Yolo Habitat Conservancy

Yolo

Habitat Conservation Plan / Natural Community Conservation Plan

Permitting Guide

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Implementation Handbook
Permitting Guide

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This permitting guide provides guidance to Yolo HCP/NCCP member agency staff and project applicants regarding the Yolo HCP/NCCP permitting process, as well as Special Participating Entities.

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Abbreviations and Common Terms

Acronyms and Abbreviations

AMM	avoidance and minimization measures (requirements to minimize impacts on habitat with which an applicant must comply to receive permit coverage under the Yolo HCP/NCCP)
APN	assessor's parcel number
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act (Public Resources Code § 21000 et seq.) and all regulations promulgated thereunder
CESA	California Endangered Species Act (California Fish and Game Code § 2050 et. seq.)
Conservancy	Yolo Habitat Conservancy
ESA	Federal Endangered Species Act (16 U.S.C. § 1531 et seq.)
HCP	Habitat Conservation Plan (federal)
NCCP	Natural Community Conservation Plan (state)
PRC	Public Resources Code
SPE	Special Participating Entity
USFWS	U.S. Fish and Wildlife Service
Yolo HCP/NCCP	Yolo Habitat Conservation Plan/Natural Community Conservation Plan

Common Terms

Appendix D of the Yolo HCP/NCCP contains a glossary primarily relevant to development of the plan. The terms and definitions below are specific to Yolo HCP/NCCP implementation. Land use planning terms and CEQA terms will retain their meaning when used or referenced in the course of implementing the Yolo HCP/NCCP. These terms are bolded and italicized at first use in the permitting guide.

avoidance and minimization measures (AMMs)	Measures required in the Yolo HCP/NCCP to avoid or minimize project effects on covered species and sensitive natural communities. These measures include surveys to verify the presence of covered species or habitat elements, modifying the project to avoid or minimize effects on covered species or sensitive natural communities, and measures to minimize effects during construction such as monitoring for Covered Species individuals and moving them out of harm's way.
biological evaluations	Evaluations described in Chapter 4 of this Permitting Guide. They include (1) initial assessment, (2) planning level survey, and (3) pre-construction surveys. See Chapter 4 for a description of each type of biological evaluation. See also *initial assessment, planning level survey,* and *preconstruction survey.*
buffer	See *Resource Protection Buffer* and *Land Cover Fee Buffer.*
Certificate of Approval	See Table 1-2.
Certificate of Compliance	See Table 1-2.
Certificate of Inclusion	See Table 1-2.
construction requirements	Requirements for avoiding and minimizing effects on covered species during construction, such as monitoring by a qualified biologist and moving covered species individual's out of harm's way if needed. This is a type of AMM. See also *preconstruction surveys.*
covered activity	Activities described in Chapter 3 of the Yolo HCP/NCCP for which the wildlife agencies have authorized incidental take permits pursuant to the Yolo HCP/NCCP. Member agencies and SPEs may secure permit coverage through the Yolo HCP/NCCP for implementation of these activities. Covered activities are based generally on general plans adopted at the time of Yolo HCP/NCCP development. Member agencies confirmed the activities during the planning process.
covered species	Species identified in Table 1-1 of the Yolo HCP/NCCP and Table 1-1 of this Permitting Guide. The Yolo HCP/NCCP provides permit coverage for impacts on covered species from covered activities.
developed	The developed land cover category includes three land cover types: urban and built up, urban ruderal, and vegetated corridors. See Table 2-1 for definitions of each land cover type. Also see Chapter 2, instructions for *Box C, Item 6* for a more detailed description of how to distinguish the urban-ruderal land cover type and agricultural and grassland land cover types.

discretionary	Discretionary projects and activities require compliance with the Yolo HCP/NCCP. *Discretionary project* means a project that requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations in which the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations. (California Environmental Quality Act [CEQA] Guidelines Section 15357.)
endangered	An endangered species is one that is at risk of becoming extinct throughout all or a significant portion of its range.
exemption from AMMs	An applicant does not have to comply with AMMs if eligible for this exemption. See Chapter 2, instructions for eligibility requirements. These are Yolo HCP/NCCP exemptions and differ from exemptions under CEQA.
exemption from fees	An applicant does not have to comply with fees (e.g., land cover, wetland) if eligible for this exemption. See Chapter 2 under instructions for Box C for eligibility requirements. These are Yolo HCP/NCCP exemptions and differ from exemptions under CEQA.
fees	Payments made to the Conservancy in return for incidental take coverage under the Yolo HCP/NCCP that allow the Conservancy to meet the mitigation requirements of the permits. The Conservancy charges different fee amounts depending on the type of land cover affected by the covered activity. For details about these fees, please see Table 1-3.
Final Application	See Table 1-2.
GeoMapper	An online mapping tool (available at www.yolohabitatconservancy.org/geomapper) that shows the Yolo HCP/NCCP planning units, identifies land cover types from the Yolo HCP/NCCP land cover dataset, and can be used to perform an analysis to help identify land cover types and associated AMMs likely to apply to a covered activity based on Yolo HCP/NCCP modeled habitat and known species occurrences. A property can be located with the GeoMapper by using the assessor's parcel number of the property or by creating an analysis area. The member agencies will, however, need to field-verify the land cover types and the GeoMapper should only be used early in the planning process for preliminary site evaluation.

incidental take	*Take* is defined in the Federal Endangered Species Act as an action of or attempt to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a federally listed species. Take is defined in the California Endangered Species Act as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill a state-listed species. *Incidental take* is take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity.
incidental take permits	Permits approved as a part of the Yolo HCP/NCCP that allow the take of endangered/threatened species incidental to an otherwise lawful activity (such as constructing a development or building a road). The U.S. Fish and Wildlife Service (USFWS) (federal) and the California Department of Fish and Wildlife (CDFW) (state) each issued a separate incidental take permit to the member agencies, contingent on compliance with and implementation of the Yolo HCP/NCCP.
initial assessment	Initial aerial examination of project site, often conducted by biological consultant. Used to evaluate land cover types and covered species habitat on and near the project site to determine eligibility for coverage under the Yolo HCP/NCCP.
land cover fee buffer	The zone around a permanent impact area that is included in the land cover fee calculations to account for indirect effects. See Chapter 6, Box E, Items 0 – 22.
land cover type	The characteristic vegetation and physical conditions of a land surface. The Yolo HCP/NCCP land cover data set (see definition for *GeoMapper*) is initially a compilation of many diverse spatial data sets compiled over many years during development of the plan to provide a regional-level analysis of land cover (Yolo HCP/NCCP Section 2.3). Ground truthing is necessary to confirm land cover types and quantities at specific project locations.
member agencies	The City of Davis, City of West Sacramento, City of Winters, City of Woodland, and Yolo County are collectively referred to as the *member agencies*. The member agencies are members of the Conservancy, a joint powers agency formed in 2002 to develop and implement the Yolo HCP/NCCP.
member agency project	A project carried out by one of the member agencies. Referred to in the Yolo HCP/NCCP as *public projects.*

ministerial	The Yolo HCP/NCCP does not cover ministerial projects and activities. A *ministerial* project or activity is a governmental decision involving little or no personal judgment or special discretion by the public official as to the wisdom or manner of carrying out the project. A ministerial decision involves only the use of fixed standards or objective measurements by applying the law to the facts as presented. Common examples of ministerial permits include automobile registrations, dog licenses, and marriage licenses. (CEQA Guidelines Section 15369.)
mitigation	For habitat conservation plans, *mitigation* means *to offset impacts of taking on the species.* In the Yolo HCP/NCCP glossary (Appendix D), *mitigation* is specifically defined as the protection or restoration of natural communities and covered species habitat necessary to replace the ecological functions of natural communities and species habitats affected by implementation of the covered activities. Mitigation is also defined as the protection of existing unprotected species occurrences or the establishment of new species occurrences to offset impacts of covered activities on species occurrences. Pursuant to CEQA Guidelines Section 15370, mitigation includes: a) Avoiding the impact altogether by not taking a certain action or parts of an action. b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation. c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment. d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. e) Compensating for the impact by replacing or providing substitute resources or environments.
modeled habitat	Modeled habitat represents land areas for which the Conservancy expects to provide habitat for covered species based on modeled habitat parameters (e.g., land cover type, distance from aquatic areas, topography, species occurrences) developed during the planning process in coordination with the wildlife agencies. The Conservancy must track covered species habitat loss based on modeled habitat as part of Yolo HCP/NCCP implementation.
parcel	Refers to a legal parcel at the time of the applicant's Yolo HCP/NCCP application.

permanent impacts	Impacts on natural communities or covered species modeled habitat that (1) result in the irreversible permanent removal, degradation, or alteration of a land cover type supporting natural communities or covered species habitat, or (2) affect the functions of a land cover type as a natural community or habitat for covered species for more than 1 year following implementation of the covered activity (e.g., creating a new road through grassland). Any natural community or species habitat loss associated with a covered activity that has a duration exceeding 1 year, or that has a duration of less than 1 year but takes more than 1 year to recover immediately following construction, is considered a permanent impact (Yolo HCP/NCCP Section 5.3; CEQA Guidelines Section 15358).
Permittees	Those entities requesting a section 10(a)(1)(B) incidental take permit from the U.S. Fish and Wildlife Service and a section 2835 take permit under the Natural Community Conservation Planning Act from the California Department of Fish and Wildlife for the species and activities covered in the HCP/NCCP. The Yolo HCP/NCCP Permittees include the City of Davis, City of West Sacramento, City of Winters, City of Woodland, Yolo County, and the Yolo Habitat Conservancy.
Plan Area	The geographic area covering all lands within Yolo County, approximately 653,549 acres and a 1,174-acre expanded area in Solano County for riparian conservation only on the south side of Putah Creek, described in the Yolo HCP/NCCP. (The Conservancy cannot permit covered activities in Solano County; it only conserve habitat.) Land and resources will be set aside within this area to implement conservation measures to preserve the covered species in the area to mitigate for the impact of covered activities and meet other Yolo HCP/NCCP requirements (Yolo HCP/NCCP Section ES.2).
planning level survey	Surveys conducted during the project planning and permitting process. There are two types of planning level surveys: 1) surveys conducted to assess land cover types and covered species habitat, and 2) surveys to determine the presence/absence of covered species through species-specific protocol surveys. Information is used to determine land cover impacts (extent of take), fees, and applicable AMMs.
planning units	The Yolo HCP/NCCP Plan Area is subdivided into 22 geographically based sub-regions, or planning units (Figure 1-1), including four urban planning units (Planning Units 19–22), within which most of the covered activities will occur. Thirteen of the other planning units (Planning Units 6-–18), the ones located in the eastern two-thirds of the Plan Area, are where most of the Yolo HCP/NCCP's reserve system will be established.

post-construction checklist	See Table 1-2.
Preliminary Application	See Table 1-2.
preconstruction survey	Survey conducted prior to construction (generally after issuance of Certificate of Approval, Certificate of Compliance, or Certificate of Inclusion) to confirm presence/absence of covered species and inform construction requirements. This is a type of AMM. See also *construction requirements.*
private project	A project carried out by a landowner or developer that requires discretionary approval by a member agency and is covered under the Yolo HCP/NCCP (see also member agency project and SPE project).
qualified biologist	Biologists formally approved by the Conservancy and wildlife agencies as having the experience, education, and training necessary to perform the tasks described in the Yolo HCP/NCCP accurately and in an unbiased fashion. The term qualified biologist is used generically to mean a biologist who is trained to perform the given task; such a person is, more specifically, a fisheries biologist, wildlife biologist, or botanist. Training must be in the field to which the task is related. For land cover verification, the qualified biologist must be competent in land cover delineation (Yolo HCP/NCCP Section 4.4). Applications for Conservancy approval of a qualified biologist are available on the Conservancy's website.
Reporting Form	See Table 1-2.
resource protection buffer	The zone around a biological resource (e.g., palmate-bracted bird's beak population or Swainson's hawk nest) that must be temporarily or permanently protected to avoid adverse effects on that resource.
Screening Form	See Table 1-2.
sensitive natural communities	Riparian and wetland natural communities are considered sensitive natural communities in the Yolo HCP/NCCP. They include: alkali prairie, vernal pool complex, fresh emergent wetland, valley foothill riparian, and lacustrine and riverine. Descriptions of each of these sensitive natural communities is included in Table 2-1 (Yolo HCP/NCCP Section 4.3.3).

