
Shasta clarkia Total			1
Shasta crayfish	FE, CE	Dryland Grain Crops	4
		Lacustrine	4
		Pasture	4
		Perennial Grassland	1
Shasta crayfish Total			13
Shasta salamander	CT	Blue Oak-Foothill Pine	11
Shasta salamander Total			11
Shasta snow-wreath	1B.2	Blue Oak-Foothill Pine	3
Shasta snow-wreath			3
Silky cryptantha	1B.2	Annual Grassland	1
		Blue Oak Woodland	7
		Blue Oak-Foothill Pine	9
		Cropland	2
		Urban	2

		Valley Oak Woodland	1
		Valley-Foothill Riparian	1
Silky cryptantha Total			23
Slender silver moss	2.2	Blue Oak-Foothill Pine	1
Slender silver moss Total			1
Spotted bat	SSC	Blue Oak-Foothill Pine	1
Spotted bat Total			1
Spring-run chinook salmon	FT, CT	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	4
		Cropland	1
Spring-run chinook salmon Total			6
Townsend's big-eared bat	SSC	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
Townsend's big-eared bat			2
Western tailed frog	SSC	Blue Oak-Foothill Pine	1
Western tailed frog			1
Grand Total Occurrences			277

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APPENDIX D-4 Tehama County
Covered Species Occurrences
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status*	CWHR Habitat	Number of Occurrences
Boggs Lake hedge-hyssop	CE, 1B.2	Annual Grassland	8
		Blue Oak Woodland	9
		Blue Oak-Foothill Pine	1
		Cropland	1
Boggs Lake hedge-hyssop Total			19
Burrowing owl	SSC	Annual Grassland	8
		Cropland	4
Burrowing owl Total			12
California red-legged frog		Blue Oak Woodland	1
California red-legged frog Total			1
Conservancy fairy shrimp	FE	Annual Grassland	4
		Cropland	1
Conservancy fairy shrimp Total			5
Greene's tuctoria	FE, CR, 1B.1	Annual Grassland	13
		Orchard and Vineyard	1
Greene's tuctoria Total			14
Hairy orcutt grass	FE, CE, 1B.1	Annual Grassland	10
Hairy orcutt grass Total			10
Hoover's spurge	FT,1B.2	Annual Grassland	12
		Cropland	1
		Orchard and Vineyard	1
		Valley-Foothill Riparian	2
Hoover's spurge Total			16
Indian Valley brodiaea	CE, 1B.1	Montane Chaparral	1
Indian Valley brodiaea Total			1
Slender orcutt grass	FT CE, 1B.1	Annual Grassland	9
		Blue Oak Woodland	17
		Blue Oak-Foothill Pine	5
		Orchard and Vineyard	1
		Valley-Foothill Riparian	1
Slender orcutt grass Total			33
Swainson's hawk	CT	Barren	1
		Cropland	8
		Orchard and Vineyard	2
		Valley-Foothill Riparian	1
Swainson's hawk Total			12
Tricolored blackbird	SSC	Annual Grassland	2
		Blue Oak Woodland	2
		Cropland	6
Tricolored blackbird Total			10
Valley elderberry longhorn beetle	FT	Annual Grassland	1
		Barren	1

		Blue Oak Woodland	2
		Blue Oak-Foothill Pine	4
		Cropland	6
		Irrigated Row and Field Crops	1
		Orchard and Vineyard	8
		Urban	1
		Valley Oak Woodland	2
		Valley-Foothill Riparian	14
Valley elderberry longhorn beetle Total			40
Vernal pool fairy shrimp	FT	Annual Grassland	17
		Barren	1
		Blue Oak Woodland	1
		Cropland	6
		Orchard and Vineyard	1
Vernal pool fairy shrimp Total			26
Vernal pool tadpole shrimp	FE	Annual Grassland	18
		Blue Oak Woodland	5
		Cropland	3
		Valley-Foothill Riparian	1
Vernal pool tadpole shrimp Total			27
Western yellow-billed cuckoo	FC, CE	Cropland	5
		Orchard and Vineyard	3
		Valley-Foothill Riparian	7
Western yellow-billed cuckoo Total			15
Grand Total Occurrences			241

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Tehama County Sensitive Species Occurrences (Non-Covered)
Approximately within the CRCC Boundary
California Natural Diversity Data Base

