ES.1 Overview

The Yolo Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP) is a comprehensive, county-wide plan to provide for the conservation of 12 sensitive species and the natural communities and agricultural land on which they depend, as well as a streamlined permitting process to address the effects of a range of future anticipated activities on these 12 species. The Yolo HCP/NCCP refers to the range of future anticipated activities as *covered activities* and the 12 sensitive species covered by this HCP/NCCP as *covered species*. The Yolo HCP/NCCP will improve habitat conservation efforts in Yolo County; encourage sustainable economic activity; and maintain and enhance agricultural production.

The Yolo Habitat Conservancy (Conservancy), which consists of Yolo County and the incorporated cities of Davis, West Sacramento, Winters, and Woodland, developed the Yolo HCP/NCCP. This HCP/NCCP provides the basis for issuance of long-term permits under the Federal Endangered Species Act (FESA) and California Natural Community Conservation Planning Act (NCCPA) that cover an array of public and private activities, including activities that are essential to the ongoing viability of Yolo County's agricultural and urban economies. Specifically, the Yolo HCP/NCCP will provide the Permittees (i.e., Yolo County, the four incorporated cities, and the Conservancy) with incidental take permits from both the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) for the 12 covered species. This action is pursuant to Section 10(a)(1)(B) of the FESA and Section 2835 of the NCCPA chapter of the California Fish and Game Code (Fish & Game Code). The Yolo HCP/NCCP ensures compliance with the FESA, NCCPA, and the California Endangered Species Act (CESA) for covered activities that may affect the covered species. In addition to the Permittees, the Yolo HCP/NCCP permits may cover the activities of other entities through certificates of inclusion, as described further in Chapter 3, Covered Activities, and Chapter 7, Plan Implementation.

The Yolo HCP/NCCP will protect, enhance, and/or[1] restore natural communities and cultivated lands, including rare and endangered species habitat, and provide for the conservation of covered species within Yolo County. In place of the current system of separately permitting and mitigating individual projects, the Plan creates a conservation and mitigation program that comprehensively coordinates the implementation of permit requirements through the development of a countywide conservation strategy, including identification of priority acquisition areas in riparian zones or other

[1] The Yolo HCP/NCCP will protect cultivated lands and will enhance these lands for covered species through crop restrictions and in some cases through adding hedgerows and other features to improve the habitat value of the cultivated lands. The Yolo HCP/NCCP does not restore cultivated lands.

locations with important species habitat. The Plan also requires additional habitat conservation that is otherwise unlikely to take place in Yolo County. Effects on natural resources and associated mitigation requirements for at-risk species are addressed more efficiently and effectively than the current piecemeal mitigation process. This approach benefits both listed species and project proponents.

The Conservancy developed the Yolo HCP/NCCP in association with the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW), and in consultation with stakeholder groups and the general public. Upon approval of the Plan, the USFWS will issue the Permittees a 50-year permit that authorizes incidental take[2] of covered listed species associated with covered activities under the federal Endangered Species Act (ESA). CDFW will issue Permittees a 50-year permit that authorizes take[3] of all covered listed species associated with covered activities under the Natural Community Conservation Planning Act (NCCP Act). This approach will allow the Permittees to streamline future mitigation requirements into one comprehensive program. In addition to obtaining take authorization for each participating agency's respective activities, the cities and County will be able to extend take authorization to project applicants under their jurisdiction. USFWS and CDFW (collectively the wildlife agencies) will also provide assurances to the Permittees that no further commitments of funds, land, or water will be required to address impacts on covered species beyond the commitments described in the Yolo HCP/NCCP to address changed circumstances.

The Yolo HCP/NCCP strikes a sensible balance between natural resource conservation and economic growth in the region. In addition to strengthening local control over land use and species protection, the Yolo HCP/NCCP will provide a more efficient process for protecting natural resources by creating a new habitat reserve system that will be larger in scale, more ecologically valuable, and easier to manage than the individual mitigation sites created under the current approach. The Yolo HCP/NCCP also will result in additional habitat conservation that is unlikely to happen in the absence of the Plan. The Yolo HCP/NCCP will further provide for a large, interconnected reserve system that maximizes species and habitat benefits, as well as performance based monitoring and adaptive management. The Plan Area will maintain a rural character, consisting almost entirely of open space and working agricultural landscapes, with both existing and planned development clustered primarily in the incorporated cities and unincorporated towns.

The Yolo HCP/NCCP builds on the county and city open space and responsible growth policies, which focus covered activities in clustered growth areas and promote open space protection. To

[2] *Take*, as defined by the Endangered Species Act, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Harm* is defined as "any act that kills or injures the species, including significant habitat modification."

[3] *Take* is defined under the California Fish and Game Code as any action or attempt to "hunt, pursue, catch, capture, or kill."

date, these policies and other conservation efforts have resulted in the conservation of 90,967 acres of public and easement lands in the Plan Area, 34,264 acres of which protect natural communities and special status species habitat in permanent conservation easements. The Conservancy will build on these public and easement lands to create the Yolo HCP/NCCP reserve system.

ES.2 Geographic Scope

The Plan Area includes all lands within the boundaries of Yolo County, totaling approximately 653,549 acres, and a 1,174-acre expanded Plan Area for riparian conservation in Solano County on the south side of Putah Creek (Figure ES-1). The Plan Area is subdivided into 22 geographically based planning units to facilitate development and execution of the conservation strategy and the analysis of potential effects associated with implementation of the covered activities (Figure ES-2). These include four urban planning units, within which most of the development will occur. Another 13 planning units will be the focus for conservation planning efforts in the eastern two-thirds of the Plan Area where most of the covered species habitat occurs. The remaining five planning units are in the western portion of the Plan Area. While the Yolo HCP/NCCP addresses conservation of natural communities in these planning units, they are the focus of the Local Conservation Plan and not the Yolo HCP/NCCP because of the lack of covered species habitat in this area. The Local Conservation Plan is a voluntary, non-regulatory plan to fill in conservation gaps not covered by the Yolo HCP/NCCP.

ES.3 Existing Ecological Conditions

The Conservancy developed a multilevel land cover classification and mapping system for the HCP/NCCP planning process to represent the natural and anthropogenic communities, vegetation types, and other land cover types in the Plan Area under existing conditions. This system integrates existing, commonly used and emerging vegetation classification systems. It provides the basis for characterizing current and future wildlife habitat uses through wildlife habitat relationship models, and a foundation to develop more detailed, site-specific maps in the future.

The foundation of the mapping system is a set of land cover types, which are floristically based or, for unvegetated areas, are based on other land cover attributes (e.g., barren, developed). These land cover types are grouped into 15 natural communities (including the cultivated lands seminatural community), all of which provide habitat value for covered or other sensitive species. Land cover types that provide limited or no habitat value (e.g., orchards, vineyards, developed) are not grouped into natural communities and are termed *other land cover types.* The natural communities in turn fall into five categories: cultivated lands, grassland, shrubland and scrub, woodland and forest, and riparian and wetland. Table ES-1 lists the 15 natural communities, and land cover types that do not fall within natural communities.