Special Participating Entity (SPE)	An entity (public or private) or individual that may conduct projects or undertake other activities in the Plan Area that are covered activities in the Yolo HCP/NCCP and that may affect covered species and require take authorization from USFWS or CDFW but are not subject to the jurisdiction of one or more of the member agencies. These entities or individuals may pursue permit coverage under the permits and the Yolo HCP/NCCP through the Special Participating Entity process defined in Yolo HCP/NCCP Chapter 4 (Section 4.2.1.3), the Conservancy's Special Participating Entity Policy (available on the Conservancy's website), and also described in Yolo HCP/NCCP Chapter 7 (Section 7.2.5). SPEs include tribal projects on tribal public trust land.
suitable habitat	Habitat suitable for supporting the covered species based on specific species habitat criteria. Suitable habitat may be determined on a site-by-site basis by a qualified biologist. This term is used for assessing whether AMMs need to be implementing. Compare with *modeled habitat.*
superuser	Someone within each member agency through which other member agency staff will route all questions to the Conservancy regarding HCP/NCCP implementation.
temporary impacts	Impacts of covered activities include the alteration of land cover for less than 1 year that allows the disturbed area to recover to pre-project conditions or ecologically improved conditions within 1 year (e.g., prescribed burning, construction staging areas) of completing construction (Yolo HCP/NCCP Section 5.3).
threatened	Species at risk of becoming endangered in the foreseeable future.
wildlife agencies	The wildlife agencies that oversee the Yolo HCP/NCCP: USFWS and CDFW.
Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP)	The plan that describes the allowable biological impacts within member agency jurisdictions and the conservation commitments to offset those impacts and provide for the conservation of the species in the Plan Area.

Chapter 1
Introduction and Overview

1.1 Introduction

This guide is intended to assist the ***member agencies***[1] (Yolo County and the Cities of Davis, West Sacramento, Winters, and Woodland) and project applicants (individuals and entities applying for ***incidental take*** coverage under the Yolo HCP/NCCP, including ***special participating entities*** [SPEs]) regarding the permitting of projects covered by the ***Yolo Habitat Conservation Plan/Natural Community Conservation Plan*** (Yolo HCP/NCCP). The guide will help member agency staff and project applicants determine: (1) if a project qualifies for/requires Yolo HCP/NCCP permit coverage, and (2) the process and timing for Yolo HCP/NCCP application submittal and compliance. The Yolo Habitat Conservancy (Conservancy) expects to modify this document over time as needed to improve the implementation process.

This permitting guide provides instructions for applicants to obtain permit coverage and member agencies to report permit use under the Yolo HCP/NCCP. The Yolo HCP/NCCP is the primary document that describes all procedures described within this guide. This document is consistent with and complementary to the Yolo HCP/NCCP. In any situation in which there is a discrepancy between the two documents, however, the Yolo HCP/NCCP is the governing document. Readers of this guide are encouraged to refer to the Yolo HCP/NCCP, review the frequently asked questions and other resources provided on the Conservancy's website, and/or seek guidance from Conservancy representatives as needed.

1.2 Yolo HCP/NCCP Background

What is the Yolo HCP/NCCP?

In many areas of California, development of land for roads, housing, and other improvements negatively affects plants, wildlife, and their habitats protected by the federal and California Endangered Species Acts (ESA and CESA, respectively). The Yolo HCP/NCCP is a 50-year regional plan to protect ***endangered*** species and natural resources while allowing for orderly development in Yolo County consistent with local general plans. Prior to the Yolo HCP/NCCP, an applicant for any development that involved loss of federally or state-protected plants, wildlife, or their habitats was, in many cases, required to obtain permits directly from state or federal agencies—a process that could take several years and be very costly. The Yolo HCP/NCCP provides private developers, consultants, and property owners with a streamlined and cost-effective approach for requesting and receiving ***incidental take permits*** for private development projects. It applies only to eligible projects, also known as ***covered activities,*** undertaken within the ***Plan Area*** (Figure 1-1). The Plan Area includes all areas within Yolo

[1] Bolded and italicized terms appearing in this guide are defined in the *Common Terms* list after the Table of Contents.

County, including the incorporated cities of Davis, West Sacramento, Winters, and Woodland. The Yolo HCP/NCCP can only cover activities that take place in the Plan Area.

The Yolo HCP/NCCP covers 12 wildlife and plant species (Table 1-1) and replaces the interim Swainson's hawk foraging habitat ***mitigation*** program operated by the Conservancy during plan preparation.

Figure 1-1. Regional Location of the Yolo HCP/HCCP Plan Area

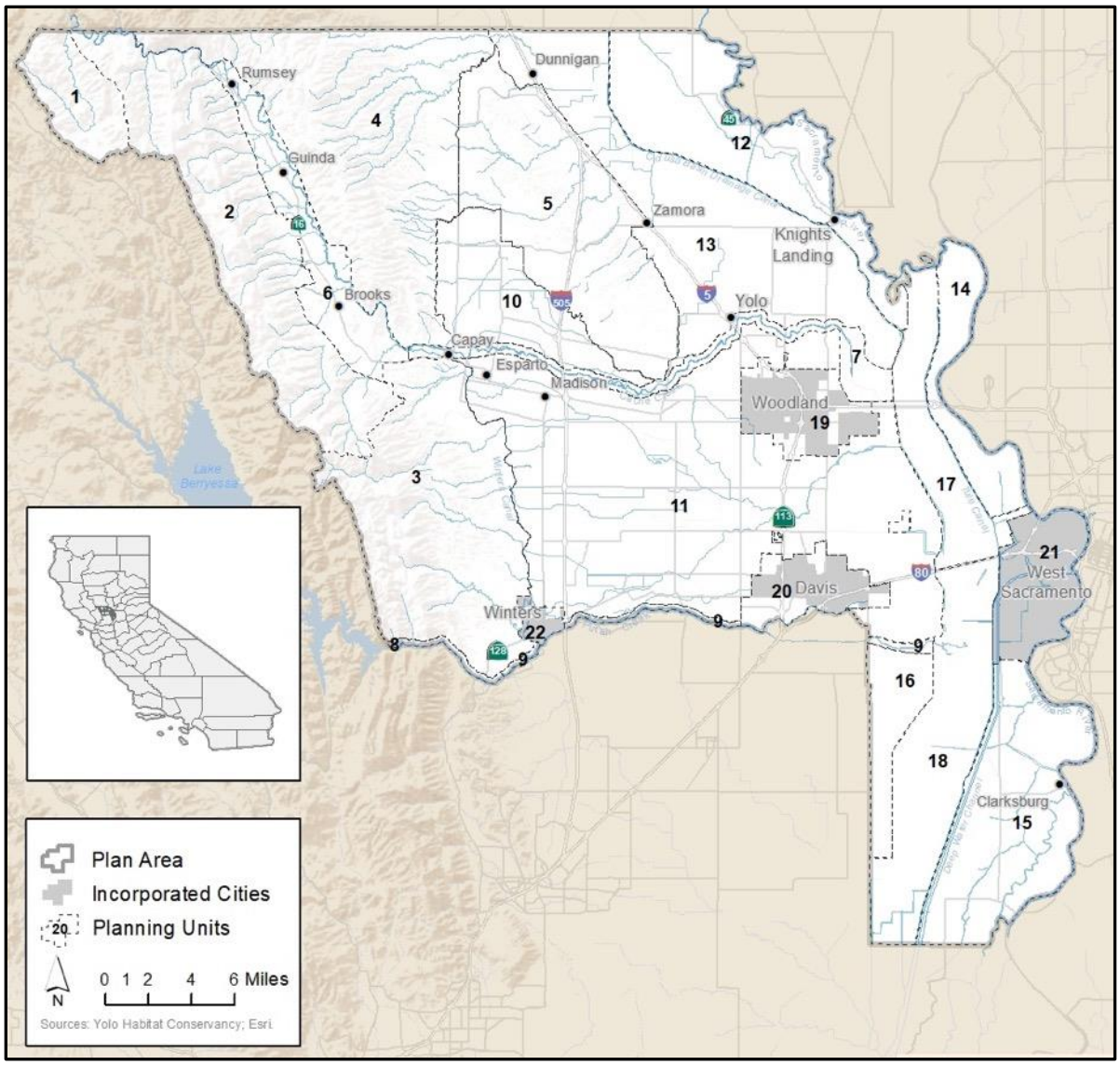


Table 1-1. Yolo HCP/NCCP Covered Species

	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 ESA
- E = Listed as endangered under ESA
- PT = Proposed as threatened under ESA
- T = Listed as threatened under ESA
- - = No designation

State
- C = Candidate. Under CESA, a candidate for listing is afforded the status of a listed species
- CSC = California species of special concern
- 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 designation for species that are rare or endangered in California and elsewhere.
- - = No designation

[b] Formerly Cordylanthus palmatus.

DPS = distinct population segment: ESA = Federal Endangered Species Act; CESA = California Endangered Species Act

Who Developed the Yolo HCP/NCCP?

Six local agencies, also known as the Yolo HCP/NCCP ***Permittees***, prepared the Yolo HCP/NCCP.

- Yolo Habitat Conservancy
- County of Yolo
- City of Davis

- City of West Sacramento
- City of Winters
- City of Woodland

In developing the Yolo HCP/NCCP, the Permittees worked with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW), the two agencies responsible for applicable state and federal laws pertaining to endangered species (USFWS and CDFW are collectively referred to as the ***wildlife agencies***). A 16-year stakeholder and public outreach process accompanied development of the Yolo HCP/NCCP. The Yolo HCP/NCCP is administered by the Conservancy, a local joint powers agency created by the member agencies (the four cities and Yolo County) and governed by a Board of Directors consisting of elected officials appointed by those entities and an ex-officio board member from the University of California, Davis.

How Does the Yolo HCP/NCCP Benefit Private Development Projects?

According to state and federal environmental laws, projects that can potentially affect endangered species or their habitats must receive take authorization from one or both wildlife agencies. Loosely defined, *take* means to harm or kill a species—including removing its habitat—and the wildlife agencies grant take authorization to entities involved in otherwise lawful activities that could result in take of endangered species. (In this guide, the Conservancy generally refers to take authorization as ***incidental take permits***.) Because applicable state and federal permitting requirements are determined on a project-by-project basis, and because this permitting process occurs separately from obtaining other permits from local planning agencies, obtaining incidental take permits can be a lengthy process that can delay project construction.

Under the process in existence prior to the Yolo HCP/NCCP, applying for an incidental take permit required a detailed assessment of the impacts on endangered species. In consultation with federal and/or state wildlife agencies, private developers or property owners could then be required to mitigate impacts on endangered species and their habitats. Such ***mitigation*** could require preserving portions of property for habitat, finding lands to purchase or preserve as habitat, or creating or restoring any sensitive habitat affected by projects. Often these actions would require years of planning, permit acquisition, ongoing restoration, and monitoring work, along with significant associated expenses and costs.

In contrast, the Yolo HCP/NCCP allows the member agencies to extend incidental take permits directly to private entities, allowing for a predictable, streamlined permitting process. Private applicants no longer need to contact or coordinate with USFWS or CDFW to obtain take authorization; they secure it at their local planning counter for species covered by the Yolo HCP/NCCP. This new process reduces delays, expenses, and regulatory duplication by removing the need to obtain wildlife agency approvals and reducing the number and scope of biological surveys required. Under this approach, the Yolo HCP/NCCP provides a standardized permitting process for private projects that will be applied equally and consistently.