Species	Status	CWHR Habitat	Number of Occurrences
Adobe-lily	1B.2	Annual Grassland	8
		Blue Oak Woodland	1
		Cropland	1
		Mixed Conifer	1
		Valley Oak Woodland	1
Adobe-lily Total			12
Ahart's dwarf rush	1B.2	Annual Grassland	1
Ahart's dwarf rush Total			1
Ahart's paronychia	1B.1	Annual Grassland	18
		Blue Oak Woodland	24
		Blue Oak-Foothill Pine	7
		Cropland	4
		Valley-Foothill Riparian	1
Ahart's paronychia Total			54
American peregrine falcon	FD, CE, CFP	Blue Oak-Foothill Pine	1
American peregrine falcon Total			1
Baker's globe mallow	4.2	Blue Oak-Foothill Pine	1
Baker's globe mallow Total			1
Baker's navarretia	1B.1	Annual Grassland	1
		Cropland	1
Baker's navarretia Total			2
Bald eagle	FD, CE, CFP	Blue Oak Woodland	2
		Blue Oak-Foothill Pine	2
		Urban	1
		Valley-Foothill Riparian	2
Bald eagle Total			7
Bank swallow	CT	Annual Grassland	1
		Barren	1
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
		Cropland	9
		Orchard and Vineyard	8
		Valley-Foothill Riparian	20
Bank swallow Total			41
Big-scale balsamroot		Blue Oak-Foothill Pine	1
Big-scale balsamroot Total			1
Brandegee's eriastrum	1B.2	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	11
		Chamise-Redshank Chaparral	9
Brandegee's eriastrum Total			21
Brown fox sedge	2.2	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
		Valley-Foothill Riparian	2
Brown fox sedge Total			4
Brownish beaked-rush	2.2	Blue Oak Woodland	1

		Blue Oak-Foothill Pine	1
Brownish beaked-rush Total			2
Butte County fritillary	3.2	Blue Oak-Foothill Pine	1
		Mixed Conifer	1
		Ponderosa Pine	3
		Sierran Mixed Conifer	4
Butte County fritillary Total			9
Butte County morning-glory	1B.2	Blue Oak-Foothill Pine	1
Butte County morning-glory Total			1
California satintail	2.1	Blue Oak-Foothill Pine	1
California satintail Total			1
Chinook salmon winter-run	FE, CE	Annual Grassland	1
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
		Cropland	1
		Orchard and Vineyard	1
		Urban	1
		Valley-Foothill Riparian	1
Chinook salmon winter-run Total			7
Colusa layia	1B.2	Blue Oak-Foothill Pine	1
Colusa layia Total			1
Dimorphic snapdragon	4.3	Blue Oak Woodland	3
		Blue Oak-Foothill Pine	6
		Chamise-Redshank Chaparral	4
		Valley Oak Woodland	2
Dimorphic snapdragon Total			35
Dwarf downingia	2.2	Annual Grassland	12
		Cropland	3
		Urban	1
Dwarf downingia Total			16
Dwarf soaproot	1B.2	Blue Oak-Foothill Pine	1
		Mixed Conifer	8
		Ponderosa Pine	4
Dwarf soaproot Total			13
Foothill yellow-legged frog	SSC	Blue Oak-Foothill Pine	6
		Chamise-Redshank Chaparral	1
		Montane Chaparral	1
		Valley-Foothill Riparian	1
Foothill yellow-legged frog Total			9
Hall's rupertia	1B.2	Blue Oak-Foothill Pine	1
Hall's rupertia Total			1
Henderson's bent grass	3.2	Annual Grassland	1
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
Henderson's bent grass Total			3
Humboldt marten	SSC	Chamise-Redshank Chaparral	1
Humboldt marten Total			1
Jepson's milk-vetch	1B.2	Blue Oak Woodland	2
		Blue Oak-Foothill Pine	2
		Chamise-Redshank Chaparral	1