Figure ES-1 Yolo NCP/HCCP Plan Area

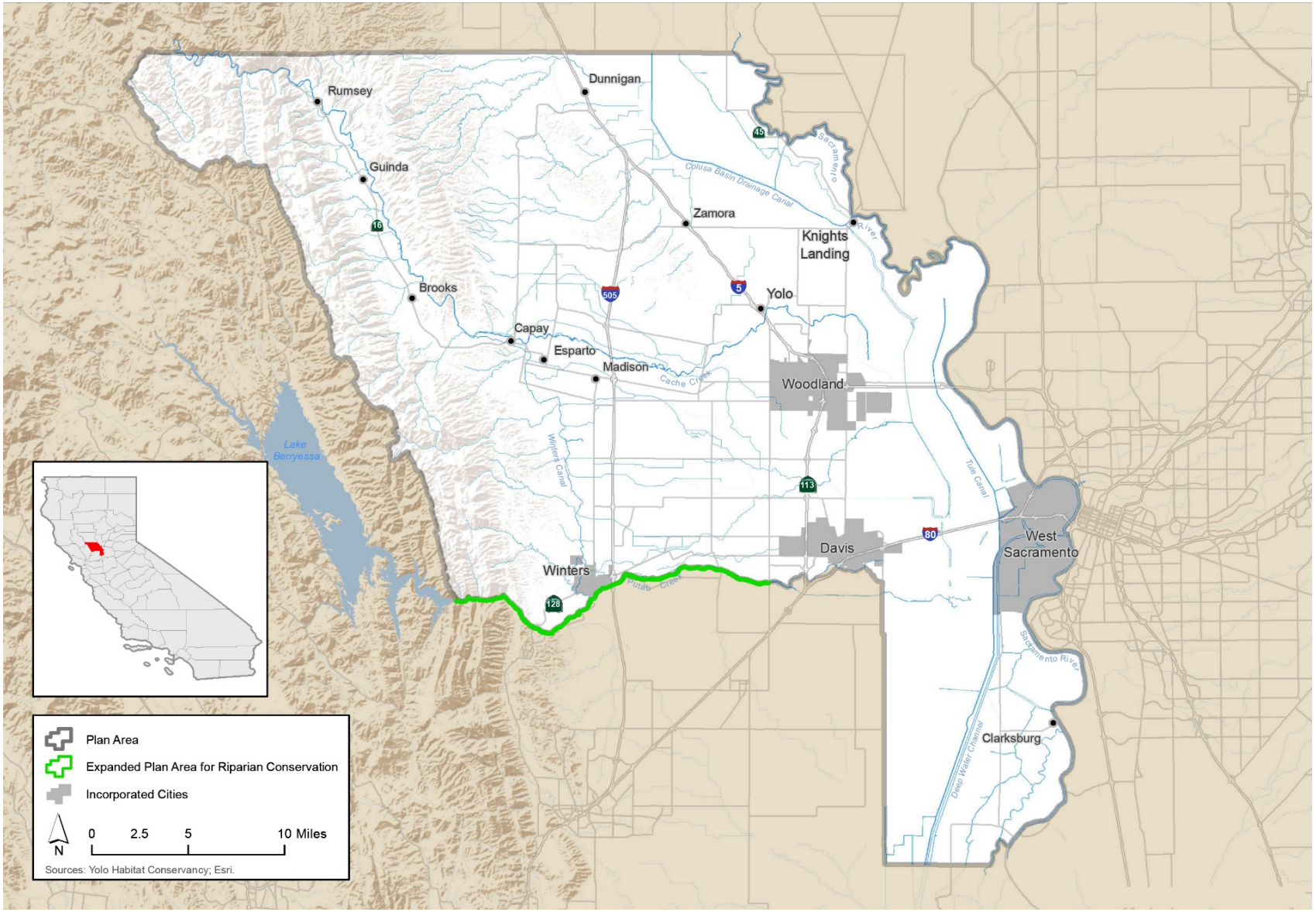


Figure ES-2 Planning Units

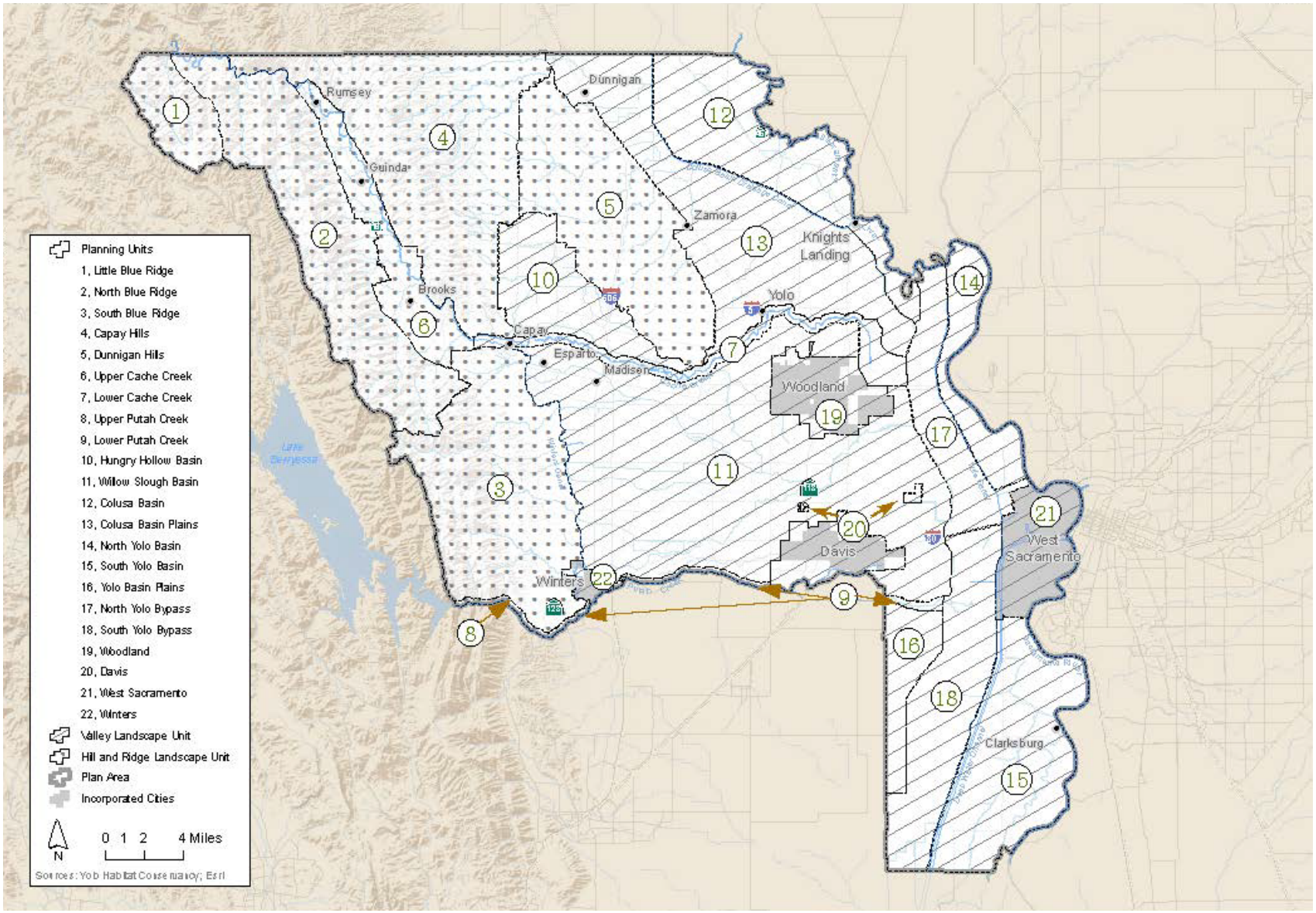


Table ES-1. Natural Communities and Other Land Cover Types

Category	Natural Community (or land cover types for lands that do not fall within a natural community)	Acres in Plan Area
Cultivated Lands	Cultivated Lands Seminatural Community	250,842
Grassland	Grassland Natural Community	80,911
	Serpentine Natural Community	247
Shrubland and Scrub	Chamise Natural Community	30,187
	Mixed Chaparral Natural Community	14,518
Woodland and Forest	Oak-Foothill Pine Natural Community	43,772
	Blue Oak Woodland Natural Community	35,891
	Closed-Cone Pine-Cypress Natural Community	212
	Montane Hardwood Natural Community	3,087
	Valley Oak Woodland Natural Community	181
Riparian and Wetland	Alkali Prairie Natural Community	312
	Vernal Pool Complex Natural Community	299
	Fresh Emergent Wetland Natural Community	26,113
	Valley Foothill Riparian Natural Community	12,565
	Lacustrine and Riverine Natural Community	13,493
Land Cover Types outside Natural Communities	Other Agriculture	62,164
	Semiagricultural/Incidental to Agriculture	30,510
	Eucalyptus	369
	Barren and Developed	47,822
TOTAL		**653,495**[a]

Note:

a. This acre amount differs from the total Plan Area acre amount due to inconsistencies in the boundaries of the land cover and planning unit GIS layers.

ES.4 Permit Term

The Permittees are seeking permits from the wildlife agencies with terms of 50 years, which the wildlife agencies will issue to all Permittees collectively. The permit term is the time period in which all covered activities can receive take authorization under the Plan, consistent with the requirements of the Plan. The permit term is also the time in which the Conservancy must successfully complete all conservation actions to offset the impacts of the covered activities. The Conservancy requested a permit term of 50 years because it allows for the full and successful implementation of the covered activities, the conservation strategy, the monitoring and adaptive management program, and the funding strategy. The permits are tied to the Yolo HCP/NCCP and to the implementing agreement.

ES.5 Covered Species

This HCP/NCCP provides take authorization for 12 listed and non-listed species (i.e., covered species) (Table ES-2). The Conservancy selected the 12 covered species from a larger pool of 175 special status species in the region based on their potential to be affected by covered activities, their occurrence in the Plan Area, the adequacy of data for the species, and plan-specific factors such as the availability of funding to meet NCCP standards over the 50-year permit term. Appendix C provides details as to how the Conservancy evaluated 175 species for coverage. The list of 175 species includes some that are California Species of Special Concern: these species will be addressed on a non-regulatory basis in a Local Conservation Plan (Appendix E), which is described further in Chapter 1. The Yolo HCP/NCCP includes conservation measures to provide for the conservation of all 12 species selected for coverage under the HCP/NCCP, whether or not they are currently listed. Accordingly, the wildlife agencies will not require any additional conservation measures if any non-listed, covered species are listed during the permit term.

ES.6 Covered Activities

Covered activities in the Yolo HCP/NCCP fall into the following five categories. The following two categories are spatially defined as geographic information system (GIS) data and cover 17,550 acres[4].

- Urban projects and activities.
    - General urban projects and urban public services, infrastructure, and utilities.
    - Urban projects in rural areas.
- Rural projects and activities.
    - General rural development.
    - Rural public services, infrastructure, and utilities.
    - Agricultural economic development.
    - Parks/open space
    - Aggregate mining.

The remaining three categories are not spatially defined in GIS, but the Conservancy estimated effects based on a set of assumptions described in Chapter 5, *Effects on Covered Species and Natural Communities*:

[4] While the extent of these activities are defined for the GIS, they are not determinative for future coverage. That future coverage will be limited only by type of activity and type of habitat cover impacted.

- Public and private operations and maintenance activities, and other spatially undefined temporary activities associated with construction projects (706 acres)
- Conservation strategy implementation (956 acres of restoration, and management and enhancement activities throughout the reserve system)
- Neighboring landowner agreements (2,347 acres)

Table ES-2. Covered Species

Common Name	Scientific Name	Status Federal/State/Other[a]
Plants		
1 Palmate-bracted bird's beak	*Chloropyron palmatum*[b]	E/E/1B
Invertebrates		
2 Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T/-/-
Amphibians		
3 California tiger salamander (Central California DPS)	*Ambystoma californiense*	T/T/-
Reptiles		
4 Western pond turtle	*Actinemys marmorata*	-/CSC/-
5 Giant garter snake	*Thamnophis gigas*	T/T/-
Birds		
6 Swainson's hawk	*Buteo swainsoni*	-/T/-
7 White-tailed kite	*Elanus leucurus*	-/FP/-
8 Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	T/E/-
9 Western burrowing owl	*Athene cunicularia hypugaea*	-/CSC/-
10 Least Bell's vireo	*Vireo bellii pusillus*	E/E/-
11 Bank swallow	*Riparia riparia*	-/T/-
12 Tricolored blackbird	*Agelaius tricolor*	-/C/-

[a] Status:

Federal
- C = Candidate for listing under FESA
- E = Listed as endangered under FESA
- PT = Proposed as threatened under FESA
- T = Listed as threatened under FESA
- - = no designation

State
- CSC = California species of special concern
- C = Candidate for listing under CESA Under CESA, a candidate for listing is afforded the status of a listed species.
- E = Listed as endangered under CESA
- FP = Fully protected under California Fish and Game Code
- T = Listed as threatened under CESA
- - = No designation

Other:
- 1B = California Native Plant Society (CNPS) designation for species rare or endangered in California and elsewhere.
- - = no designation

[b] Formerly *Cordylanthus palmatus*.

DPS = distinct population segment; FESA = federal Endangered Species Act; CESA = California Endangered Species Act

ES.7 Effects on Covered Species and Natural Communities

The Conservancy overlaid a GIS data layer for covered activities over a GIS layer for natural communities and other land cover types, and the intersection of these two layers provided the estimated amount of conversion of natural communities and other land cover types as a result of spatially defined covered activities. The Conservancy then applied a set of assumptions to the spatially undefined covered activities (described in Chapter 5, *Effects on Covered Activities*) to estimate the amount of land conversion resulting from these activities. The covered activities layer intersected with 18,826 acres of land, 11,510 acres of which consist of natural communities. Another estimated 1,134 acres of natural communities are expected to be permanently lost as a result of spatially undefined activities (including operations and maintenance and restoration), for a total of 12,644[5] acres of natural communities affected. The Conservancy applied a similar approach for estimating habitat loss for covered species, intersecting the covered activities layer with GIS layers representing habitat models for each covered species to estimate loss from spatially defined activities, and applying a set of assumptions to estimate loss from spatially undefined activities.