The local agency charges standardized and consistent ***fees*** based on the removal of that ***land cover type*** to pay for mitigation. By paying the fees and complying with ***avoidance and minimization measures (AMMs)***, applicants immediately fulfill their mitigation obligations for endangered, ***threatened***, and other sensitive species (e.g., species of special concern or species identified as candidate for listing as threatened or endangered) covered by the Yolo HCP/NCCP (Table 1-1). Applicants also have the option of providing land that meets Yolo HCP/NCCP biological goals and objectives, or purchasing suitable mitigation credits in lieu of a portion of the Yolo HCP/NCCP fees.

Under the Yolo HCP/NCCP, an applicant fulfills mitigation responsibilities by working with the appropriate member agency to apply for permit coverage. Conservancy staff may assist member agency staff, but the member agency staff are the main point of contact for applicants. Through this process, the applicant will determine applicable fees and AMMs. The member agency will transfer fees on a regular basis to the Conservancy or may work with the Conservancy to allow applicants to transmit fees directly to the Conservancy. The Conservancy will use the fee revenue to purchase lands for habitat conservation, conduct annual monitoring and reporting activities, and carry out other Yolo HCP/NCCP implementation tasks.

The Yolo HCP/NCCP provides an efficient process to request and receive incidental take permits that also provides improved benefits for species conservation. Because the Yolo HCP/NCCP has "no surprises" assurances from the wildlife agencies, the Yolo HCP/NCCP conservation obligations, including AMMs, associated with Yolo HCP/NCCP permit coverage are fixed for the 50-year term of the permit. Yolo HCP/NCCP fees will be adjusted every year to keep pace with inflation and rising land costs, as described in Chapter 7 of the Yolo HCP/NCCP.

1.3 Roles and Responsibilities

The Yolo HCP/NCCP is a partnership between the wildlife agencies, the member agencies, and the Conservancy. Each organization has specific roles and responsibilities.

Member Agencies

Member agencies, with support from the Conservancy, are responsible for working with applicants to complete the Application Form,[2] ensure compliance with AMMs, and transmit fees to the Conservancy on a quarterly basis, or more frequently if requested. In addition, each member agency will designate a ***superuser***. This superuser will become the in-house expert on the Yolo HCP/NCCP within each member agency and help to ensure consistent and accurate communication with the applicants and the Conservancy.

Conservancy

The Conservancy is responsible for assisting the member agencies with implementing the permitting process, establishing the reserve system, monitoring the reserve system, ensuring

[2] The Application Form is submitted to the local agency for approval under the Yolo HCP/NCCP. The Application Form consists of both the Preliminary Application and Final Application. Where this document uses the term *Application*, it refers to both the Preliminary and Final Applications.

compliance with AMMs, and reporting on this compliance annually to the wildlife agencies. To ensure appropriate communication with the Conservancy and applicants regarding the permit process, the Conservancy will strive to only meet or talk with project applicants with member agency staff present. The Conservancy will also strive to copy the appropriate member agency staff on all email communication related to a permit application.

Wildlife Agencies

Wildlife agencies are responsible for oversight of the permitting process but are not involved in day-to-day decisions related to the permitting process. While there are a number of provisions that require approval by the wildlife agencies (limited mostly to establishing the reserve system), the wildlife agencies generally are involved in the permitting process only if applicants request certain deviations from one of the AMMs.

1.4 How to Use this Guide

This guide provides the following information.

- **Chapter 1: Introduction and Overview**
  This chapter provides a general overview of the Yolo HCP/NCCP, compares the Yolo HCP/NCCP to previous permitting processes, and describes the roles and responsibilities of participating entities. It also provides an overview of the application process for receiving permit coverage under the Yolo HCP/NCCP.
- **Chapter 2: Screening Form for Private Projects**
  This chapter provides a step-by-step guide for filling out the Screening Form. There is one Screening Form for private projects and another for member agency projects.
- **Chapter 3: Application Form for Private Projects**
  This chapter provides a step-by-step guide for filling out the application for private projects, which SPEs will also use.
- **Chapter 4: Screening and Reporting Form for Member Agency Projects**
  This chapter provides a step-by-step guide for filling out Form 4: Reporting Form for Member Agency Projects.
- **Chapter 5: Avoidance and Minimization Measures**
  This chapter includes complete descriptions of Yolo HCP/NCCP AMMs.
- **Chapter 6: Summary of Biological Evaluations**
  This chapter provides detail regarding the types and timing of biological evaluations associated with projects that seek and/or have obtained permit coverage under the Yolo HCP/NCCP.

The Conservancy strongly encourages Yolo HCP/NCCP users filling out the forms to rely on Chapters 2 and 3 for assistance. Member agencies with member agency projects should rely on Chapter 4 for assistance with the Reporting Form. Other chapters provide additional background information and details.

1.5 Overview of Take Coverage Application Process

The Conservancy has developed a two-part application process to ensure applicants for ***private projects*** can easily incorporate Yolo HCP/NCCP requirements into the existing process for land development applications. The Screening Form helps applicants determine whether they are subject to the Yolo HCP/NCCP, eligible for plan coverage, and/or exempt from land cover fees, wetland fees, or AMMs. The Application Form identifies relevant project details, determines applicable land cover fees, wetland fees, and AMMs, and serves as an application for permit coverage. This section describes the overall process for applicants to apply for take coverage under the Yolo HCP/NCCP, including for SPEs. Chapters 2 through 4 provide step-by-step instructions for completing the Screening Form and Application Form.

Member agencies will submit a member agency project Reporting Form to the Conservancy instead of filling out the private project Application Form to document their intent to utilize the Yolo HCP/NCCP permit coverage for ***member agency projects***. Chapter 4 provides instructions for filling out the member agency project Reporting Form.

Screening and Application Processes

Table 1-2 summarizes the forms to be used for the Yolo HCP/NCCP screening and application process. Prior to completing the formal Application for Yolo HCP/NCCP permit coverage , an applicant will fill out the Screening Form to determine if the project is subject to the Yolo HCP/NCCP, eligible for plan coverage, and/or exempt from fees or AMMs. There are separate Screening Forms for private and member agency projects. See Chapter 2 for a description of the screening process for private projects and Chapter 4 for a description of the screening process for member agency projects.

Table 1-2. Summary of Forms

FORM	PURPOSE	TIMING
Screening Form	The Screening Form is a mandatory form for discretionary projects. There are two versions of this form – one for private projects and Special Participating Entities, and one for member agency projects. This form assists project applicants in determining whether they are subject to the Plan, eligible for plan coverage, and/or exempt from fees or AMMs.	Submit to the member agency (or to the Conservancy for Special Participating Entities) as early in the process as practicable. Ideally this will occur prior to submittal of land development application, during preliminary project discussions the member agency planning office.
Preliminary Application	The Preliminary Application is an optional but recommended form filed by private project applicants and Special Participating Entities eligible for plan coverage. This form identifies relevant project details, determines applicable land cover fees and AMMs, and serves as an application for permit coverage. A Preliminary version of this form may be filed early in the land development review process at the discretion of the member agency.	Submit optional (but recommended) Preliminary Application to the member agency (or to Conservancy for Special Participating Entitities) with land development application.
Final Application	The Final Application is a mandatory form filed by private project applicants and Special Participating Entities eligible for plan coverage. This form identifies relevant project details, determines applicable land cover fees and AMMs, and serves as an application for permit coverage.	Submit Final Application after CEQA compliance and project approval. The Conservancy may provide technical assistance.
Reporting Form	The Reporting Form is completed by member agencies implementing member agency projects. (The Application, in contrast, is used by private project applicants only). The Conservancy will complete this form for conservation projects. This form documents use of the Yolo HCP/NCCP permit for member agency projects.	Submit Preliminary Reporting Form to member agency "superuser" as early in the process as practicable. Submit Final Reporting Form to member agency "superuser" after CEQA compliance and project approval. The Conservancy may provide technical assistance.
Certificate of Inclusion	The certificate issued by the Conservancy documenting incidental take coverage for a Special Participating Entity.	Issued after submittal of Final Application, review by Conservancy staff, approval by Conservancy Board, and payment of all fees. Permittee is responsible for tracking pre and post construction surveys.

FORM	PURPOSE	TIMING
Certificate of Approval	The certificate issued by a member agency documenting incidental take coverage for a private project.	Issued after approval of project by member agency council or board, submittal of Final Application, review and acceptance by member agency staff, and payment of all Conservancy fees. Permittee is responsible for tracking pre and post construction surveys
Certificate of Compliance	The certificate issued by a member agency documenting incidental take coverage for a member agency project. The Conservancy will issue this certificate for conservation projects.	Issued after completion of Final Reporting Form, approval of project, and payment of all fees. Permittee is responsible for tracking pre and post construction surveys.
Post-Construction Checklist	A checklist to document compliance with AMMs.	Completed by the qualified biologist post construction.

If the project is a covered activity, the applicant will fill out a preliminary version of the Application Form to provide a preliminary evaluation of project impacts, applicable fees, and AMMs, and to facilitate the application process. After the California Environmental Quality Act (CEQA) process is completed and land development approval is received, the applicant must file the final Application Form. See Chapter 3 for a thorough description of the application process and detailed instructions for filling out the Application Form.

Special Participating Entities

This section is based on Yolo HCP/NCCP Section 4.2.1.3.

SPEs are agencies or individuals that conduct projects that qualify as covered activities within the Yolo HCP/NCCP Plan Area that are not subject to the jurisdiction of the member agencies but may affect listed species that are covered under the Yolo HCP/NCCP and require take authorization from USFWS and/or CDFW. Such organizations may include water districts, transportation agencies, utility districts, or individuals or entities with activities that may result in take but do not require a **discretionary** permit from a member agency. Entities that fit this criterion and have a project that fits within the general types of projects covered by the Yolo HCP/NCCP should fill out the Screening Form and submit it to the Conservancy. The Conservancy will review the request, may request additional information, and will determine if the entity should submit a full application. Coverage to SPEs is not guaranteed and must be authorized by the Conservancy Board. Potential SPEs are encouraged to contact the Conservancy early in the project planning process.

Member Agency Public Project Reporting Process

The member agencies will submit a Reporting Form to the Conservancy instead of filling out the member agency project Reporting Forms to document their intent to utilize the Yolo HCP/NCCP permit coverage for member agency projects. Chapter 4 provides instructions for filling out the Reporting Form. Member agencies also will fill out a Screening Form for Member Agency Projects to determine permit coverage.

Yolo HCP/NCCP Fees

The Conservancy charges various types of fees to cover implementation costs, including administration, land acquisition, restoration, and land management costs. Table 1-3 summarizes the types of fees used in the Yolo HCP/NCCP process, the purpose of each of fee type, and when the applicant pays each fee.

Table 1-3. Summary of Fees Utilized in the Yolo HCP/NCCP Process

Fee	Purpose	Timing
Application fee	This is a unitized application-processing fee for land cover fee-paying projects based on average processing costs. Will not always cover actual Conservancy costs. Applied as a credit towards land cover fees.	Paid by all applicants (unless exempt) with or prior to submittal of Final Application.
SPE cost recovery fee	Pays for full cost recovery for coordination with SPEs regarding application processing. Covers Conservancy time and materials, beyond the application fee, based on actual costs.	Paid by SPEs in the form of a deposit after execution of the SPE cost recovery agreement, prior to start of Conservancy work with applicant. Paid in full prior to issuance of Certificate of Inclusion.
SPE contribution to recovery fee	A supplemental charge on entities that did not participate in nor contribute financially to the costs of Yolo HCP/NCCP preparation.	Paid by SPEs after Conservancy approval to provide coverage, prior to issuance of Certificate of Inclusion. Determined based on formula adopted by Conservancy Board January 28, 2019.
Land cover fee	Mitigation for direct (project impact acreage) and indirect (project land cover fee buffer acreage) impacts on covered species.	Paid by private and public project applicants after project approval, prior to issuance of Certificate of Approval or Certificate of Compliance. Paid by SPEs after Conservancy Board approval, prior to issuance of Certificate of Inclusion.
Wetlands fee	Mitigation (in addition to the land cover fee) for impacts to fresh emergent wetland, valley foothill riparian, and lacustrine and riverine land cover types.	Paid by private and public project applicants after project approval, prior to issuance of Certificate of Approval or Certificate of Compliance. Paid by SPEs after Conservancy Board approval, prior to issuance of Certificate of Inclusion.