		Valley Oak Woodland	2
Jepson's milk-vetch Total			7
Legenere	1B.1	Annual Grassland	4
		Blue Oak Woodland	1
		Cropland	1
Legenere Total			6
Mt. Tedoc leptosiphon	1B.3	Blue Oak-Foothill Pine	1
Mt. Tedoc leptosiphon Total			1
Norris' beard moss	2.2	Annual Grassland	1
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
Norris' beard moss Total			3
Northwestern pond turtle	SSC	Annual Grassland	1
		Blue Oak Woodland	2
		Blue Oak-Foothill Pine	4
		Chamise-Redshank Chaparral	1
		Cropland	2
		Orchard and Vineyard	1
		Valley-Foothill Riparian	3
Northwestern pond turtle Total			14
Osprey	SSC	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
		Cropland	5
		Orchard and Vineyard	1
		Urban	1
		Valley-Foothill Riparian	11
Osprey Total			20
Pallid bat	SSC	Annual Grassland	2
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	2
		Cropland	2
		Orchard and Vineyard	1
		Urban	2
		Valley-Foothill Riparian	1
Pallid bat Total			11
Prairie falcon	SSC	Blue Oak Woodland	1
		Blue Oak-Foothill Pine	7
		Mixed Conifer	1
		Montane Chaparral	2
		Ponderosa Pine	1
		Valley Oak Woodland	3
Prairie falcon Total			15
Red Bluff dwarf rush	1B.1	Annual Grassland	5
		Blue Oak Woodland	2
		Blue Oak-Foothill Pine	2
		Cropland	3
		Urban	1
Red Bluff dwarf rush Total			13
Red-flowered bird's-foot-trefoil	1B.1	Annual Grassland	1
		Blue Oak Woodland	1
Red-flowered bird's-foot-trefoil			2

Total			
Round-leaved filaree	1B.1	Annual Grassland	1
Round-leaved filaree Total			1
Sanford's arrowhead	1B.2	Annual Grassland	1
		Blue Oak Woodland	2
Sanford's arrowhead Total			3
Shasta clarkia	1B.1	Blue Oak-Foothill Pine	3
		Mixed Conifer	1
Shasta clarkia Total			4
Silky cryptantha	1B.2	Annual Grassland	2
		Blue Oak Woodland	12
		Blue Oak-Foothill Pine	8
		Cropland	1
		Montane Hardwood	1
		Valley-Foothill Riparian	2
Silky cryptantha Total			26
Spotted bat	SSC	Blue Oak-Foothill Pine	1
Spotted bat Total			1
Spring-run chinook salmon	FT, CT	Blue Oak Woodland	3
		Blue Oak-Foothill Pine	5
		Chamise-Redshank Chaparral	1
Spring-run chinook salmon Total			9
Stebbins' harmonia	1B.2	Blue Oak-Foothill Pine	3
Stebbins' harmonia Total			3
Stony Creek spurge	1B.2	Annual Grassland	2
		Barren	1
		Blue Oak Woodland	4
		Blue Oak-Foothill Pine	5
		Cropland	4
		Montane Chaparral	3
		Valley Oak Woodland	2
Stony Creek spurge Total			21
Tehama County western flax	1B.3	Blue Oak-Foothill Pine	1
		Mixed Conifer	4
		Montane Chaparral	2
		Ponderosa Pine	6
Tehama County western flax Total			13
Townsend's big-eared bat	SSC	Annual Grassland	2
		Blue Oak-Foothill Pine	3
		Chamise-Redshank Chaparral	1
		Ponderosa Pine	1
Townsend's big-eared bat			7
Western mastiff bat	SSC	Annual Grassland	1
		Blue Oak-Foothill Pine	1
		Cropland	1
		Lacustrine	1
		Orchard and Vineyard	2
		Valley-Foothill Riparian	1
Western mastiff bat Total			7
Western spadefoot	SSC	Blue Oak Woodland	1

		Blue Oak-Foothill Pine	1
		Cropland	1
Western spadefoot Total			3
White-stemmed clarkia	1B.2	Annual Grassland	1
		Blue Oak Woodland	1
		Blue Oak-Foothill Pine	1
		Valley Oak Woodland	1
White-stemmed clarkia Total			4
White-tailed kite	CFP	Annual Grassland	1
		Cropland	2
White-tailed kite Total			3
Yellow warbler	SSC	Blue Oak Woodland	1
		Chamise-Redshank Chaparral	1
		Cropland	1
		Orchard and Vineyard	1
		Valley-Foothill Riparian	1
Yellow warbler Total			5
Yellow-breasted chat	SSC	Cropland	1
		Orchard and Vineyard	1
		Valley-Foothill Riparian	1
Yellow-breasted chat Total			3
Grand Total Occurrences			445

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