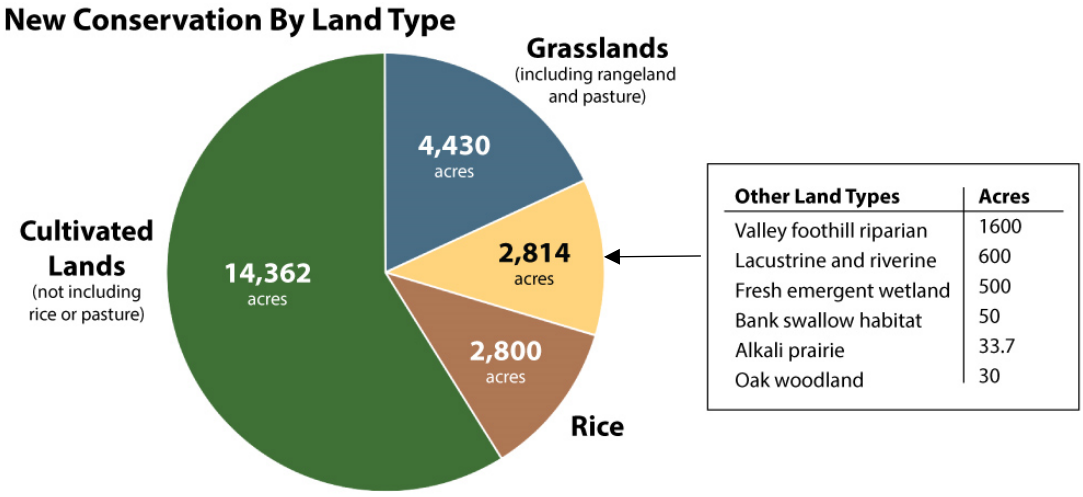
In addition to the quantitative analysis of natural community and covered species habitat loss, the Conservancy quantitatively estimated the effects of habitat fragmentation on California tiger salamander, western pond turtle, giant garter snake, Swainson's hawk, and white-tailed kite. The Conservancy also qualitatively analyzed the effects of covered activities due to factors such as habitat fragmentation, noise, lighting, and introduction of invasive species. The Conservancy developed measures to avoid and minimize these effects, as described in ES.11, *Conditions on Covered Activities.*

ES.8 Conservation Strategy

The conservation strategy was designed to provide for the conservation of covered species in the Plan Area and to mitigate the effects of covered activities. The conservation strategy provides for the protection, management, enhancement, and restoration of natural resources at multiple scales including landscape, natural-community, and species-specific levels.

[5] Due to rounding differences, the total natural community loss varies between 12,644 and 12,649. Table 5-1, *Maximum Allowable Loss of Natural Communities,* provides the maximum allowable loss for each natural community, for a total of 12,649 acres maximum loss.

Figure ES-3. Natural community composition of the 24,406 acres of new conservation.



The conservation strategy is based on a set of biological goals and objectives developed specifically for the Yolo HCP/NCCP. The Conservancy identified conservation measures to achieve these goals and objectives. The conservation strategy consists of the following conservation measures, each of which includes numerous conservation actions for meeting the biological goals and objectives.

- Conservation Measure 1, Establish Reserve System
- Conservation Measure 2, Restore Natural Communities
- Conservation Measure 3, Manage and Enhance the Reserve System

The Conservancy determined the general level of conservation effort for each covered species and natural community, beyond mitigation, based on the following criteria.

- The life history needs of each species.
- Conservation needs based on recovery plans, five-year reviews, and other relevant conservation planning documents.
- The importance of the Plan Area to species conservation, in terms of the rarity of the species and the proportion of the species' range and population that is present in the Plan Area.
- The extent to which species habitat is already protected in the Plan Area.
- Reserve land configuration and quality.
- Plan specific factors such as land use policies and growth patterns in the Plan Area.

Table ES-5, located at end of this chapter, summarizes the benefits of the conservation strategy for each of the covered species.

ES.8.1 Conservation Measure 1: Establish Reserve System

The heart of the conservation strategy is the creation of a reserve system that will include at least 33,406 acres (and up to 956 acres of additional restored natural community if loss of all allowable acres occurs) for the benefit of covered species, natural communities, biological diversity, and ecosystem function. The Conservancy will select lands for the reserve system based on reserve system assembly principles, criteria, and guidelines described in Conservation Measure 1. Of the 32,406 acres, 24,406 acres will consist of newly protected lands[6] (see Figure ES-3 for the natural community composition of the newly protected lands) and 8,000 acres will consist of pre-permit reserve lands[7] that the Conservancy enrolls into the reserve system and manages and monitors consistent with the Yolo HCP/NCCP. Table ES-3 provides the acres of effect and a breakdown of the conservation by mitigation and conservation beyond mitigation.

The Yolo HCP/NCCP describes a detailed but flexible process to assemble the reserve system using acquisition of fee title or conservation easements from willing sellers and partnerships with other conservation organizations already active in the region. The Yolo HCP/NCCP requires the Conservancy to ensure reserve assembly stays ahead of the impacts of covered activities. The Conservancy will complete all land acquisition by Year 45 of the permit term.

Table ES-3. Effects and Commitments over Permit Term

Effects (acres)	**12,649[a]**
Mitigation (acres)	17,087[b]
Conservation beyond Mitigation (acres)	16,275[c]
Total Conservation (acres)	**33,362**

Notes:

a. This is the amount of loss of natural communities with covered species habitat. This does not include conversion of other land cover types such as orchards and vineyards.

b. This includes 16,175 acres of newly protected lands and 912 acres of restored/created lands.

c. This includes 8,000 acres of pre-permit reserve lands, 8,231 acres of newly protected lands, and 44 acres of restored/created lands.

[6] Newly protected lands are lands that were not previously protected through a conservation easement or other mechanism, and that the Conservancy places under a permanent conservation easement and enrolls in the reserve system.

[7] Categories 1 and 2 baseline public and easement lands (Table 6-1(a)) that are enrolled into the reserve system. Category 2 baseline public and easement lands that are counted as newly protected lands are not counted as pre-permit reserve lands. See Appendix M, *Glossary*, for definitions of land categories.

ES.8.2 Conservation Measure 2, Restore Natural Communities

In addition to the protection of all natural communities described above, the Conservancy will restore riparian, wetland, and aquatic land cover types at a ratio of one acre restored for each acre lost. If all loss occurs, the Conservancy will restore up to 956 acres of riparian woodland and scrub, fresh emergent wetlands, and lacustrine and riverine natural communities. The Conservancy will complete construction of all habitat restoration projects by Year 40 of the permit term.

ES.8.3 Conservation Measure 3, Manage and Enhance the Reserve System

The Conservancy will manage and enhance all terrestrial and aquatic land cover types in the reserve system to benefit natural communities and covered species. The reserve system will be managed to maintain ecological values and prevent their degradation. The Conservancy will identify opportunities, based on site-specific conditions, to enhance the biological values of protected natural communities and species habitats through manipulation of physical, chemical, or biological characteristics, as described in Conservation Measure 3.

ES.9 Monitoring and Adaptive Management

The Yolo HCP/NCCP's monitoring and adaptive management program will incorporate important principles of "learning by doing" into the operation of the reserve system. Adaptive management is a decision-making process promoting flexible management such that actions can be adjusted as uncertainties are better understood or as conditions change. Monitoring the outcomes of management is the foundation of an adaptive approach. The Yolo HCP/NCCP contains guidelines and recommendations for monitoring landscapes as well as the management, enhancement, or restoration of natural communities and covered species habitat. The monitoring and adaptive management program therefore includes the following three phases.

1. Inventory phase. During this phase, the Conservancy documents baseline conditions on lands as they are added to the reserve system. The Conservancy also initiates management planning tasks during this phase, such as developing management plans, prioritizing management

actions, selecting monitoring protocols and sampling design for status and trends monitoring, and developing criteria for measuring success of enhancement, restoration, or creation efforts.

2. Targeted studies phase. During this phase, the Conservancy will develop ecological models identifying the relationships between ecosystem components and identifying management assumptions. The Conservancy will also test and refine monitoring protocols and develop experiments to resolve critical uncertainties during this phase.
3. Long-term monitoring and adaptive management phase. During this phase, the Conservancy will use the framework developed during the prior phases to determine the status and trends of natural communities and covered species in the reserve system, and to assess the effectiveness of reserve system management in achieving the HCP/NCCP biological goals and objectives.

The Yolo HCP/NCCP describes monitoring actions the Conservancy will implement at the landscape, natural community, and covered species levels. At the landscape level, the Conservancy will implement the following:

Assimilate results of pre-acquisition assessments and other surveys;

- Refine land cover maps;
- Assess and monitor landscape linkages; and
- Track invasive species.

For each natural community, the Conservancy will implement the following:

- Assess natural community conditions;
- Monitor natural community use by covered species; and
- Monitor the effectiveness of management, enhancement, and restoration actions.

The HCP/NCCP also describes monitoring actions for each covered species, including:

- Monitor the status and trends of covered species within the reserve system;
- Monitor the response of covered species to conservation measures and adaptive management; and
- Direct studies to resolve critical management uncertainties for some covered species.

Table ES-5 summarizes monitoring actions for each covered species.

ES.10 Application Process

The HCP/NCCP describes the processes for receiving take authorization under the following three categories.

- Public projects proposed by Permittees. The Permits authorize incidental take associated with HCP/NCCP covered activities proposed by Permittees. The Permittees must document compliance with the required conditions on covered activities (ES.11, *Conditions on Covered Activities*), and provide a copy of this documentation to the Conservancy for tracking and reporting purposes (e.g., to track the amount of take coverage the Conservancy has granted).

- Private projects under the discretionary authority of Permittees. Project proponents implementing private projects that require discretionary land use approval from a Permittee will submit an HCP/NCCP application package to the relevant Permittee, and the Permittee will undertake review of take authorization applications concurrent with California Environmental Quality Act (CEQA) environmental review. Once the application package is complete, the Permittee will specify all conditions on covered activities and fees as conditions of project approval. The project proponent will pay fees or contribute land in lieu of fees prior to any project related ground disturbance.
- Projects proposed by Special Participating Entities. Special Participating Entities (SPEs) are entities with proposed projects or activities that are not subject to the land use authority of the Permittees through the CEQA process, and therefore cannot receive coverage under this HCP/NCCP through the process described above. These entities may choose to request coverage under the HCP/NCCP as SPEs to obtain take authorization for their projects or activities. The Conservancy will determine eligibility for SPE status based on factors described in Section 3.4.2, *Criteria for Coverage*, including whether the SPE can meet HCP/NCCP conditions and if the amount of take requested (i.e., acres of natural community or covered species habitat loss) is available for the project. The project also must not unduly reduce the take authorization of the Permittees. If the entity qualifies as an SPE, the Conservancy may issue take coverage at the Conservancy's discretion. To grant take authorization to an SPE, the Conservancy must establish a legally enforceable contractual relationship with the SPE.

ES.11 Conditions on Covered Activities

A primary component of regional species protection is the development of comprehensive avoidance and minimization measures to help ensure that effects of covered activities are reduced. As such, the Yolo HCP/NCCP includes conditions on covered activities to avoid and minimize effects. The Yolo HCP/NCCP refers to these conditions as *avoidance and minimization measures,* or *AMM*s. All Permittees and private applicants will adhere to these measures to receive take authorization. All parties covered by the HCP/NCCP will submit an application package to receive or document take authorization.

The AMMs described in Chapter 4 are as follows.