Fee	Purpose	Timing
Temporary effect fee	Mitigation impacts that alter land cover for less than 1 year and include recovery to pre-project or better conditions within 1 year of completing construction.	Paid by private and public project applicants after project approval, prior to issuance of Certificate of Approval or Certificate of Compliance. Paid by SPEs after Conservancy Board approval, prior to issuance of Certificate of Inclusion.
Aquatic restoration in-lieu of wetlands fee	Construction of wetland restoration in-lieu of payment of Wetlands Fees	See Section 8.4.1.3.2 of the Yolo HCP/NCCP.
Land dedication in-lieu of land cover fee	Dedication of land for inclusion in the reserve system in lieu of payment of land cover fees.	See Sections 7.5.8 and 8.4.1.8 of the Yolo HCP/NCCP and in-lieu fee policy adopted by Conservancy Board July 2019.

Conservancy = Yolo Habitat Conservancy
SPE = Special Participating Entity

Lands Provided In Lieu of Fees

This section is based on Yolo HCP/NCCP Sections 7.5.8 and 8.4.1.8.

An applicant can provide land in lieu of paying all or a portion of the land cover fee or purchase mitigation credits from a Conservancy-approved mitigation bank in lieu of paying a portion of the fee. The Conservancy will determine the amount of the fee discount based generally on the amount the Conservancy will save by not purchasing land with the fee revenue. Please review the appropriate sections in Chapters 7 and 8 of the Yolo HCP/NCCP or contact Conservancy staff for more information.

Guidance for Small Infill Projects

The Conservancy strives to minimize the administrative and financial burden on small infill projects within the limits of the Yolo HCP/NCCP permits. The following guidance applies to small infill projects.

- Most small infill projects (surrounded by development on all four sides) are located on "developed" land and therefore are exempt from fees. Table 2-1 of this Permitting Guide lists the land cover types exempt from fees: urban, urban-ruderal, vegetated corridor, and barren-anthropogenic. Applicants should fill out the Screening Form to determine if a small infill project is exempt from fees.
- Determining the difference between the urban-ruderal land cover type and the grassland land cover types can be difficult, so the Conservancy prepared the following guidance in this Permitting Guide under instructions for Box C, Item 5 of the Screening Form. A qualified biologist must verify all land cover mapping.
- Small infill projects exempt from land cover fees (but still subject to Avoidance and Minimization Measures (AMMs)) are exempt from the application fee.

- Small infill projects exempt from fees may still need to implement AMMs. AMMs for these projects are required if the project overlaps with any resource protection buffers for sensitive natural communities or covered species habitat as specified in Table 2-3 of the Permitting Guide, unless a qualified biologist determines the project will not affect sensitive natural communities or covered species (see page 42 of Permitting Guide for instructions on filling out the Screening Form, Box C, Item 7).
- The most common AMM applicable to infill projects is AMM16 for Swainson's hawk and white-tailed kite because these species sometimes nest in urban areas. AMM16 requires a qualified biologist to determine whether trees onsite and within the resource protection buffer (1,320 feet for Swainson's hawk/white-tailed kite) are potential nest trees. To facilitate this process for small urban infill projects, the Conservancy has defined "potential nest tree" within an urban setting as native and non-native trees (e.g., cottonwood, valley oak, walnut, sycamore, eucalyptus, redwood, ornamental pine) that are at least 40 feet tall. If potential nest trees do not occur onsite or within the resource protection buffer, no further surveys are required. If potential nest trees do occur, then surveys are required to determine presence/absence of active nests. Upon request and on a case-by-case basis, the Conservancy is available to assess the presence/absence of active Swainson's hawk/white-tailed kite nests on and around urban infill project sites.
- Discretionary projects that are exempt from fees and AMMs do not need to fill out the HCP/NCCP Application, just the Screening Form.
- Projects exempt from fees but for which AMMs are required will need to complete the HCP/NCCP Application, but only need to fill out Boxes A-C, F, G, and I of the HCP/NCCP Application.

Guidance for Specific Plans

Specific Plan EIRs should require each project within the Specific Plan to apply for HCP/NCCP coverage prior to grading permit issuance. Developers for each individual project within the Specific Plan are responsible for applying for HCP/NCCP coverage and payment of relevant fees.

Each project may use the Specific Plan EIR to satisfy planning level survey requirements provided the appropriate information (Permitting Guide Table [check]) is included and the information is still valid at the time of application (i.e., conditions have not changed to the extent that the information is no longer accurate). Species-specific planning level surveys are valid for two years after the survey is conducted.

The HCP/NCCP did not intend to double count indirect impacts, therefore if the 50-foot buffer from the edge of development for one project overlaps with proposed development for a neighboring project within the Specific Plan Area, the 50-foot buffer fee does not apply.

1.6 Integration with Other Planning and Permitting Processes

Integration with the Local Land Development Application Review and CEQA Process

The following describes four steps of the local land development application process for projects that are not exempt from CEQA (e.g., negative declarations, mitigated negative declarations, and environmental impact reports).

Step 1. Land Development Pre-Application[3]

- Applicant coordinates with the member agency.
- Applicant submits Screening Form to the member agency for review
- Applicant or member agency prepares Yolo HCP/NCCP initial assessment of land cover using the GeoMapper tool, aerial maps, or based on site visit.
- Member agency determines eligibility for coverage under the Yolo HCP/NCCP and circulates Screening Form to the Conservancy.
- Conservancy logs the project into the Yolo HCP/NCCP tracking system and reviews materials sent by member agency.
- Conservancy is available to the member agency for technical assistance.

Step 2. Submittal of Land Development Application

- Applicant submits land development application to member agency.
- Member agency submits Yolo HCP/NCCP Application Form. Member agency may recommend applicant to submit Yolo HCP/NCCP's Preliminary Application, including ***planning level survey*** to the member agency. See Table 6-1 of the permitting guide for description of required or recommended attachments or elements of the planning level survey for the Preliminary Yolo HCP/NCCP Application as compared with the Yolo HCP/NCCP's Final Application.
- The Yolo HCP/NCCP planning level survey (required as an attachment to the Yolo HCP/NCCP Application Form) and the CEQA biological resources assessment (see Step 3) can be the same document if the CEQA assessment includes elements required for Yolo HCP/NCCP permit coverage, as described in this guide, and the HCP/NCCP clearly references the appropriate report sections.
- Member agency planning staff review the Yolo HCP/NCCP Application Form and provide comments to the applicant (for member agency projects, the member agency superuser will review the Preliminary Reporting Form)
- Conservancy is available to the member agency for technical assistance.

[3] The *land development pre-application* and *land development application* are applications submitted to the local agency for CEQA review and discretionary approval.

Step 3. Member Agency Undertakes CEQA Clearance for Project

- Member agency/applicant prepares CEQA document, including Conservancy template language explaining the Yolo HCP/NCCP and consideration of the Yolo HCP/NCCP in the CEQA analysis.
- CEQA biological resources assessment should include either a planning level survey required for HCP/NCCP permit coverage or equivalent information with the location of the information identified in the HCP/NCCP Application Form.

Step 4. Member Agency Action on Project

- Member agency provides its discretionary approval of the land development project with a standard condition to secure Yolo HCP/NCCP permit coverage, pay applicable fees, and implement applicable AMMs.
- If not completed under Step 2 or if the member agency requested revisions to Application Form under Step 2, the applicant completes the Yolo HCP/NCCP's the Final Application (for member agency projects, a Final Reporting Form is completed), including required attachments. This package is reviewed for completeness and adequacy by the member agency planning staff/superuser.
- Member agency issues Yolo HCP/NCCP ***Certificate of Approval*** for private projects or a ***Certificate of Compliance*** for member agency projects. This must occur prior to site disturbance.
- Applicant submits brief post-construction report to the member agency and the Conservancy documenting that the AMMs, including preconstruction surveys, and construction monitoring were properly implemented.

Table 1-4 outlines the tasks involved and provides guidance to member agencies regarding the integration of the Yolo HCP/NCCP requirements with the existing land development application review and CEQA process.

Table 1-4. Integration of Yolo HCP/NCCP Compliance with Local Land Development (Planning Application Review and CEQA Process

Task	Local Agency Planning/CEQA	Yolo HCP/NCCP	Notes
1	Land development pre-application	• Submit Screening Form and application fee • Conduct initial assessment	This may be a formal or informal step (depending on the member agency process) during which the land development applicant undertakes early coordination with the member/lead agency planning staff. Conservancy staff is available to provide technical assistance to the member agency. If the applicant wishes to dedicate land or restore wetlands in-lieu of HCP/NCCP fees, they should initiate discussions with the member/lead agency as soon as possible. The member/lead agency will contact the Conservancy.
2	Land development application submitted to local planning office	• Submit Preliminary Application Form • Submit biological evaluations,[1] if available (planning level survey)	The biological evaluations may be prepared for the applicant prior to the CEQA process and subsequently shared with the CEQA consultant, or CEQA consultant can prepare the necessary information as part of the biological resource evaluation that will be prepared for CEQA compliance. It is important that the CEQA consultant be made aware of the need to integrate the HCP/NCCP into the CEQA impact analysis including the specific technical requirements necessary to satisfy the HCP/NCCP requirements for biological evaluations. Permit coverage cannot be provided until the applicant has completed the required Yolo HCP/NCCP application process.
3	Application completeness process		
4	CEQA environmental determination (ED) – exempt from CEQA, negative declaration (ND), mitigated negative declaration (MND), sustainable communities environmental assessment (SCEA), environmental impact report (EIR)		
5	CEQA initial study (IS) and confirmation of ED; preparation of CEQA document		
6	CEQA IS checklist (CEQA Guidelines Appendix G); questions for biological resources (Section IV)	See 6a) through 6f).	See 6a) through 6f)

Task	Local Agency Planning/CEQA	Yolo HCP/NCCP	Notes
6a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	For the 12 covered species, the CEQA analysis should point to and rely on the Yolo HCP/NCCP. Site-specific information about the covered species should be disclosed. This should include disclosure of acres of habitat affected, how Yolo HCP/NCCP resource protection buffers would apply, whether design or other changes would avoid or minimize impacts (e.g., timing changes to avoid nesting season). Applicable AMMs should be identified and may be listed as mitigation measures. Information about how compliance with the Yolo HCP/NCCP would achieve mitigation should be provided. No further mitigation beyond compliance with the Yolo HCP/NCCP is required under CEQA for these species.	For non-covered special status species, CEQA compliance is required, though partial or full CEQA mitigation may result indirectly from HCP/NCCP. The CEQA consultant should consider whether non-covered species receive mitigation benefit from compliance with the HCP/NCCP for covered species and address this in the CEQA document. The level that non-covered species are protected by the HCP/NCCP could be further explored and documented by the Conservancy if there is funding. Conservancy will develop standard language for member agencies to use in CEQA documents to describe reliance on the HCP/NCCP for the 12 covered species.