General Project Design

- AMM1, *Establish Buffers*
- AMM2, *Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces*

General Construction and Operations and Maintenance

- AMM3, *Confine and Delineate Work Area*
- AMM4, *Cover Trenches and Holes during Construction and Maintenance*
- AMM5, *Control Fugitive Dust*

- AMM6, *Conduct Worker Training*
- AMM7, *Control Night-Time Lighting of Project Construction Sites*
- AMM8, *Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas*

Sensitive Natural Communities

- AMM9, *Establish Buffers Around Sensitive Natural Communities*
- AMM10, *Avoid and Minimize Effects on Wetlands and Waters*

Covered Species

- AMM11, *Minimize Take and Adverse Effects on Palmate-Bracted Bird's Beak*
- AMM12, *Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle*
- AMM13, *Minimize Take and Adverse Effects on Habitat of California Tiger Salamander*
- AMM14, *Minimize Take and Adverse Effects on Habitat of Western Pond Turtle*
- AMM15, *Minimize Take and Adverse Effects on Habitat of Giant Garter Snake*
- AMM16, *Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite*
- AMM17, *Minimize Take and Adverse Effects on Habitat of Western Yellow-Billed Cuckoo*
- AMM18, *Minimize Take and Adverse Effects on Western Burrowing Owl*
- AMM19, *Minimize Take and Adverse Effects on Least Bell's Vireo*
- AMM20, *Minimize Take and Adverse Effects on Habitat of Bank Swallow*
- AMM21, *Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird*

Table ES-5 summarizes AMMs for each of the covered species.

ES.12 Implementation

The Conservancy is currently responsible for preparing the Yolo HCP/NCCP. Just prior to Permit issuance, the Conservancy's roles will shift to overseeing assembly and operation of the reserve system; overseeing implementation of other conservation actions; developing and overseeing the management and monitoring program; and ensuring compliance with all terms of the Yolo HCP/NCCP, permits, and implementing agreement. The Yolo HCP/NCCP includes a detailed process for land acquisition from willing sellers and allowances for landowners to provide land in lieu of fees under certain circumstances.

The Conservancy will implement the Yolo HCP/NCCP through its Board of Directors and Executive Director, as well as staff and consultants working at the Executive Director's direction. The wildlife agencies, local land management agencies, the Science and Technical Advisory Committee (STAC), and the Advisory Committee will also provide input. The wildlife agencies will retain full

responsibility to determine whether HCP/NCCP implementation is proceeding in compliance with the terms and conditions of the regulatory authorizations; enforce the terms and conditions of the regulatory authorizations; and modify, suspend, or revoke regulatory authorizations, consistent with the HCP/NCCP terms and conditions, the implementing agreement, the permits, and applicable state or federal law.

The Conservancy expects to partner with existing agencies and organizations to conduct a significant portion of its responsibilities, including the STAC and the Advisory Committee. The Conservancy will continue to use the STAC and the Advisory Committee, which were established during the planning process by the Conservancy to select "mitigation receiving sites" for Swainson's hawk. A "mitigation receiving site" is property encumbered by a conservation easement for the purpose of providing mitigation credits to offset impacts to Swainson's hawk. Once approved, the Yolo HCP/NCCP will replace the county's Swainson's hawk mitigation fee program, and pre-existing mitigation receiving sites may continue to operate through the HCP/NCCP. During HCP/NCCP implementation, landowners may continue to sell credits through the in-lieu program described in Section 7.5.8.1, *Criteria for Providing Land in Lieu of HCP/NCCP Mitigation Fees.* As a result, the role of the STAC will broaden from meeting Swainson's hawk mitigation needs (through "mitigation receiving sites") to meeting the HCP/NCCP's biological goals and objectives at the landscape, natural community, and covered species levels. Mitigation receiving sites with unsold credits at the time of HCP/NCCP approval will be eligible to sell the portion of their land with remaining credits to the Conservancy or to third parties that wish to provide HCP/NCCP development fees for land in lieu, according to the criteria in Chapter 7. Otherwise, these lands may count toward the Yolo HCP/NCCP's commitment of 8,000 acres of pre-permit reserve lands.

ES.13 Cost and Funding

A summary of the Yolo HCP/NCCP costs and funding strategy is presented in **Table ES-4**. The cost of implementing the HCP/NCCP during the 50-year permit term is estimated at an average of approximately $8.1 million annually. This includes the cost of land acquisition, HCP/NCCP administration, natural community management and restoration, biological monitoring, remedial measures, and a contingency. The Conservancy estimated HCP/NCCP costs from a detailed model of all expected cost components based on actual costs of tasks.

Plan funding will come from several different sources as summarized below:

- **HCP/NCCP Development Fees.** This source includes private and public sector development impact fees. Land cover fees will apply to all land cover types except developed and other types with no conservation value. Additionally, three types of wetland fees will apply: fresh emergent wetland, valley foothill riparian, and lacustrine and riverine. Fees will also apply to temporary effects (temporary impact fee). To account for inflation, the Conservancy will update the development fees automatically on an annual basis. The Conservancy also may update the fee at any time if land acquisition costs increase.
- **Local Funding.** Non-fee local funding will complement fee-based funding sources, and will be used for portions of this HCP/NCCP that provide for the conservation of natural communities and covered species in the Plan Area (i.e., not for mitigation). Non-fee local funding will take many forms and primarily consist of activities funded and managed by local government agencies in cooperation with the Conservancy that will offset HCP/NCCP implementation costs.

Additional funding is expected from private foundations. These non-fee local funding sources cannot be used for mitigation purposes and will be directed towards the NCCP portion of this HCP/NCCP (i.e., provides for the conservation of covered species in the Plan Area necessary to meet the requirements of the NCCPA).

- **Interest Income.** The Conservancy is expected to gain substantial revenue from interest on this HCP/NCCP endowment as it grows prior to its use to fund costs in perpetuity after the 50-year permit term. The Conservancy will also gain limited income from interest on revenue not yet spent.
- **State and Federal Funding.** This source includes federal and state grant programs. Certain state and federal funding can only be used for portions of this HCP/NCCP that provide for the conservation of natural communities and covered species in the Plan Area (i.e., not for mitigation)[8]. The HCP/NCCP funding analysis is based on a cost share between local funding (see above) and state and federal funding (Table ES-4) for acquisition of conservation lands.

Annual costs beyond the permit term are estimated to be about 21 percent of average annual costs in the final years of the permit term. The Conservancy will create an endowment during the permit term to fund all needed implementation after the permit term. An endowment of approximately $13.7 million in 2017 dollars is needed to generate average annual real returns to fund post-permit term management and monitoring of the reserve system.

Table ES-4. Yolo HCP/NCCP Cost and Funding Overview

Type	Amount (rounded to nearest $1,000)
Estimated costs over Permit Term	
Establish reserve system, except restored lands	$218,376,000
Restore natural communities	$68,150,000
Manage and enhance easement & pre-permit reserve lands	$14,468,000
Monitoring, research and scientific review, except restored lands	$18,802,000
Plan administration	$34,145,000
Local partner activities in riparian corridors	$21,520,000
Contingency fund	$30,727,000
Total estimated implementation costs	**$406,187,000**
Required endowment fund balance, Year 50	$13,699,000
Plan preparation	$5,076,000
Total Yolo HCP/NCCP costs	**$424,962,000**
Projected funding	
HCP/NCCP Development Fees	
Land cover fee	$210,782,000
Wetland fee[a]	$69,493,000
Subtotal development fee funding	**$280,725,000**
Local, state, and federal funding	

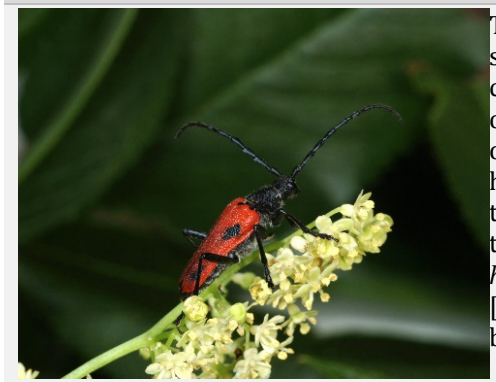
[8] The exception to this rule is if a state agency seeks permit coverage for a public project under the HCP/NCCP as a Special Participating Entity (see Section 8.4.1.9, *Special Participating Entities*).

Type	Amount (rounded to nearest $1,000)
Local sources	
Davis Open Space Program	$5,146,000
CCRMP/CCIP	$16,666,000
SCWA/LPCCC	$10,437,000
Local foundations and other	$10,000,000
Subtotal local sources	**$42,249,000**
State and federal sources	$93,039,000
Subtotal local, state, and federal funding	**$135,288,000**
Other funding	
Endowment fund investment income	$8,149,000
Operational interest income	$1,250,000
Subtotal other funding	**$9,449,000**
Total projected funding	***$424,962,000***

Note:

a. This includes fresh emergent wetland fee, valley foothill riparian fee, and lacustrine and riverine fee.

Table ES-5. Summary Evaluation of Species Covered by the Yolo HCP/NCCP

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Valley Elderberry Longhorn Beetle (T/–)			
 The valley elderberry longhorn beetle lays between 8-20 eggs per year in bark crevices on the elderberry shrub. The baby larvae feed on the stems and branches of the tree for 1-2 year while maturing, then chew a circular hole. Several weeks later, the adult emerges into the world and flies freely between shrubs. Habitat occupied by valley elderberry longhorn beetle tends to form and exist in riparian corridors and on the level, open ground of periodically flooded river and stream terraces and floodplains. This geomorphic setting historically has been desirable for agricultural, urban, or industrial development and much of this habitat type has been converted through dams and levees for use as developable land. The greatest current threat to valley elderberry longhorn beetle is from the invasive nonnative pests Argentine ant (*Linepithema humile*) and European earwig (*Forficula auricularia*), and invasive nonnative plants (e.g., black locust [*Robinia pseudoacacia*], giant reed [*Arundo donax*], red sesbania [*Sesbania punicea*], and Himalaya blackberry [*Rubus armeniacus*]).			
Status in Range: California Central Valley and the Sacramento River Delta. 201 occurrences range-wide.	**Reserve System Components:** 1,600 acres newly protected modeled habitat, prioritizing occupied habitat. Up to 576 acres restored riparian habitat (1 acre of riparian restored for each acre of riparian lost as a result of covered activities). Valley elderberry longhorn beetle habitat restored within the riparian natural community, consistent with 1999 USFWS guidelines.	**Permanent:** 584 acres of modeled habitat (4% of habitat in Plan Area). This includes 523 acres riparian and 61 acres non-riparian habitat.	On suitable habitat in the reserve system, monitoring of distribution, relative abundance, relative health, and age of elderberry shrubs; distribution and relative abundance of valley elderberry longhorn beetle; proximity to other habitat, and presence of threat factors. Evaluation of responses to habitat enhancement and restoration by monitoring patch occupancy and relative abundance in enhanced and restored sites.
Status in Plan Area: 13,379 acres of modeled habitat, 2,080 acres of which are in categories 1 and 2 baseline public and easement lands. 18 occurrences in the Plan Area (9% of range-wide occurrences) throughout the	**Management and Enhancement:** Habitat management and enhancement in the reserve system to sustain or improve habitat values.	**Temporary:** one acre of modeled habitat	

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Sacramento River corridor, Putah Creek from Monticello Dam east to Davis and along Cache Creek. Since comprehensive surveys for valley elderberry longhorn beetle in Yolo County have not been conducted and known occurrences throughout the species' range, the population size and locations of this species in the Plan Area are not fully known.	This will include invasive species control and other measures deemed necessary to reduce threats on reserve lands, as determined through monitoring.	(<1% of habitat in Plan Area),	
Conditions on Covered Activities: Project applicants will design projects to avoid elderberry shrubs with a setback of at least 100 feet. Prior to construction, the project proponent will transplant elderberry shrubs identified within project footprint that cannot be avoided, and quantify affected stems. The Conservancy will mitigate for loss of unavoidable shrubs consistent with 1999 USFWS guidelines. On lands in the reserve system, farmers and land managers will retain elderberry shrubs and maintain 100-foot buffers wherever the land counts toward the protection commitment for the species, except for land management activities that will not result in take such as hand weeding.			
Net effects: The Yolo HCP/NCCP will result in an estimated net increase of 53 acres (576 acres restored and 523 acres lost, or less than 1% increase) of riparian valley elderberry longhorn habitat in the Plan Area, and a net decrease (61 acres lost, not restored, or less than 1% decrease) of non-riparian habitat for this species. With full HCP/NCCP implementation, 42% of the valley elderberry longhorn beetle habitat in the Plan Area will be conserved on categories 1 and 2 public and easement lands, including baseline and newly protected lands. At least 1,600 acres of these categories 1 and 2 public and easement lands will be newly protected and incorporated into the reserve system. The habitat that will be lost as a result of covered activities is widely distributed throughout the Plan Area, and only a small fraction of it supports elderberry shrubs. The habitat to be restored will include elderberry shrubs and is therefore much more likely to support valley elderberry longhorn beetle than the habitat lost. Moreover, these shrubs will be planted near sites the species is known to occupy. Restoring suitable habitat near occupied areas is necessary to expand populations of valley elderberry longhorn beetle because of the species' poor dispersal ability. Additionally, shrubs that are removed will be transplanted to restoration sites, many of which will continue to provide suitable habitat for the species despite being counted as lost habitat. Therefore, although there is only a small net gain in riparian habitat amount (53 acres), the net gain to the population is expected to be substantial because transplanting will minimize losses, and restoration will provide the highest-value habitat most likely to be colonized by the species. These measures are expected to offset any population effects resulting from covered activities and to facilitate expansion of valley elderberry longhorn beetle populations in the Plan Area. Overall, the Yolo HCP/NCCP will provide a substantial net benefit to the valley elderberry longhorn beetle through the increase in available habitat adjacent to known occupied habitat. These restored areas will be protected, and will be managed and monitored to support the species. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on valley elderberry longhorn beetle, to the maximum extent practicable, and will provide for the conservation of this species in the Plan Area.			

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
California Tiger Salamander/(T/T)			
 Tiger salamanders breed in ponds and spend most of their adult lives upland, but underground, in burrows created by mammals such as ground squirrels. "Tiger" comes from the white or yellow bars on their skin. Instead of drinking water, these salamanders absorb water through their skin while lying in puddles or on top of rocks covered in dew. The California tiger salamander is restricted to grasslands, oak savannah, and coastal scrub communities where aquatic sites are available for breeding. Breeding sites generally consist of natural ephemeral pools, such as vernal pools, or artificial ponds that mimic them (e.g., stock ponds that are allowed to dry). Breeding sites may also include perennial features with open water refugia that do not support populations of bullfrog (*Rana catesbeiana*) or predatory fishes. Conversion of land to residential, commercial, and agricultural activities is considered the most significant threat to California tiger salamanders, additional threats include exotic species such as bullfrogs (*Ranacates beiana)*, mosquitofish (*Gambusia affinis*), sunfish species (e.g., largemouth bass [*Micropterus salmoides*] and bluegill [*Lepomis macrochirus*]), catfish (*Ictalurus* spp.), and fathead minnows (*Pimephales promelas*).			
Status in Range: Discontinuous distribution in west-central California: coast ranges between Sonoma and Santa Barbara counties, Central Valley and surrounding foothills from southern Colusa County to north-western Kern County on the west side of the valley and southern Butte County to northern Tulare County on the east side. It has been eliminated from much of its former range in the Central Valley as a result of agricultural and urban development, but still occurs throughout most of its overall historical range and can be locally common (Trenham *et al.* 2000). Most populations occur at elevations of 200–1,500 feet, having been extirpated at lower elevations due to presence nonnative species in breeding ponds; however, extirpation has occurred across species range due to habitat loss. Species is reported to be declining throughout its limited California range.	**Reserve System Components:** Protection of 2,000 acres of upland habitat within 1.3 miles of aquatic habitat, and 36 acres of aquatic habitat in the Dunnigan Hills planning unit, prioritizing protection of critical habitat. The 36 acres of protected aquatic will be in association with the 2,000 acres of protected upland. Restoration of 36 acres of aquatic habitat. Within the protected and restored aquatic habitat, at least five California tiger salamander breeding pools that are each found to support all life stages of the salamander through at least all water year types.	**Permanent:** Up to 398 acres (less than 1%) of upland habitat and 12 acres (1%) of aquatic habitat. No loss of critical habitat.	Conducting annual surveys of occupied and potential breeding and upland habitat. Evaluating species response to habitat enhancement, restoration, or creation. Determining species response to predator control programs. Determining effects of and response to additional threats, such as diseases.
Status in Plan Area: 87,509 acres of modeled habitat, with 1,004 acres of aquatic breeding habitat and 86,505 acres of upland habitat. Known occurrences include one occurrence near the southern end of the	**Management and Enhancement:** Management and enhancement of habitat on reserve system lands through grazing and invasive species	**Temporary:** Up to 1 acre of modeled aquatic habitat (<1%)	

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Capay Hills Planning Unit (Planning Unit 4), one occurrence at the western edge of the Colusa Basin Plains Planning Unit (Planning Unit 13), and four occurrences at the northern end of the Dunnigan Hills Planning Unit (Planning Unit 5).	control. Elimination or reduction of other threats identified through monitoring.	and 1 acre of modeled upland habitat (<1%).	
Conditions on Covered Activities: Applicants will design project to avoid critical habitat within the Dunnigan Creek Unit. Outside critical habitat, if species is present or assumed to be present in aquatic habitat, applicants will design project to avoid adverse effects within 500 feet if outside urban planning units. The covered activity will not remove occupied (or assumed to be occupied) aquatic habitat until at least four new occupied breeding pools are discovered or established, and protected in the Plan Area. After the four new occupied breeding pools are protected and with concurrence of USFWS and CDFW, up to three occupied breeding pools may be affected. The breeding habitat may not be removed if USFWS and CDFW determine that the covered activity would remove a significant occurrence of this species that is necessary to maintain the genetic diversity or regional distribution of the species. Farmers and land managers will avoid injuring or killing California tiger salamanders within the reserve system.			
Net effects: 66% of the aquatic habitat and 13% of the upland habitat in the Plan Area will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. At least 36 acres of aquatic habitat and 2,000 acres of upland habitat will consist of newly protected lands. Full implementation of the Yolo HCP/NCCP will result in a 2% increase of California tiger salamander aquatic habitat and less than a 1% net decrease in upland habitat in the Plan. The Yolo HCP/NCCP will provide a substantial net benefit to the species through the assembly of a reserve system and conservation that is managed and monitored to support the species. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on California tiger salamander, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area			
Western Pond Turtle/(–/CSC)			
 Western pond turtles eat a balanced diet of algae, plants, crustaceans and insects, and love to sunbathe on warm summer days. These turtles have been known to bump and shove their turtle friends to fight for prime sunbathing locations. The western pond turtle, although primarily found in natural aquatic habitats, also inhabits impoundments, irrigation ditches, and other artificial and natural water bodies. The species is usually found in fresh water, but brackish habitats are also utilized. Upland habitats are also important to western pond turtles for nesting, overwintering, and overland dispersal. Nesting sites may be as far as 1,312 feet or more from the aquatic habitat. The most significant threats to the western pond turtle are the continuing loss, degradation, and fragmentation of occupied habitats. Agricultural-related disturbances to wetlands and streams (e.g., water diversions) and removal of aquatic vegetation can render wetlands unsuitable for pond turtles. The destruction of upland habitats for agricultural or urban development can have significant adverse consequences on nesting success. Water releases from reservoirs may adversely affect downstream habitat by eliminating or altering basking sites, refugia, foraging areas, and hatchling microhabitat.			
Status in Range: Species range extends from most Pacific slope drainages from Klickitat County, Washington, along the Columbia River, to Arroyo Santa	**Reserve System Components:** Protection of 2,400 acres of aquatic habitat and 3,475 acres of nesting and	**Permanent:** Up to 3,502 acres of habitat, including	Assessment of habitat quality and documentation of baseline population levels in

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Domingo in northern Baja California. In California, it was historically present in most Pacific slope drainages between the Oregon and Mexican borders. Occurring in 90% of its historic California range in the Central Valley and west of the Sierra Nevada, its numbers have been greatly reduced. Species is reported to be declining at a global scale; however, the species status in California is unknown due to lack of data.	overwintering habitat for western pond turtle. The Conservancy will protect at least three western pond turtle breeding sites. The Conservancy will also restore freshwater emergent wetland to result in no net loss of this natural community,	up to 369 acres of aquatic habitat and 3,133 acres of nesting and overwintering habitat (1% of the total habitat in the Plan Area)	potential habitat within reserve system lands. Determination of population response (i.e., changes in the average number of individuals basking) to enhancement and restoration of occupied habitat. Assessment of effects of habitat management (e.g., livestock exclusion) on nesting and basking habitat and determine population response.
Status in Plan Area: 191,092 acres of modeled habitat, of which 43,945 acres are in categories 1 and 2 baseline public and easement lands. The distribution of western pond turtles throughout suitable habitat in the Plan Area is not well known. The species has been documented in Davis Creek in the Davis planning unit (planning unit 20), Lower Putah Creek planning unit (planning unit 9), Lower Cache Creek planning unit (planning unit 7), and in the Willow Slough Bypass in the Willow Slough Basin planning unit (planning unit 11).	**Management and Enhancement:** Management and enhancement of habitat in the reserve system through invasive species control and creation of basking sites.	**Temporary:** Up to 143 acres of habitat, including up to 31 acres of aquatic habitat and 112 acres of nesting and overwintering habitat (<1% of the total habitat in the Plan Area).	
Conditions on Covered Activities: Avoidance and minimization measures for the valley foothill riparian and lacustrine natural communities (which require a 100-foot (minimum) permanent buffer zone from the canopy drip-line), wetlands, ponds, and streams will ensure that effects of covered activities are avoided and minimized. If modeled upland habitat will be impacted, a qualified biologist must be present and will assess the likelihood of western pond turtle nests occurring in the disturbance area (based on sun exposure, soil conditions, and other species habitat requirements). If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground disturbing activity for nests that may be unearthed during the disturbance, and will move out of harm's way any turtles or hatchlings found. Farmers and land managers in the reserve system will follow practices to minimize disturbance during ditch maintenance.			