Task	Local Agency Planning/CEQA	Yolo HCP/NCCP	Notes
6b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	For impacts in this category, the CEQA analysis should point to and rely on the Yolo HCP/NCCP. Site-specific information about the covered species should be disclosed. This should include disclosure of acres of habitat impacted, how Yolo HCP/NCCP resource protection buffers will apply, whether design or other changes would avoid or minimize impacts (e.g., timing changes to avoid nesting season). Applicable AMMs should be identified and may be listed as mitigation measures. Information about how compliance with the HCP would achieve mitigation should be provided. No further mitigation beyond compliance with the Yolo HCP/NCCP is required under CEQA for these natural communities, including oak woodlands, pursuant to PRC Section 21083.4.	PRC Section 21083.4 addresses Conversion of Oak Woodlands. It applies only to counties. It requires an analysis of this issue as part of the CEQA compliance for projects in the unincorporated area and identifies specific mitigation strategies. PRC Section 21083.4(d)(1) exempts projects undertaken pursuant to an approved NCCP that preserves oak habitat. The HCP/NCCP fulfills this requirement. The CEQA document should discuss and disclose this.
6c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	The Yolo HCP/NCCP provides no Section 404 coverage or direct coverage for impacts on wetlands. The Conservancy and member agencies may choose to expand the Yolo HCP/NCCP to cover Section 404 mitigation in the future.	Through project specific negotiation, applicants of projects that require Section 404 approval may be able to attain agreement from the federal agencies to accept compliance with the HCP/NCCP as fulfilling Section 404 mitigation requirements.

Task	Local Agency Planning/CEQA	Yolo HCP/NCCP	Notes
6d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	See 6a).	For other non-covered special status species, CEQA compliance is required, though partial or full CEQA mitigation may result indirectly from HCP/NCCP. The CEQA consultant should consider whether non-covered species receive mitigation benefit from compliance with the HCP/NCCP for covered species and address this in the CEQA document. The level that non-covered species are protected by the HCP/NCCP could be further explored and documented by the Conservancy if there is funding. Conservancy will develop standard language for member agencies and/or CEQA consultants to use in CEQA document to describe reliance on the HCP/NCCP for the 12 covered species.
6e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	All of the member agencies have general plan policies protecting biological resources, and each member agency determined the Yolo HCP/NCCP to be consistent with those policies upon adoption of the Yolo HCP/NCCP in May/June 2018. None of the member agencies had separate ordinances for biological resources before the Yolo HCP/NCCP was adopted. Most of the member agencies have regulations addressing tree protection and agricultural land protection. Yolo HCP/NCCP Section 7.5.8 describes the easement stacking policy.	To address this threshold the CEQA document should analyze project compliance or conflict with local tree protection ordinances and local agricultural land protection ordinances. Member/lead agencies may independently allow applicants to receive credit for HCP/NCCP land cover fees towards all or a portion of the otherwise separate requirement for mitigation for loss of agricultural land under local ordinance and CEQA. The efficacy of this as a policy rests solely with the member/lead agency. The YHC takes no position on this matter.
6f)	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	The CEQA analysis should describe the Yolo HCP/NCCP, the local agency's status as a member agency, and the process and agreements in place to ensure compliance.	Conservancy will develop standard language for member agencies and/or CEQA consultants to use to address this threshold.

Task	Local Agency Planning/CEQA	Yolo HCP/NCCP	Notes
7	CEQA Guidelines Section 15065(a)(1) compliance	See 7a) through 7d).	CEQA documents do not always address these thresholds, but CEQA best practices support analysis of these thresholds in all CEQA documents.
7a)	Substantially reduce the habitat of a fish or wildlife species?	See 6a).	For other non-covered special status species, CEQA compliance is required, though partial or full CEQA mitigation may result indirectly from the Yolo HCP/NCCP. The level of protection for non-covered species by the Yolo HCP/NCCP could be further explored and documented if there is funding. The Conservancy will develop standard language for member agencies and/or CEQA consultants to use in CEQA documents to describe reliance on the Yolo HCP/NCCP for the 12 covered species.
7b)	Cause a fish or wildlife population to drop below self-sustaining levels?		
7c)	Threaten to eliminate a plant or animal community?		
7d)	Substantially reduce the number or restrict the range of an endangered, rare or threatened species?		
8	For projects that qualify for CEQA exemptions	Ensure that applicable AMMs (or a requirement to satisfy applicable AMMS) are added to project conditions, if any.	
9	Project approval	Member agency approves project with a standard condition to complete a Final Application Form (including all attachments), secure Yolo HCP/NCCP permit coverage, pay applicable fees, and implement applicable AMMs.	After approval, the applicant must complete and submit the Final Application, including required attachments, and will pay the applicable fees. The member agency may then issue the Certificate of Approval.
10	Prior to ground disturbance[3]	Applicant must have paid applicable fees[3] or satisfied requirements in other approved manner (e.g., In-lieu payments).	The applicant must conduct all planning surveys prior to issuance of grading permit or commencement of site disturbance activities (whichever occurs first). For projects with approved phasing, the Conservancy will coordinate with the member agency to develop procedures/applicant agreements for phased payment of fees consistent with phased project approvals.

Task	Local Agency Planning/CEQA	Yolo HCP/NCCP	Notes
11	Project construction	Project construction can commence after an applicant has secured the Certificate of Approval, paid all fees, and conducted all required pre-construction surveys. The AMMs may require actions during and immediately prior to construction, such as application of buffers, preconstruction surveys, and use of construction monitors.	Results from pre-construction surveys must be submitted to the member agency and transmitted to the Conservancy.
12	Following project completion and/or during operation	The applicant will provide project-level monitoring and reporting and submit a post-construction checklist memo to the Conservancy that describes compliance with construction AMMs and site post-project condition report for temporary impacts.	N/A.

[1] *See separate discussion of HCP/NCCP biological evaluations in Chapter 6 of this guide.*
[2] *Only ministerial projects/activities are exempt from the Yolo HCP/NCCP. CEQA exempt projects may be subject* to *Conservancy fees and may be required to demonstrate compliance with AMMs.*
[3] *Yolo HCP/NCCP Section 8.4.1.7 states: "For private projects, the Conservancy will require the payment of HCP/NCCP fees by the time the grading permit for the project is issued. If a grading permit is not required, fees must be paid before or at the time the first construction permit is issued. For member agency projects, the Conservancy will require payment of HCP/NCCP fees prior to implementing the covered activity. For member agency projects conducted by outside contractors, the timing of fee payment may coincide with the award of the construction contract because this represents the time at which the public agency commits to implementing the project."*
AMM = avoidance and minimization measures
CEQA = California Environmental Quality Act
Conservancy – Yolo Habitat Conservancy
HCP/NCCP = habitat conservation plan/natural communities conservation plan
PRC = Public Resources Code

Important Notes about CEQA and the Yolo HCP/NCCP

- A private project that is exempt from CEQA may nevertheless be subject to the Yolo HCP/NCCP if the project is discretionary.
- The Yolo HCP/NCCP AMMs are conditions of using the incidental take permits. For land development projects with conditions of approval, member agencies are encouraged to add avoidance and minimization measures to the conditions of approval just like lead agencies add CEQA mitigation measures to conditions of approval. If possible, member agencies should identify applicable AMMs as mitigation measures in the CEQA document.
- At a minimum, project approval conditions for projects subject to the Yolo HCP/NCCP should identify a standard condition to complete a final Application Form (including all attachments), secure Yolo HCP/NCCP permit coverage, pay applicable fees, and implement applicable AMMs.
- Covered activities that are not otherwise exempt from the Yolo HCP/NCCP must have a Certificate of Approval from the member agency to document compliance with the plan, and must conduct all pre-construction surveys and implement AMMs prior to ground disturbance.

Integration with Projects Requiring Section 7 Consultation with Federal Agencies

Pursuant to Section 7 of ESA, for projects requiring federal funding or permitting, federal agencies must consult with USFWS if the project is likely to adversely affect a federally listed species. If the federally listed species is covered under the Yolo HCP/NCCP, the Yolo HCP/NCCP helps to expedite the Section 7 consultation process. The applicant and federal agency must take the following steps to complete the consultation process.

1. The applicant provides a copy of the ***Certificate of Inclusion***, Certificate of Approval, or Certificate of Compliance with the completed application and attachments to the federal agency. The applicant informs the federal agency that the project is covered under the Yolo HCP/NCCP and the internal Section 7 consultation conducted by USFWS for the Yolo HCP/NCCP.

2. The federal agency forwards the package of information to USFWS with a letter or email stating that the Section 7 obligation has been met by the Yolo HCP/NCCP.

3. After USFWS confirms the information, it sends an email or letter to the federal agency verifying that the Section 7 obligation has been met by the Yolo HCP/NCCP.

Chapter 2
Screening Form for Private Projects

Coverage Screening Limitations

The Screening Form provides an early indication of the types of impacts and associated AMMs that may apply to the project. The applicant must verify the land cover type, calculate fees, conduct planning level surveys, and assign AMMs as part of the application process. (i.e, Submittal of a Final Application Form).

The applicant will work with the appropriate local agency to complete the Screening Form for private projects and evaluate if a private project qualifies for permit coverage under the Yolo HCP/NCCP permits and is subject to the permit requirements. The Screening Form is not an application for permit coverage under the Yolo HCP/NCCP; rather, it is a tool to determine whether a project should continue with the application process. If you are a member agency with a member agency project, please use the Screening Form for member agency projects to determine whether your project needs to go through the Yolo HCP/NCCP application process (Chapter 2).

Local agencies use the Screening Form to make the following determinations regarding a proposed project.

- Whether the proposed project is subject to the Yolo HCP/NCCP (i.e., the project needs to receive take authorization through the Yolo HCP/NCCP. This includes, for example, whether the project is ***ministerial*** or discretionary and/or whether the project will result in any site disturbance or activity.
- Whether the proposed project is eligible for permit coverage under the Yolo HCP/NCCP. This includes, for example, whether the project is a covered activity.
- Whether the project is exempt from Yolo HCP/NCCP fees. This includes, for example, exemptions from application fees for small infill projects on ***developed*** land or exemptions from land cover and wetland fees.
- Whether the proposed project is exempt from Yolo HCP/NCCP AMMs.

The planning office of the member agency with jurisdiction over the area in which the project is proposed must confirm each of these conclusions. A project applicant seeking permit coverage as an SPE does not need to consult with any of the member agencies, but rather will work directly with the Conservancy, regardless of the location of the project.

Box A: Is the Project a Covered Activity?

Box A, Item 1: Discretionary vs. Ministerial

The Yolo HCP/NCCP does not cover ministerial projects unless the applicant is participating as an SPE. Box A determines whether a member agency has discretionary permit authority over the project. If the applicant is unsure, they can contact their member agency to help fill out Box A.

If a project received its discretionary permit or approval from a member agency prior to member agency adoption of the final Yolo HCP/NCCP, the project does not need to go through the Yolo HCP/NCCP approval process unless the project-specific CEQA requirements dictate that the project mitigate impacts through participation in the Yolo HCP/NCCP.

If a project applicant desires permit coverage under the Yolo HCP/NCCP for a ministerial project, the applicant may apply for permit coverage as an SPE. If an applicant desires permit coverage for a project as an SPE, the applicant must submit the Screening Form to the Conservancy office prior to completing the Application Form for private projects. SPE permit coverage is not guaranteed and will be authorized on a case-by-case basis by the Conservancy.

Box A, Item 2: Yolo HCP/NCCP Covered Activities

Item 2 indicates whether the project falls within the scope of project/activities covered by the HCP/NCCP. Most projects requiring discretionary approval by one of the member agencies are Yolo HCP/NCCP covered activities, but some projects (e.g., wind and solar) are specifically excluded and not covered under the HCP/NCCP. The Item 2 determination will require approval sign-off by the local agency with approval authority (or Conservancy for Special Participating Entities).

Box B: What is the Project?

Box B provides basic background information about the project.

Box C: Is the Project Exempt from Fees or AMMs?