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Net effects: With full implementation of the Yolo HCP/NCCP, an estimated 27% of the habitat in the Plan Area will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. Of these lands, at least 5,875 acres will consist of newly protected lands in the reserve system. All lands in the reserve system supporting western pond turtle habitat will be adaptively managed to sustain habitat values for this species in the Plan Area. Overall, the Yolo HCP/NCCP will provide a substantial net benefit to the western pond turtle through the assembly of a reserve system in association with existing conservation lands, and the management and monitoring of reserve system lands to support the species. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on western pond turtle, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			
Giant Garter Snake/(T/T)			
 In Yolo County, giant garter snakes are often found in rice fields, where they can find small fish, tadpoles and frogs to eat. Female garter snakes grow to be a foot longer and are three times heavier than male snakes. Garter snakes are not dangerous to humans. Giant garter snakes overwinter in burrows and crevices as far as 820 feet from the edge of wetland habitats, presumably to reach areas above the annual high water mark. Movement between high quality foraging habitats is important for giant garter snakes and in an agricultural setting, giant garter snakes rely largely upon the interconnected network of canals and ditches for movement. Continued loss of wetland or other suitable habitat resulting from agricultural and urban development constitutes the greatest threat to this species' survival. However, populations in Yolo County persist primarily in agricultural areas such as rice fields. Snakes remaining in rice fields are subject to threats from mechanical harvesting, including disrupted foraging, thermoregulating, or direct mortality; the extent of these threats is unknown.			
Status in Range: The current known distribution extends from near Chico in Butte County south to the Mendota Wildlife Area in Fresno County. Within this range, garter snakes are distributed in 13 unique population clusters coinciding with historical flood basins, marshes, wetlands, and tributary streams of the Central Valley. These populations are isolated, without protected dispersal corridors to other adjacent populations, and are threatened by land use practices and other human activities, including development of wetland and suitable agricultural habitats.	**Reserve System Components:** 7,195 acres newly protected lands, including 2,800 acres rice habitat, 500 acres fresh emergent wetland habitat, 420 acres lacustrine and riverine habitat, 1,160 acres active seasonal upland and moving habitat (within 200 feet of aquatic habitat), and 2,315 acres overwintering habitat (between 200 and 800 feet from aquatic habitat). All land counting toward this commitment will be occupied as defined in Section 6.4.1.8.3, *Giant Garter Snake.*	**Permanent:** 1,966 acres (3%) of aquatic and surrounding upland habitat An estimated 57 miles (5%) of drainage channels providing habitat	Conducting surveys of occupied and potential habitat. Evaluating sites against performance criteria for occupancy. Evaluating species response to habitat management, enhancement, and restoration. Determining species response to predator control programs. Determining effects of and response to additional threats, such as diseases.

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
	2,910 acres modeled habitat added to reserve system from pre-permit reserve lands. Restoration of aquatic habitat at a ratio of 1 acre restored for each acre lost as a result of covered activities.		
Status in Plan Area: 77,056 acres of modeled giant garter snake habitat, of which 25,074 acres are in categories 1 and 2 baseline public and easement lands. Giant garter snakes are documented in two distinct subpopulations in the Plan Area. The Colusa Basin subpopulation is in the northeastern portion of the Plan Area, in the Colusa Basin and Colusa Basin Plains planning units (planning units 12 and 13). The Willow Slough/Yolo Bypass subpopulation is in the southeastern portion of the Plan Area, primarily in the Willow Slough Basin and South Yolo Bypass planning units (planning units 11 and 18) but extending into the Woodland planning unit (planning unit 19).	**Management and Enhancement:** Management and enhancement of habitat in the reserve system to benefit the species through invasive species control, leaving vegetation along channels where possible, and other measures deemed necessary to reduce or eliminate threats to the species as identified through monitoring. Adaptive management to maximize occupancy on reserve system lands.	**Temporary:** Nine acres, including one acre of aquatic, three acres of active season upland habitat, and five acres of overwintering habitat.	
Conditions on Covered Activities: For avoidance, project proponents will design projects to remain at least 200 feet from aquatic habitat. If avoidance is infeasible, applicants will implement standard construction monitoring and minimization measures for giant garter snake as specified in AMM 15. Farmers and land managers in the reserve system will follow practices to minimize disturbance during ditch maintenance.			
Net effects: Less than 1% net loss of rice habitat for giant garter snake, no net loss of fresh emergent wetland and aquatic habitat, and a net 2% decrease in total habitat for this species. 43% of the giant garter snake habitat in the Plan Area will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. Of this 43%, at least 7,195 acres will be newly protected lands, and at least 2,910 acres will be pre-permit reserve lands. All of the reserve system lands will be monitored and adaptively managed to sustain habitat values for giant garter snake. Management will include providing water during the giant garter snake's active season. Most of the habitat that will be lost as a result of covered activities is located outside of the two subpopulation centers for giant garter snake that occur in the Plan Area. Giant garter snake habitat will be protected in and around these two subpopulations to protect and facilitate their expansion. Additional lands will be protected and restored to provide connectivity and facilitate genetic exchange between these two important subpopulations. Overall, the Yolo HCP/NCCP will provide a substantial net benefit to the giant garter snake through the assembly of a reserve system in association with existing conservation lands consistent with the recovery needs for the giant garter snake. The reserve system will be monitored and adaptively managed to support the species. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on giant garter snake, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Swainson's Hawk/(-/T)			
 The Swainson's hawk arrives to the Central Valley from its winter home in Central Mexico around March each year. Breeding mother hawks sometimes travel up to 18 miles from their nests to forage for food. The Swainson's hawk often will hunt behind tractors to find exposed small rodents. The Swainson's hawk inhabits grasslands, prairies, shrub-steppes, and agricultural landscapes, including dry and irrigated row crops, alfalfa and hay fields, pastures, and rangelands. They nest in trees most often in riparian woodlands and farm shelterbelts, as well as in urban/suburban areas with large trees adjacent to suitable foraging habitat. In California, causes of population decline are thought to be loss of nesting and foraging habitat to urban development and conversion to unsuitable agriculture such as orchards and vineyards. The most effective approach for Swainson's hawk conservation may be in the management of agricultural landscapes.			
Status in Range: Breeds in the open grasslands, shrub-steppe and agricultural regions of western North America from southern Canada to northern Mexico. Central Valley Swainson's hawks winter from Central Mexico, to northern and central South America. With the conversion of much of the species' historical range to agriculture, the Swainson's hawk has adapted to agricultural landscapes compatible with its foraging needs and in proximity to suitable nesting habitat.	**Reserve System Components:** 20,392 newly protected acres, including 1,600 acres of nesting habitat, 4,430 acres of natural foraging habitat, and 14,362 acres of agricultural foraging habitat. 4,580 acres modeled habitat added to reserve system from pre-permit reserve lands. At least 20 newly protected nest trees. Restored valley foothill riparian forest at a ratio of 1 acre restored for each acre lost, providing Swainson's hawk nesting habitat.	**Permanent:** 11,757 acres (4%), including 651 acres of nesting, 1,407 acres of natural foraging, and 9,399 acres of agricultural foraging habitat. Up to 20 nest trees.	Every 5 years, conducting a complete census of the breeding population. Monitoring cropping patterns. If the nesting population declines by more than 10% below the baseline number (300 pairs), this will initiate a meet and confer process with the wildlife agencies as described in Chapter 7. The Conservancy and the wildlife agencies will examine causes for population declines, and will develop a strategy for addressing the decline if it is found to be related to Swainson's hawk loss as a result of changing cropping patterns.
Status in Plan Area: 309,087 acres of modeled Swainson's hawk habitat, with 15,673 acres of nesting habitat, 79,336 acres of natural foraging habitat, and 214,078 acres of agricultural foraging habitat. 25,075 acres of habitat in the Plan Area are in categories 1 and 2 baseline public and easement lands. The population in the Plan Area is large and widely distributed, with an estimated 300 nesting pairs, representing about 14% of the statewide population.	**Management and Enhancement:** Management and enhancement of Swainson's hawk habitat in the reserve system as follows: plant trees within agricultural foraging habitat in the reserve system as needed to achieve a density of one suitable nesting tree per 10 acres; protect remnant noncultivated areas of high value to wildlife within cultivated	**Temporary:** 224 acres of agricultural foraging habitat.	

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
	land reserves; establish new hedgerows along field borders and roadsides to enhance prey populations; and manage and enhance natural foraging lands to further enhance prey populations and habitat suitability. Prioritize protection of lands that are regularly planted in high value crop types for the species.		
Conditions on Covered Activities: For avoidance, project proponents will design projects to avoid potential nest trees by with minimum 1,320 foot setbacks from the trees. If this avoidance cannot be accomplished, project proponents will implement minimization measures. For construction, from March 15 to August30, no activity will be allowed within 1,320 feet of active nests (as identified through preconstruction surveys), unless a qualified biologist has determined that the young have fledged and the nest is no longer active, or unless the Conservancy, USFWS, and CDFW agree to a lesser buffer distance. For activities that involve tree pruning and removal, if occupied nest sites are present within 1,320 feet, tree pruning and removal will be deferred until the nest is no longer being used.			
Net Effects: Full implementation of the Yolo HCP/NCCP will result in an estimated 2% net decrease of total Swainson's hawk natural foraging habitat and a 4% net decrease of agricultural foraging habitat in the Plan Area. The Yolo HCP/NCCP will result in an estimated 3% net decrease in nesting habitat for Swainson's hawk, but the actual net loss is expected to be less than 3% because this does not factor in the tree plantings required. 19,286 acres of natural foraging habitat and 22,508 acres of agricultural foraging habitat will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. This represents 14% of the natural and agricultural foraging habitat in the Plan Area. Additionally, 4,517 acres of nesting habitat, representing 31% of the nesting habitat in the Plan Area, will be conserved in categories 1 and 2 public and easement lands. At least 20,285 acres of this will consist of newly protected lands, and at least 4,795 acres will consist of pre-permit reserve lands. These newly protected and pre-permit reserve lands will be included in the HCP/NCCP reserve system, and will be monitored and adaptively managed to sustain Swainson's hawk habitat values. Overall, the Yolo HCP/NCCP will provide a substantial net benefit to the Swainson's hawk. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on Swainson's hawk, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
White-tailed Kite/(MBTA/CSC, FP)			
 The white-tailed kite has a distinctive white underside with a gray back and red eyes. The kite often nests near fellow kites and raptors such as the Swainson's hawk. White-tailed kites are often found in areas with high populations of meadow voles, its favorite meal. The white-tailed kite inhabits low elevation, open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Habitat elements that influence nest site selection and distribution include habitat structure and prey abundance (primarily the meadow vole), while the association with specific vegetation types appears less important. Residential, commercial and infrastructure development is one of the principal causes of habitat loss for white-tailed kite. In general, kites are intolerant of noise and human activities and will abandon nesting areas that are subject to increasing levels of human disturbances. Kites are also sensitive to habitat fragmentation; low density urbanization or isolation of habitats, even if relatively large patches remain undisturbed, also leads to territory abandonment.			
Status in Range: East Coast and southeast United States, the southwest United States from Texas to California, and north to Washington State, and from Mexico to South America. California is currently considered the breeding range stronghold for the white-tailed kite in North America, with nearly all areas up to elevations at the western Sierra Nevada foothills and southeastern deserts occupied.	**Reserve System Components:** 18,685 acres of foraging habitat and 1,600 acres of nesting habitat. Restored valley foothill riparian forest at a ratio of 1 acre restored for each acre lost, providing white-tailed kite nesting habitat. At least two nest trees on protected lands.	**Permanent:** Up to 11,239 acres (4%) of modeled habitat, including 661 acres of nesting habitat, 10,578 acres of foraging habitat. Up to two nest trees.	Conducting surveys of occupied and potential habitat. Evaluating species response to habitat management, enhancement, and restoration. Determining species response to predator control programs. Determining effects of and response to additional threats.
Status in Plan Area: 268,230 acres of modeled habitat of which 20,092 acres are in categories 1 and 2 baseline public and easement lands. Comprehensive surveys of the Plan Area for white-tailed kite have not been conducted. Jim Estep surveyed the lowland portion of Yolo County in 2007, and reported a total of 13 nest sites. Most of these nests were found in riparian areas, including three along Putah Creek, three along Willow Slough, two along Dry Slough, one along the Sacramento River, one along Willow Slough Bypass, and along the Knights Landing Ridge Cut. Two nonriparian sites were reported in West Sacramento and Dunnigan.	**Management and Enhancement:** Management and enhancement of habitat in the reserve system as follows: plant trees within agricultural foraging habitat in the reserve system as needed to achieve a density of one suitable nesting tree per 10; protect remnant noncultivated areas of high value to wildlife within cultivated land reserves; establish new hedgerows along field borders and roadsides to enhance prey populations; and	**Temporary:** Up to 234 acres of foraging habitat.	

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
	manage and enhance natural foraging lands to further enhance prey populations and habitat suitability. Prioritize protection of lands that are regularly planted in high value crop types for the species.		

Conditions on Covered Activities: For avoidance, project proponents will design projects to avoid potential nest trees by with minimum 1,320 foot setbacks from the trees. If this avoidance cannot be accomplished, project proponents will implement minimization measures. For construction, from March 15 to August 30, no activity will be allowed within 1,320 feet of active nests (as identified through preconstruction surveys), unless a qualified biologist has determined that the young have fledged and the nest is no longer active, or unless the Conservancy, USFWS, and CDFW agree to a lesser buffer distance. For activities involving tree pruning and removal, if occupied nest sites are present within 1,320 feet, tree pruning and removal will be deferred until the nest is no longer being used.

Net Effects: With full implementation of the Yolo HCP/NCCP, an estimated 0% net decrease of nesting habitat and a 4% decrease in foraging habitat for white-tailed kite in the Plan Area. 16% (41,342 acres) of white-tailed kite habitat in the Plan Area will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. Of these, at least 20,285 acres will be newly protected and incorporated into the reserve system, and an additional 4,795 acres of pre-permit reserve lands will be enrolled into the reserve system. All reserve system lands will be monitored and adaptively managed to sustain white-tailed kite habitat values. The Yolo HCP/NCCP will minimize and mitigate impacts on white-tailed kite, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.

Western Yellow-billed Cuckoo/(T/T)

The western yellow-billed cuckoo migrates north from South America to California around May each year. They breed in June and July, likely due to a seasonal abundance of large insects. Male and female parents share incubating and brooding duties and deliver food to their young. The western yellow-billed cuckoo nests and forages in riparian habitats. Nests are primarily in willow (*Salix* spp.) trees and cottonwood (*Populus fremontii*) trees are important as foraging habitat, particularly as a source of insect prey. All studies indicate a highly significant association with relatively expansive stands of mature cottonwood-willow forests, especially dynamic riverine habitats where the river is allowed to meander. Meandering streams create habitat for new rapidly-growing young stands of willow, which create preferred nesting habitat conditions. Channelized streams or levied systems that do not allow for these natural processes become over-mature and presumably less optimal. Habitat loss and degradation continues to be the most significant threat to remaining populations. Habitat loss continues as a result of bank stabilization and flood control projects, urbanization along edges of watercourses, agricultural activities, and river management that alter flow and sediment regimes.

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Status in Range: Breeding populations of the western subspecies are limited to California, Nevada, Utah, Arizona, southwestern Wyoming, southeastern Idaho and the western parts of New Mexico, Texas, and Colorado. There may be fewer than 50 breeding pairs of western yellow-billed cuckoo in California.	**Reserve System Components:** 1,600 acres of newly protected valley foothill riparian natural community, at least 500 acres of which will provide modeled habitat for western yellow-billed cuckoo, and design at least 60 acres to provide suitable habitat. Restored valley foothill riparian forest at a ratio of 1 acre restored for each acre lost, providing western yellow-billed cuckoo habitat.	**Permanent:** Up to 59 acres of modeled habitat.	Monitoring and evaluation of habitat conditions in the reserve system. Evaluation of species response to habitat management, enhancement, and restoration. Monitoring occupied breeding habitat, if any, for threats.
Status in Plan Area: 3,868 acres of modeled habitat in the Plan Area, 1,162 acres of which are on categories 1 and 2 baseline public and easement lands. Although sustained breeding populations occur to the east of the Plan Area at isolated sites along the Sacramento River, no western yellow-billed cuckoo breeding has been recorded recently in the Plan Area. Since 1965, nine occurrences of western yellow-billed cuckoo have been recorded in the Plan Area, two of which (both in the vicinity of Fremont Weir) are from the last 10 years. All of these records are presumed to be migrants and nonbreeding individuals.	**Management and Enhancement:** Management and enhancement of habitat in the reserve system through invasive species control and other measures deemed necessary to eliminate or reduce threats to the species as determined through monitoring.	**Temporary:** 0 acres.	
Conditions on Covered Activities: Project proponents will avoid activities within 500 feet of occupied nesting habitat			
Net Effects: Full implementation of the Yolo HCP/NCCP will result in no net loss of habitat in the Plan Area. 45% of western yellow-billed cuckoo habitat in the Plan Area will be conserved, including baseline and newly protected lands. Of these, at least 500 acres will consist of newly protected lands incorporated into the reserve system. All reserve system lands supporting western yellow-billed cuckoo habitat will be monitored and adaptively managed to sustain habitat values for this species. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on western yellow-billed cuckoo, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Western Burrowing Owl/(-/CSC)			
	Burrowing owls do not make their own burrows. They instead choose burrows from other species, most commonly ground squirrels. Burrowing owls often adopt burrows near airports, golf courses and roads. Burrowing owls are found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals. They also occupy golf courses, airports, road and levee embankments, and other disturbed sites where there is sufficient friable soil for burrows. Because they typically use the burrows created by other species, presence of these species is usually a key indicator of potential occurrence of burrowing owl. Optimal nesting locations are within an open landscape with level to gently sloping topography, sparse or low grassland or pasture cover, and a high density of burrows. Burrowing owls forage in open grasslands, pasturelands, agricultural fields and field edges, fallow fields, and along the edges of roads and levees. Urbanization, including residential and commercial development, is one of the principal causes of habitat loss for burrowing owls and is a continuing threat to remaining northern California populations. As some owls nest on the edge of, and forage within, agricultural fields, the conversion of field crops such as hay and pasture to incompatible crop types can lead to the abandonment of traditional nest sites.		
Status in Range: Species is found throughout western North American, west of the Mississippi River and south into Mexico. In California, species range extends through the lowlands south and west from north central California to Mexico, with small, scattered populations occurring in the Great Basin and the desert regions of the southwestern part of the state. Species is absent from the coast north of Sonoma County and from high mountain areas. Populations have been greatly reduced or extirpated from most of the San Francisco Bay Area and along the California coast to Los Angeles. The remaining major population densities are in the Central and Imperial Valleys. Species is reported to be declining at a global scale, as well as within California.	**Reserve System Components:** 3,000 acres of newly protected modeled primary habitat. 2,500 acres of newly protected modeled other habitat. At least two western burrowing owl active nesting sites and surrounding habitat to sustain these occurrences. Additionally, at least at least two active nesting sites for each nesting pair displaced by covered activities, and one active nesting site or single owl site for each non-breeding single owl displaced by covered activities. (An active nesting site is defined as a breeding burrow or burrow complex occupied by a single breeding pair. A single owl site is defined as a burrow or burrow complex occupied by a nonbreeding individual.)	**Permanent:** Up to 3,172 acres of modeled western burrowing owl habitat, including 861 acres of primary habitat and 2,311 acres of other habitat. Loss of up to four occupied sites, provided criteria for protecting occupied sites are met.	Assessment of habitat quality and document available nesting, foraging, and overwintering habitat within the reserve system. Tracking species response to grassland management by monitoring California ground squirrel colonies to determine burrow availability.

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
	1,100 acres of pre-permit reserve lands supporting habitat for this species, to be enrolled into the reserve system.		
Status in Plan Area: 103,854 acres of modeled habitat in the Plan Area, 6,205 acres of which are in categories 1 and 2 baseline public and easement lands. Although the Plan Area has not been comprehensively surveyed for this species, the majority of *known* locations are in the southern portion of Yolo County, centered in and around the City of Davis, the Yolo Bypass Wildlife Area, and the South Yolo Bypass Planning Unit.	**Management and Enhancement:** Management and enhancement of habitat in the reserve system by creating conditions for increasing the abundance of native rodents and reducing the relative cover of nonnative grasses and forbs that reduces habitat value for covered and native species. Maintenance and enhancement of other habitat (cultivated lands) to maintain or increase the abundance of native rodent species that provide prey for raptors. Elimination or reduction of other threats as identified through monitoring.	**Temporary:** Up to 219 acres.	
Conditions on Covered Activities: Project proponents will avoid all nest sites consistent with AMM18 (Chapter 4). Construction may occur inside the disturbance buffer if the project proponent develops an avoidance minimization, and monitoring plan as described in AMM18.			
Net effects: With full implementation of the Yolo HCP/NCCP there will be an estimated net 3% decrease of modeled habitat in the Plan Area. 17% of the habitat in the Plan Area will be conserved on categories 1 and 2 public and easement lands, including baseline and newly protected lands. Of these lands, at least 5,500 acres will consist of newly protected lands supporting modeled habitat, which will be incorporated into the reserve system, and an additional 1,100 acres of pre-permit reserve lands supporting modeled western burrowing owl habitat will be enrolled into the reserve system. All reserve system lands will be monitored and adaptively managed to sustain habitat value for this species. At least two active nest sites will be protected and managed in the reserve system as described above. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on western burrowing owl, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Least Bell's Vireo/(E/E)			
	The Least Bell's vireo is a small bird that lives in California during the summer months before migrating to Mexico around August each year. It nests in dense woodlands near rivers. Least Bell's vireos are migratory and usually arrive to their California breeding grounds in mid-March to early April from their wintering grounds in Mexico. Observations of banded birds suggest that returning adult breeders may arrive earlier than first-year birds by a few weeks . Least Bell's vireos begin departing for their wintering grounds by late July but are generally present on their breeding grounds until late September.		
Status in Range: Breeds in North America and overwinters primarily along the Pacific Coast in southern Mexico. Breeding range extends from north central to southwestern U.S. and into central Mexico. Additional breeding sites have been documented from southwestern California and northwestern Baja California to central South Dakota, east to Illinois and northwestern Indiana, south to the gulf coast and into southern Sonora. Recently, breeding individuals have been reported as far north as southern Santa Clara County along Llagas Creek and in southeastern Monterey, western Merced, and Stanislaus Counties, demonstrating that the species may be expanding back into its historical range. Species is reported to be declining at a global scale, as well as in California; however, there is recent evidence of range extensions in San Joaquin Valley.	**Reserve System Components:** 1,600 acres newly protected valley foothill riparian natural community, of which at least 600 acres will provide suitable habitat for least Bell's vireo. Restoration at a ratio of 1 acre restored for each acre lost as a result of covered activities.	**Permanent:** Up to 39 acres (2%) of modeled habitat	Surveying riparian woodland during the nesting season to document and monitor species status. Evaluation of species response to habitat enhancement and restoration. Documenting nesting success, once breeding pairs becomes established in the permit area.
Status in Plan Area: 4,719 acres modeled habitat, 1,284 acres of which are in categories 1 and 2 baseline public and easement lands. The USFWS indicates the least Bell's vireo may have been extirpated from the Plan Area by 1996. In April 2010, however, two least Bell's vireos were positively identified in the southern portion of the Yolo Bypass Wildlife Area, and the two birds subsequently returned in the spring of 2011. Breeding has not yet been	**Management and Enhancement:** Enhancement and maintenance of habitat functions in the reserve system by reducing the relative extent of nonnative plants that degrade habitat function, and improving native plant diversity and vegetation structure. Eliminating or reducing	**Temporary:** 0 acres	