The Box C screening questions determine whether the applicant needs permit coverage under the Yolo HCP/NCCP based on whether (a) land cover fees, and (b) AMMs apply. If a project is exempt from land cover fees and AMMs, the applicant can end the application process with the Screening Form. Otherwise, the applicant will need to proceed through the application process to receive authorization under the Yolo HCP/NCCP.

For projects that are exempt from land cover fees but require application of AMMS, a simplified application process is available as described in under Box C, Item 7, under *Projects on Developed Land that Potentially Affect Covered Species in the Surrounding Area*.

The applicant will need to identify land cover types and covered species habitat on and around the project site to fill out the screening questions. If a planning survey has not been conducted, the applicant may utilize/conduct an initial assessment as described in Section 6.1, *Initial Assessment*. The initial assessment will identify the likely land cover type(s) and any ***sensitive natural communities*** and covered species habitats associated with the project area. If the completed Screening Form indicates that permit coverage is not needed because the project site is on ***developed*** land and no covered species or associated habitat would be affected, the member agency land use planner or a Conservancy will need to verify that this determination is accurate.

Alternatively, the applicant can opt to retain a qualified biologist to conduct a planning level survey, as described above, in Section 6.2, *Planning Level Surveys*, to obtain more accurate information for completing the Screening Form.

Box C, Items 1 and 2: 5,000 Square Foot Exemption

Items 1 and 2 determine whether a project qualifies for a land cover fee exemption because it is less than 5,000 square feet. This fee exemption applies to additions to existing structures or new structures within 50 feet of an existing structure (e.g., a new garage) that result in less than 5,000 square feet of impervious surface if no sensitive natural communities (i.e., fresh emergent wetland, valley foothill riparian, and lacustrine or riverine land cover types) are affected. Expansion measurements are based on the footprint of the existing structure. Subsequent additions must be added to the original amount to determine whether this threshold has been crossed.

Initial Assessment

The initial assessment conducted using GeoMapper relies on regional scale data to provide preliminary information that may assist an applicant in understanding how the Yolo HCP/NCCP may apply to their project early in the project planning and application process. This Initial Assessment is for informational purposes only and does not replace the need to provide verified site-specific information when submitting the Application Form. A planning level survey is site-specific and must be verified in the field.

If Item 1 is checked as "yes" and Item 2 is checked as "no," the project is exempt from land cover fees, but AMMs may apply. The applicant should skip to Item 6 to determine whether AMMs apply.

Box C, Items 3 and 4: Two-acre Exemption

Items 3 and 4 determine whether a project may be eligible for a land cover fee and wetland fee exemption because it is on a parcel less than 2.0 acres in size. This fee exemption applies to activities on parcels less than 2.0 acres, unless the project will adversely affect ***suitable habitat*** for a covered species. If a project is 2.0 acres on a parcel larger than 2.0 acres, the project is not exempt.

If Item 3 is checked "yes" and Item 4 is checked "no," the project is exempt from land cover fees and wetland fees but AMMs may apply. The applicant skips to Item 6 to determine whether AMMs apply.

Table 2-1. Yolo HCP/NCCP Land Cover Types

Land Cover Type	Land Cover Fee?	Definition
Sensitive Natural Communities		
Alkali Prairie Natural Community		
Alkali prairie	Yes	Areas dominated by herbaceous vegetation with soils composed of saline-alkaline clay and salts such as sodium, magnesium, and boron. Dominant plant species is generally saltgrass. Other alkali-adapted species include pickleweed, bush seepweed, alkali heath, common spikeweed, and annual hairgrass.
Fresh Emergent Wetland Natural Community		
Alkali-bulrush-bulrush brackish marsh alliance	Yes	Brackish, alkali emergent wetland vegetation along streams and rivers and at the margins of ponds with some areas of open water, dominated by bulrushes.
Bulrush-cattail wetland alliance or freshwater marsh alliance	Yes	Freshwater emergent wetland vegetation along streams and rivers, and at the margins of ponds with some areas of open water, dominated by bulrushes and cattails.
Carex-spp.-wetland grasses-wetland forbs alliance	Yes	Freshwater emergent wetland vegetation along streams and rivers, and at the margins of ponds with some areas of open water, dominated by sedges and wetland grasses.
Crypsis spp.-wetland grasses-wetland forbs	Yes	Emergent wetland vegetation dominated by pickle grasses and wetland forbs.
Perennial pepperweed alliance	Yes	Wetland vegetation dominated by pepperweed.
Lacustrine and Riverine Natural Community		
Open water	Yes	The open water portions of lakes, rivers, and streams.
Valley Foothill Riparian Natural Community		
Blackberry alliance	Yes	Scrubby vegetation along streams and rivers, dominated by blackberry shrubs.
Coyote brush	Yes	Scrubby vegetation along streams and rivers, dominated by coyote brush.
Fremont Cottonwood-valley oak-willow (ash-sycamore) riparian forest association	Yes	Deciduous trees along streams and rivers, dominated by cottonwoods, willows, and oaks, and sometimes by ash or sycamore. Can include areas dominated by herbaceous or shrubby riparian vegetation if less than 1 acre in size.
Giant reed series	Yes	Vegetation along streams and rivers dominated by giant reed.
Great valley oak riparian association (also includes valley-oak alliance-riparian)	Yes	Deciduous trees along streams and rivers, dominated by valley oaks. Can include areas dominated by herbaceous or shrubby riparian vegetation if less than 1 acre in size.
Mixed Fremont cottonwood-willow spp. alliance	Yes	Deciduous trees along streams and rivers, dominated by cottonwoods and willows. Can include areas dominated by herbaceous or shrubby riparian vegetation if less than 1 acre in size.

Land Cover Type	Land Cover Fee?	Definition
Mixed willow alliance	Yes	Deciduous trees along streams and rivers, dominated by cottonwoods and willows. Can include areas dominated by herbaceous or shrubby riparian vegetation if less than 1 acre in size.
Tamarisk alliance	Yes	Stands of tamarisk along streams and rivers.
Riparian scrub	Yes	Scrubby vegetation along streams and at the margins of rivers, dominated by willows. Can include areas dominated by herbaceous riparian vegetation if less than 1 acre in size.
White alder (mixed willow) riparian forest	Yes	Forest along streams and rivers, dominated by white alder. Also may include willows as dominant species.
Agricultural Land Cover Types		
Cultivated Lands Seminatural Community[b]		
Rice	Yes	Agricultural fields planted in rice. Aerial profile shows areas that are designed for periodic flooding, either contour or laser leveled, unusually shaped polygons with berms between fields.
Field crops	Yes	Agricultural fields planted in corn, dry beans, grain sorghum, safflower, sudan, sugar beets, sunflowers, or other crops grown in fields on a large scale that do not fit into other cultivated lands seminatural community categories.
Truck/berry crops	Yes	Agricultural fields planted in asparagus, melons/squash/cucumbers, onions/garlic, peppers, tomatoes, strawberries, or other berry crops.
Grain and hay crops	Yes	Irrigated and dryland grain and hay crops. This predominantly consists of wheat, barley, rye, and oat hay.
Cultivated lands/pasture	Yes	Miscellaneous grasses grown for seed and irrigated pasture.
Other Agriculture		
Citrus/subtropical	Yes	Orchards composed of citrus or other subtropical fruit.
Deciduous fruits/nuts	Yes	Orchards composed of nuts or fruits that are not citrus or subtropical.
Vineyards	Yes	Grapes and other vine crops.
Pasture/turf farm	Yes	Pasture raised for turf.
Flower/nursery/ tree farms	Yes	Flower and tree farms and nurseries.
Semiagricultural/Incidental to Agriculture		
Semiagricultural/ Incidental to agriculture	Yes	Semiagricultural areas include livestock feedlots, farm steads, and miscellaneous semiagricultural features such as small roads, ditches, and unplanted areas of cropped fields (e.g., field edges).

Land Cover Type	Land Cover Fee?	Definition
Other Land Cover Types		
Barren		
Barren-anthropogenic (levees)	No[a]	Human-made barren, non-vegetated areas, primarily along on levees.
Barren-sand and gravel bars	Yes	Sparsely vegetated areas that are associated with active erosion and depositional processes along stream courses, such as floodplain areas along Cache Creek.
Blue Oak Woodland		
Blue oak alliance	Yes	Oak woodland dominated by blue oaks.
Developed	Developed areas are dominated by pavement and building structures. These areas include urban vegetation and all areas with structures, graded lots, road and highway medians, anthropogenic drainage canal vegetation, rail rights-of-way, and sewage treatment ponds that do not provide habitat. (Yolo HCP/NCCP Section 2.5.5) Vegetation in developed areas generally consists of vegetated corridors (e.g., ornamental vegetation maintained adjacent to highways) and patches of mostly ornamental vegetation, such as tree groves, street strips, shade trees, lawns, and shrubs that typically are supported by irrigation. Trees in developed lands may support roosting and nesting of covered species. (Yolo HCP/NCCP Section 2.5.5)	
Urban or built up	No[a]	Areas dominated by pavement and building structures. Includes barren lands graded for development
Urban ruderal	No[a]	Small, weedy patches of land within an otherwise urban landscape (i.e., urban in-fill)*. Differs from grassland in that it is composed of mostly of weedy forbs that invade after disturbance, such as clovers, mustard (*Brassica rapa*) or yellow star thistle. While grassland may include these early invading, weedy species, they are not dominant in grassland. (See Chapter 2 instructions for Screening Form, Box C, Item 5, for a description of how the distinguish urban ruderal from other land cover types.)
Vegetated corridor	No[a]	Ornamental vegetation maintained adjacent to highways or in association with houses and developed areas, or other vegetated corridors associated with developed areas and isolated from intact stream channels.
Eucalyptus		
Eucalyptus alliance	Yes	Stands of eucalyptus trees.
Grassland Natural Community		
California annual grassland alliance	Yes	Grassland dominated by annual grasses and forbs. Common species include wild oats, soft chess, ripgut brome, yellow star-thistle, broadleaf filaree, cutleaf filaree, Italian ryegrass, medusahead, various introduced clovers, and Zorro fescue. Associated native herbaceous species may also occur.

Land Cover Type	Land Cover Fee?	Definition
Lotus scoparius alliance	Yes	Open shrublands dominated by deerweed, where stands colonize regularly disturbed, steep and unstable soils with rocky surfaces and little soil development.
Sparse bush lupine/annual grasses/rock outcrop alliance	Yes	Areas dominated by annual grasses with sparsely growing bush lupine, usually associated with rock outcrops.

[a] Exception – land cover fees may be applicable if covered species habitat is present.

Source: Yolo HCP/NCCP Section 8.4.1.1.

[b] Fallow agricultural lands, including undeveloped parcels along the urban-agricultural interface >2 acres, are treated as agricultural land requiring a land cover fee, rather than barren (anthropogenic) or urban ruderal which do not require a land cover fee. See Chapter 6 instructions for Screening Form, Box C, Item 5, for a description of how to distinguish urban-ruderal from agricultural lands.

Box C, Item 5: Fee Paying Land Cover Types

If a project does not meet any of the fee exemptions in Items 1–4, the applicant should continue with completion of the form. Item 5 identifies whether the project will affect fee-paying land cover types. See Table 2-1 of this permitting guide, which defines each of the land cover types and indicates whether each type requires a fee. If fee-paying land cover types will be affected, the project requires permit coverage. If no fee paying land cover types will be affected, the project is exempt from land cover fees and wetland fees but AMMs may apply. The applicant should next go to Item 6 to determine if AMMs apply.

Distinguishing Urban-Ruderal from Other Land Cover Types

It is sometimes difficult to distinguish urban-ruderal (non-fee paying land cover type) from grassland or fallow agricultural lands (fee-playing land cover type). The intent of the urban-ruderal designation, which is exempt from fees, is to characterize sites that have already been disturbed and have no covered species habitat value, such as small infill areas within the urban core. The plant composition would be primarily invasive weed species, but sometimes it is difficult to distinguish these urban-ruderal lands (non-fee paying land cover type) from grasslands or fallow agricultural lands that have weedy components (fee paying land cover types). A description of how to distinguish urban-ruderal lands from grasslands or agricultural lands is provided in the detailed instructions for the Screening Form, Box C, found in Chapter 5.

A couple of things are important when characterizing a site as urban ruderal and distinguishing it from grassland or agricultural land. The qualified biologist should follow these guidelines when uncertain whether an area should be mapped as urban-ruderal.

1. Review the recent history of land use on the site. An idle agricultural field at the edge of an urban area—or a recent infill resulting from new surrounding development—can potentially meet the definition in Table 2-1 for urban-ruderal, but may be more accurately classified as agricultural land. Idle fields are typically comprised of a variety of non-native weed species, often very dense associations of invasive species. If the surrounding agricultural land was recently developed and a small infill or edge remains, one might regard this as an urban-ruderal land cover. But instead, it could be part of an idle agricultural field. In one or two seasons, an active agricultural field can convert to a weedy,

idle field, which may meet the vegetation definition of an urban-ruderal site, but may be more appropriately considered agricultural land cover. As such, reviewing the recent land use history of the site is important in making this distinction.

2. Carefully assess the vegetation composition and determine the dominant species. Of the three types under grassland natural community, only the California annual grassland alliance is potentially problematic (see definition in Table 2-1, and note the potential overlap with the urban-ruderal definition). To distinguish urban-ruderal from California annual grassland alliance, it is important for the qualified biologist to clearly identify the dominant species and their relative cover. The land cover definitions refer to the *dominant* plant associations. A grassland may, and usually does, include a variety of invasive species, such as yellow star-thistle. If the dominant plants are grasses and forbs, but the site has an herbaceous overstory of yellow star-thistle (which might be more obvious through casual observation), then by definition, the site is a grassland. Biologists can make this distinction through a simple visual survey of the site. There is no expectation that a complete vegetation survey will be conducted. The result could be a simple table that describes the dominant species or species alliance and their relative cover or sufficient text to demonstrate the results of the assessment.

Box C, Item 6: Proximity to Sensitive Natural Communities or Covered Species Habitat

Item 6 determines whether the project has the potential to affect sensitive natural communities or covered species in the vicinity of the project site, based on the resource protection buffer distances provided in Table 2-2, below.

If the project is entirely on developed land, and the only factor that would require Yolo HCP/NCCP permit coverage is potential effects on off-site resources due to encroachment within the resource protection buffer distances described in Table 2-2, then the applicant may have the ability to avoid these offsite resource (as described under Item 7) and thus avoid the need for permit coverage under the Yolo HCP/NCCP.

Table 2-2. Project Proximity to Sensitive Natural Communities or Covered Species Habitats Triggering Avoidance and Minimization Measures

Sensitive Natural Community / Covered Species	Avoidance and Minimization Measure is triggered (Select YES for Screening Form , Box B, Item 3) if the Project Footprint is within:
Sensitive Natural Community	
Alkali prairie and vernal pool complex	250 feet of land cover types categorized under this natural community[a]
Valley foothill riparian	100 feet of land cover types categorized under this natural community[a]
Lacustrine and riverine	25 feet of land cover types categorized under this natural community[a] in urban planning units, and within 100 feet in all other planning units
Fresh emergent wetlands	50 feet of land cover type land cover types categorized under this natural community[a]

Sensitive Natural Community / Covered Species	Avoidance and Minimization Measure is triggered (Select YES for Screening Form , Box B, Item 3) if the Project Footprint is within:
Covered Species	
Palmate-bracted bird's beak	250 feet of suitable habitat[b]
Valley elderberry longhorn beetle	100 feet of elderberry shrubs with stem(s) greater than 1 inch in diameter at ground level
California tiger salamander	500 feet of suitable aquatic and/or upland habitat[b]
Giant garter snake	200 feet of suitable aquatic habitat[b]
Swainson's hawk nests	1,320 feet of suitable foraging habitat and/or nest trees[b]
White-tailed kite nests	1,320 feet of suitable foraging habitat and/or nest trees[b]
Western burrowing owl	500 feet of suitable habitat[b]
Western yellow-billed cuckoo	500 feet of suitable habitat[b]
Least Bell's vireo	500 feet of suitable habitat[b]
Bank swallow	500 feet of suitable habitat[b]
Tricolored blackbird	1,300 feet of suitable habitat[b]
Western pond turtle	No species-specific ***buffer*** distance[c]

[a] Land cover types falling within each natural community category are defined in Table 2-1.
[b] See *Suitable Habitat* definition in list of terms, beginning of Permitting Guide.
[c] Habitat is located within the lacustrine and riverine natural community; therefore, buffers that trigger avoidance and mitigation measures for that natural community provide a functional buffer for western pond turtle.

Box C, Item 7: Avoidance of Sensitive Natural Communities or Covered Species Habitat

If the project overlaps with any resource protection buffers for sensitive natural communities or covered species suitable habitat, the applicant is encouraged to consider redesigning the project or implementing other measures to avoid effects on these sensitive natural communities and covered species habitats to the extent practical. An applicant is encouraged to design the project to provide setbacks away from sensitive natural communities and covered species habitat and confine project activities outside of the specified resource protection buffers.

Alternatively, an applicant has the option of working with a qualified biologist to determine whether other measures may be implemented to avoid completely the effects on sensitive natural communities and covered species. The qualified biologist may make this determination based on the nature of the project activity, site-specific conditions such as topographic or hydrologic barriers, avoidance measures incorporated into the project, or other relevant factors. For example, if tall buildings or a hill are present between the project site and the resource to be avoided, the qualified biologist may determine that the site is adequately buffered from the sensitive natural community or covered species habitat feature and the project would not adversely affect this resource. If a qualified biologist determines that the project would not affect sensitive natural communities or covered species, the project does not require permit coverage under the Yolo HCP/NCCP. The qualified biologist must provide a written assessment outlining the rationale for this determination, including relevant maps and

AMMs. This option is only available if the project is on developed land (see Yolo HCP/NCCP Section 4.5, second bullet).

If the applicant is able to avoid sensitive natural communities and covered species, check "yes" and go to Box D, Item 2: *The applicant's project does not require permit coverage under the Yolo HCP/NCCP*. The local planning office must confirm this conclusion. If the project is unable to avoid sensitive natural communities and covered species habitats, check "no" and go to Box C, Item 1: *The applicant's project does require permit coverage under the Yolo HCP/NCCP*.

If the initial assessment conducted using GeoMapper identifies potential qualified land cover types on the project site or identifies the project site as being potentially within sensitive natural communities or covered species habitat resource protection buffers, but the applicant does not believe that this is accurate, they may opt to retain a qualified biologist to conduct a field verification of the land cover. This field verification could be conducted as part of a broader planning level survey (see Section 6.2 and Appendix A). The applicant would then use the results of the field verification to fill out the Screening Form. If the applicant uses a field verification or planning level survey to answer the questions in the Screening Form, the applicant must include the results of the survey when submitting the Screening Form to the applicable member agency.

Projects on Developed Land that Potentially Affect Covered Species in the Surrounding Area

As described under Box B, Items 1 through 3, projects entirely on developed land that could affect offsite habitat may implement measures in coordination with a qualified biologist to demonstrate the project would not affect covered species or their habitat and avoid the need for Yolo HCP/NCCP permit coverage. If a project on developed land cannot demonstrate complete avoidance of effects on covered species, the project will need Yolo HCP/NCCP permit coverage and will need to complete the Application Form, but only Boxes A through C, F, G, and I of this form. Although the project is exempt from land cover fees and administrative fees, the applicant will need to implement measures immediately prior to and/or during project construction to minimize effects on the species (i.e., AMMs). These measures may include pre-construction surveys or construction monitoring by a qualified biologist.

If a project does not require land cover fees because it is entirely on developed land, and the project does not require AMMs, then Box D, Item 2 should be checked, as described below. The project does not require permit coverage and no additional forms are necessary.

Box D: Conclusions and Form Submittal Instructions

By completing previous items in the Screening Form, the applicant will have been directed to either check Box D, Item 1 (indicating the project does require Yolo HCP/NCCP permit coverage) or Box D, Item 2 (indicating the project does not require Yolo HCP/NCCP permit coverage).

If Yolo HCP/NCCP coverage is not required for the project, the applicant may still seek permit coverage as an SPE. The applicant should contact the Conservancy to continue the application process as an SPE. SPE permit coverage is not guaranteed. SPEs will need to develop a cost

recovery agreement with the Conservancy. Additional details regarding SPEs are available in the Yolo HCP/NCCP Sections 4.2.1.3 and 7.2.5.

Box E: Signatures

Box E, Items 1 and 2

The applicant provides the property owner's name and contact information and sign and date the form.

Box E, Items 3 and 4

If a consultant or other agent completed this form on behalf of the property owner, provide the consultant name and contact information as well as the signature from an authorized representative.

Submittal Process

See the submittal instructions at the bottom of the Screening Form. If the form indicates that the project may require Yolo HCP/NCCP permit coverage (Box C, Item 1), include the application fee (unless the project has no fee-paying land cover types and only requires coverage for implementation of AMMs) and next complete the Application Form.

Chapter 3
Application Form for Private Projects

The Application Form for private projects is the official application form for permit coverage under the Yolo HCP/NCCP. If the Screening Form (Chapter 5) indicates the project is a covered activity, the applicant will work with the appropriate member agency with discretionary permitting and approval authority over the project to complete an Application Form. The Application Form identifies relevant project information, determines land cover fee and wetland fee obligations, and identifies applicable AMMs. A Preliminary Application may be submitted prior to completion of the CEQA process to allow for required biological evaluations to take place as a component of CEQA compliance and to encourage project design modifications that would minimize species and habitat impacts.

The applicant must complete and execute a Final Application to secure Yolo HCP/NCCP permit coverage. This may occur after the completion of CEQA compliance and final action by the local agency to approve and condition the project. The applicant will have all the information needed to complete the form at that time, as well as certainty regarding the ability of the project to move forward.

Please note the following.

- The requirements in this application are minimum requirements. The Conservancy or the member agency with discretionary permitting authority may request more information to clarify or complete an application package.
- If a project requires multiple development permits, the Yolo HCP/NCCP requires an approved application for permit coverage and payment of fees before the member agency grants the first development permit authorizing ground disturbing activity (usually a grading permit). If a project consists of multiple phases, the Conservancy or the member agency may allow the applicant to phase Yolo HCP/NCCP fees, provided early phases of development do not diminish the habitat value associated with undeveloped lands by isolating that habitat. Because the later phases could potentially not be developed, earlier phases must apply the AMMs described in Box G to address potential indirect effects on adjacent habitat associated with subsequent phases. If the applications are phased for a project, subsequent phases must go through this application process (unless the application is initially completed for all phases prior to commencement of the project) with the Conservancy or the member agency, even if no CEQA compliance is necessary for subsequent phases.
- To avoid project delays, applicants are advised to become familiar with the survey timing requirements (Table 6-2) and start planning for surveys based on site conditions as soon as possible.

Box A: Preliminary vs. Final Submittal

The applicant is encouraged to complete and submit a preliminary version of the Application Form (the Preliminary Application) early in the process. Ideally this would occur after (or at the same time) a land development application is been submitted and prior to completion of the CEQA impact analysis. This allows for the applicant to work with the appropriate local agency to determine potential Yolo HCP/NCCP fees and applicable AMMs. Important to note is that some of the AMMs—particularly those requiring species surveys—must be conducted during certain times of year (Table 6-2). Applicants are advised to become familiar with these conditions and plan the project development process accordingly.