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
confirmed in the Plan Area. It is likely to occur during the permit term because incidences of breeding pairs have been increasing in the species' northern range.	other threats to breeding vireos as identified through monitoring.		
Conditions on Covered Activities: Project proponents will avoid suitable nesting habitat, and if habitat is unavoidable, project proponents will maintain a minimum 500-foot setback from active nests. A lesser buffer may be approved by the wildlife agencies on a case-by-case basis.			
Net Effects: With full implementation of the Yolo HCP/NCCP there will be an 11% net increase of habitat in the Plan Area. 63% of least Bell's vireo habitat in the Plan Area will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. At least 1,168 acres (600 protected and 568 restored) of these lands will consist of newly protected lands. All of the least Bell's vireo habitat in the reserve system will be monitored and adaptively managed will be to sustain habitat values for this species. The Yolo HCP/NCCP will minimize and mitigate impacts on least Bell's vireo, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			
Bank Swallow/(–/T)			
	The bank swallow is a small gray and white bird that breeds in burrows on vertical cliffs near bodies of water. Female bank swallows frequently reject burrows that males have painstakingly cleared for them until they find a burrow suited to their high standards.		
Status in Range: Breeding range extends throughout most of Alaska and Canada, southward from eastern Montana to Nevada, and eastward across the United States to Georgia. They are variably distributed throughout California, Texas, and New Mexico. In California, regular breeding occurs in Siskiyou, Shasta, Lassen, and Yolo Counties, and along the Sacramento River from Shasta County south to Yolo County. Between 2000 and 2008, estimated numbers of breeding pairs in California have fluctuated between 6,320 and 8,530.	**Reserve System Components:** 50 acres of newly protected habitat, on a site that is occupied by bank swallows. A *site* is a habitat patch within one tenth of a mile of an occupied burrow.	**Permanent:** 37 acres	Documentation and monitoring of species status and document additional threats.

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Status in Plan Area: 962 acres of modeled nesting habitat, 6 acres of which are on baseline public and easement lands. An active colony is present along Cache Creek. In 2000, four colonies with an estimated 202 pairs were found along the Sacramento River in Yolo County between Verona and Knights Landing.	**Management and Enhancement:** Management of the protected floodplain along Cache Creek to provide high-value foraging habitat for bank swallows by promoting open grass and wildflower vegetation and by controlling invasive plant species. Elimination or reduction of additional threats on reserve lands identified through monitoring.	**Temporary:** Up to 37 acres of erodible floodplain (does not include actual banks)	
Conditions on Covered Activities: No activity within 500 feet of nesting colony that has been active within the last 5 years unless approved by the Conservancy, USFWS and CDFW.			
Net Effects: With full implementation of the Yolo HCP/NCCP there will be a 4% decrease in bank swallow habitat in the Plan Area. 6% of the bank swallow habitat in the Plan Area will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. Of this, 50 acres of habitat will be newly protected, monitored, and adaptively managed to sustain habitat values for this species. The Yolo HCP/NCCP will minimize and mitigate impacts on the bank swallow, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			
Tricolored Blackbird/(–/E)			
 The tricolored blackbird is almost entirely white, except for a bright red shoulder patch with a white border, explaining its name. While the red-winged blackbird can be found all over the continent, nearly all tricolored blackbirds are found in California.			
Status in Range: Species is endemic to the west coast of North America, mostly in California. The breeding population is concentrated in the Central Valley with scattered sites occurring in Oregon, Washington, Nevada, and the western coast of Baja California. In California, the historic breeding range included Sacramento and San Joaquin Valleys, lowlands of the Sierra Nevada south to Kern County, the coast region	**Reserve System Components:** 16,810 acres of newly protected grasslands and cultivated lands seminatural community expected to provide tricolored blackbird foraging habitat. 300 acres of fresh emergent wetland natural community, at least 200 acres	**Permanent:** Up to 9,028 acres of modeled habitat, including 86 acres of nesting habitat and 8,942 acres of foraging habitat.	Assessment of habitat quality, species occupancy, and colony size of all suitable nesting habitat in reserve system. Evaluation of species response to habitat enhancement, restoration, or creation. Monitoring nesting

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
from Sonoma County to the Mexican border, and sporadically on the Modoc Plateau. Species has experienced major declines since 1994. Species is reported to be declining at a global scale, as well as within California.	of which will be sited in modeled tricolored blackbird nesting habitat. Restoration of fresh emergent wetland to achieve no net loss of this natural community, potentially providing additional nesting opportunities for tricolored blackbird. 4,150 acres of pre-permit reserve lands supporting tricolored blackbird habitat to be enrolled into the reserve system. The reserve system will include at least two tricolored blackbird colonies and prioritize protection of additional colonies.	This loss represents 2% of the modeled habitat in the Plan Area.	colony response to nonnative plant removal. Determining need for predator control programs.
Status in Plan Area: 265,813 acres nesting and foraging habitat in the Plan Area, 19,893 acres of which are on categories 1 and 2 baseline public and easement lands. Comprehensive surveys of the Plan Area have not been conducted. Species locality databases document fourteen colonies in Yolo County from 1994 to 2004. Most of these occurrences were in the Yolo Slough and Yolo Bypass areas. Surveys in 2007 identified a colony of 30,000 breeding adults nesting in milk thistle on the Conaway Ranch in the Yolo Bypass.	**Management and Enhancement:** Management and enhancement of habitat within the reserve system to maintain or improve habitat value for this species. Elimination or reduction of threats to the species identified on the reserve system through monitoring.	**Temporary:** Up to 230 acres foraging habitat.	
Conditions on Covered Activities: If active colony is present or has been present within the last 5 years, project proponents will design project to avoid adverse effects within 1,300 feet of the colony site(s) unless a shorter distance is approved by the Conservancy, USFWS, and CDFW based on site-specific conditions. Measures are also provided to avoid take of tricolored blackbirds potentially nesting within cultivated crops in the reserve system.			
Net Effects: Full implementation of the Yolo HCP/NCCP will result in no net change in acres of nesting habitat, and a net 3% decrease in foraging habitat in the Plan Area. 49% of nesting habitat (2,260 acres) and 14% of foraging habitat (34,529 acres) in the Plan Area will be conserved in categories 1 and 2 public and easement lands, including baseline and newly protected lands. At least 16,810 acres of these lands will be newly protected lands in the reserve system, and an additional 4,150 acres of pre-permit reserve lands will be enrolled into the reserve system. At least two nesting colonies will be protected within the reserve system. All reserve system lands supporting tricolored blackbird habitat will be monitored and adaptively managed to sustain habitat value for tricolored blackbird. The Yolo HCP/NCCP will minimize and mitigate impacts on tricolored blackbird, to the maximum extent practicable, and provide for the conservation of this species in the Plan Area.			

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Palmate-bracted Bird's Beak/(E/E)			
	The palmate-bracted bird's-beak is actually a plant! The whole plant stands less than 1 foot tall and is covered in short hairs that excrete salt crystals. Bees help the bird's-beak transfer pollen between its male and female reproductive systems to produce seeds.		
Status in Range: The species is currently known from seven small population groups. Two population groups (Delevan National Wildlife Refuge and Colusa National Wildlife Refuge) are large and relatively stable, both being protected and managed on federal lands. One group (at Sacramento National Wildlife Refuge) consists of three small populations, all of which were established via translocated seeds, and another group (at Mendota Wildlife Area/Alkali Sink Ecological Reserve) consists of two small populations, one of which was established via translocated seeds. A group on private lands in western Madera County consisted of a few widely scattered individuals; the habitat at that location has been disked, and the population may no longer be present. Habitat for the population in Livermore is partially preserved, but no management activities have been implemented to maintain the population.	**Reserve System Components:** 33 acres newly protected modeled habitat (Woodland Regional Park)	**Permanent:** Up to 4 acres of modeled habitat. This loss represents 2% of the total modeled habitat in the Plan Area.	Completion of baseline surveys to document species occurrence and relative abundance within habitat on the reserve system, and assess whether population is meeting the objective of a 10% increase based on a 10-year average. Annual monitoring for a minimum of three years (however the length of this survey will be dependent on water year types) that will continue until population has been determined to be stable or increasing, or as directed by the monitoring

Species/Status (Federal/State)	Protection, Restoration, Management and Enhancement	Habitat Loss	Monitoring
Status in Plan Area: 309 acres of modeled habitat, 141 acres of which are on categories 1 and 2 public and easement lands. Modeled habitat is located in the Colusa Basin Plains planning unit: the species has not been documented at this location. A second location overlaps the Woodland and Willow Slough Basin planning units, and supports two known occurrences. Based on genetic studies, these two occurrences represent a single population.	**Management and Enhancement:** Management and enhancement of the habitat function in the reserve system to maintain or increase the population in the Plan Area. This may involve translocation of plants from another location upon wildlife agency approval.	**Temporary:** Up to 0 acre of modeled habitat.	requirements for future restoration activities. Monitoring response of actions to expand the population on the reserve system.
Conditions on Covered Activities: Project proponents will design projects to avoid disturbance within 250 feet of occupied habitat.			
Net effects: With full implementation of the plan there will be a net loss of 1% (four acres) of palmate-bracted bird's beak habitat in the Plan Area. The Yolo HCP/NCCP will place a conservation easement on 33 acres of habitat on Woodland Regional Park. With full implementation of the Yolo HCP/NCCP, 56% of the palmate-bracted bird's beak habitat in the Plan Area will be protected on category 1 public and easement lands. 100% of the occupied habitat will be protected. This land will be monitored and adaptively managed and enhanced to sustain and improve values for palmate-bracted bird's beak. Therefore, the Yolo HCP/NCCP will minimize and mitigate impacts on palmate-bracted bird's beak, to the maximum extent practicable, and will provide for the conservation of this species in the Plan Area.			

1. Status

Federal	State
E = Federally Listed as Endangered	E = State Listed as Endangered
T = Federally Listed as Threatened	T = State Listed as Threatened
MBTA = Migratory Bird Treaty Act	SR = State Listed as Rare
CNPS = California Native Plant Society	CSC = California Special Concern Species
	FP = Fully Protected

1B. Rare, Threatened, or Endangered in California and Elsewhere