The applicant should complete and submit both the Screening Form (required) and the Preliminary Application (optional but encouraged) prior to submitting the Final Application**,** which is the official application form for Yolo HCP/NCCP permit coverage. The final determination of fees and conditions will be through the review of the Final Application conducted by the local agency with approval authority. The planning level surveys are not required until submittal of the Final Application; however, the Conservancy strongly encourages applicants to complete this survey to verify the land cover at the project site early in the process, ideally prior to or at the same time as the CEQA impact analysis, to more accurately determine Yolo HCP/NCCP AMMs, fees, and any pre-construction surveys that will be required.

Boxes B and C: Application Details

For Box B, Item 3, the applicant should use the application file number provided by the member agency. For Item 4, the applicant should check the "Special Participating Entity" box if the project is not subject to the jurisdiction of one of the member agencies or if the applicant's project is not specifically identified (or specifically precluded) in the Yolo HCP/NCCP as a covered activity. Please provide current contact information in Box C.

Box D: Project Overview

Box D, Items 1–3: Project Location, Parcel Information

The applicant must provide the physical address for the project. If the project does not have an address, the applicant must provide a brief description of the project location sufficient to find the site on a map, as well as the assessor's parcel number(s) (APN[s]) and total acreage of the proposed project. The total acreage should equal the sum of all the land cover type acreages entered in Box E of the application.

Box D, Item 4: Planning Units

The applicant must determine the planning unit within which the project occurs. This can be done using the Conservancy's online GeoMapper, aerial photos, maps, or other available resources.

Box D, Item 5: Project Description (Attachment 1)

The applicant must provide a written description (labeled as "Attachment 1," or identify page numbers in the planning level survey) that describes the project and its location, including all proposed development that will occur on site. Such development includes all proposed structures (e.g., residences, barns, detached buildings) and associated improvements (e.g., septic systems, new or improvements to existing roads, driveways, bridges, outfalls, vehicle parking areas, tennis courts, swimming pools, decks, patios). In describing the project, the applicant must identify areas that are permanently affected by the project and any construction activity that will result in ***temporary impacts*** on the project site (i.e., construction staging areas, septic systems, or installation of subsurface utilities, etc., where land cover types will be restored to pre-project conditions within one year of disturbance).

Box D, Item 6: Vicinity Map (Attachment 2)

The applicant must provide an Adobe PDF of a vicinity map (labeled as "Attachment 2," or identify page numbers in the planning level survey). The vicinity map must show the location of the project relative to adjacent property, streets, and highways. The scale should be such that the project site consists of only the center portion of the vicinity map, with approximately 0.25 mile around the site shown. On the map, include the scale and a north arrow.

Box D, Item 7: Site Plan (Attachment 3)

The applicant must provide both an Adobe PDF and a CAD- or GIS-compatible site plan (labeled as "Attachment 3") that provides a site plan with verified land cover types. Instead of providing a separate PDF, the applicant may include the site plan in the planning level survey and indicate the relevant report page number under Box D, Item 7.

The site plan must show the proposed development area, verified land cover type(s) in the development area, any relevant landforms, roads, waterbodies, and existing and proposed structures that the proposed project would affect. The preferred spatial data formats are either shapefiles or ESRI's personal (.mdb)/file (.gdb) geodatabases. Layer files (.lyr), which apply symbology to the data are helpful, as are Layer Package files (.lpk), which provide both data and symbology packaged together. The applicant may submit CAD files provided the projected coordinate system is documented and linetypes are explained. Permanent impact and temporary impact areas shown on the site plan must match the calculated areas in Box E of the Application Form.

Box E: Natural Community and Land Cover Impacts and Mitigation Fees

Box E (Attachment 4)

Provide a planning level survey report with field verification (labeled as "Attachment 4") completed by a qualified biologist. The recommended or required elements of the report are provided in Table 6-2. If the site includes the urban or built up land cover type, member agency

staff with the appropriate expertise or a qualified biologist can verify the land cover type. The Conservancy may independently verify this determination.

Box E, Items 1-27: Land Cover Impacts

The applicant must fill out the acres of verified permanent impact for each land cover type in Box E, lines 0 through 22. For ***permanent impacts***, the applicant will calculate the area of permanent impact and fee paying land cover types within the 50-foot ***land cover fee buffer*** (a 10-foot land cover fee buffer applies to linear projects). The land cover fee buffer does not apply to temporary impacts.

The member agency must verify land cover as part of the Application Form. A member agency land use planner can verify if a site is urban or built up based on the Conservancy's definition and a site visit. The Conservancy may independently verify the lead agency's verification of land cover as urban or built up. If the site is not entirely on an urban or built up land cover type, a qualified biologist must provide the land cover evaluation for the member agency to verify. Table 6-1 provides the required elements of a planning level survey.

Calculating the project's area of impact:

Land cover fee = *the area of permanent impact, plus a buffer of 50 feet (but not extending beyond the boundary of the parcel). See Figure 3-1.*

Land cover fee for linear projects = *the area of permanent impact, plus a 10 foot buffer, regardless of parcel size. See Figure 3-2.*

The applicant must enter the amount of the Conservancy's adopted application fee for the Application Form. The application fee covers Conservancy staff time to review and assist with the application. If the applicant pays the application fee with submittal of the Screening Form, the amount will be deducted from the total fees owed by the applicant with Final Application Form submittal, unless the applicant owes no fees. The member agency will collect the application fee, but the applicant will write the check to the Conservancy. The application fee is not required for projects that do not affect fee-requiring land cover types (i.e., if the project requires AMMs but does not require land cover fees).

Determining Area of Impact

Figures 3-1 and 3-2 illustrate how to determine the area of impact for fee calculations.

Figure 3-1. Determining Area of Impact for Fee Calculations of Non-Linear Projects

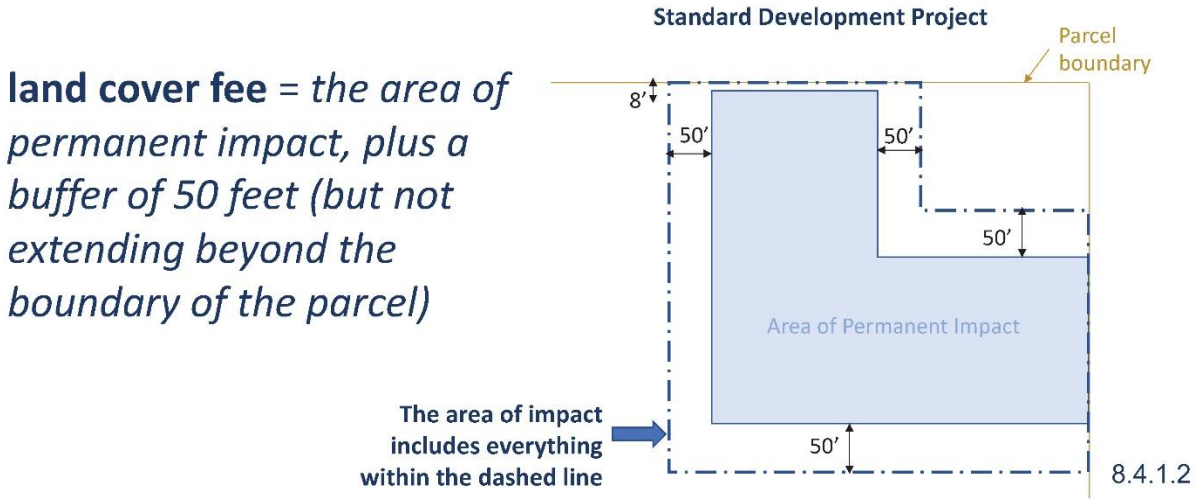
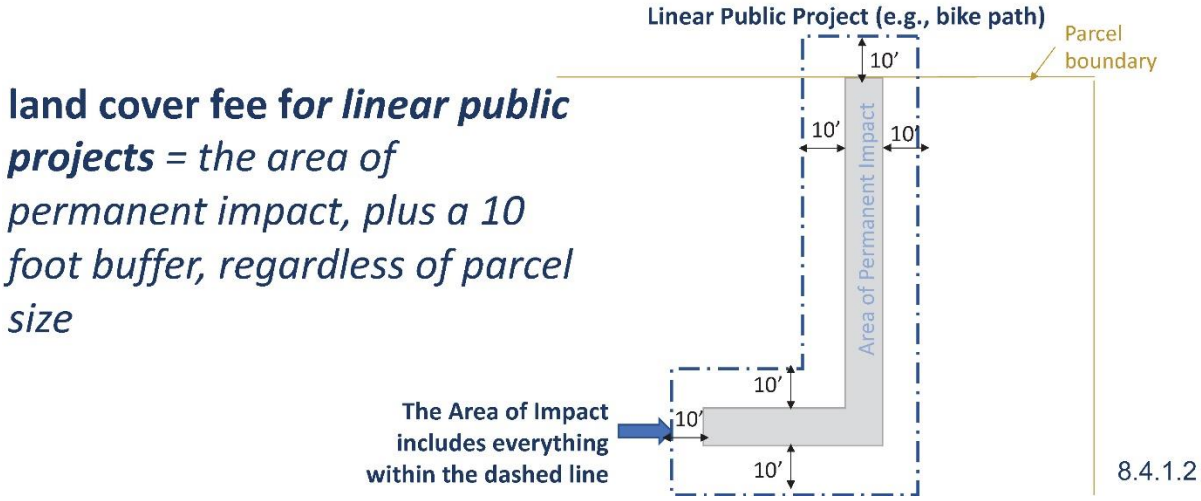


Figure 3-2. Determining Area of Impact for Fee Calculations of Linear Projects



Lot Splits and Subdivisions

Following are some specific examples of land cover fees associated with lot splits and subdivisions.

- If an applicant wants to split a property that consists of a fee-paying land cover type(s)into multiple parcels that could each subsequently be developed (i.e., they are not zoned as Agricultural Intensive or Extensive), the member agency should charge the applicant the land cover fee for the entire original parcel at or before the time of the parcel split. This situation may arise if a developer is subdividing a parcel for future residential development.
- If an applicant receives tentative map approval to subdivide a large parcel (greater than 80 acres) in a rural planning unit located within the Agricultural Intensive and Extensive zones (A-N and A-X), then at or before the time of final or parcel map approval, the applicant will be charged a land cover fee for 2.5 acres for each new parcel. The 2.5-acre amount is the assumed project footprint associated with an agricultural home site. Since a 2.5-acre area is

sufficiently large to cover development of a house and surrounding indirect effects, no additional land cover fee buffer is applied beyond the 2.5 acres.

- If an applicant has a by-right to-build on a single parcel without paying Yolo HCP/NCCP fees and then proposes to split the parcel into two or more parcels, then the applicant only needs to pay the fees on the new resultant parcels and not on the original area covered by-right to-build.
- For example:
    - A 6 acre parcel has a by-right to-build two homes without paying HCP/NCCP fees.
    - The resultant two 2-acre parcels would be required to pay fees, but the initial parcel (now just 2 acres instead of 6,) still has a by-right to-build without paying fees. Therefore, the applicant only needs to pay fees on 4 acres (the two resultant parcels) rather than the entire 6 acres.

Minimum Mapping Units for Land Cover Mapping

The applicant should provide calculations in Box E using the following method.

- For all land cover types (except fresh emergent wetland, valley foothill riparian, and lacustrine and riverine), provide calculations to nearest tenth (0.1) of an acre.
- For fresh emergent wetland, valley foothill riparian, and lacustrine and riverine land cover types, provide calculations to the nearest hundredth (0.01) of an acre.
- For streams, provide calculations in linear feet. Please contact the Conservancy for information about the SPE fees.

For Line 24, please enter the amount the applicant paid to the Conservancy for the application fee if already paid. The member agency will deduct the application fee from the total fees owed by the applicant, unless the applicant owes no fees. (An applicant who owes no fees must still pay the application fee.) The application fee covers Conservancy staff time to review and assist with the application.

If the applicant provides land in lieu of the fee or purchases credits from an approved mitigation receiving site, please see the section describing the process for securing this approval and contact the Conservancy for further information.

The member agency will collect the full land cover/wetlands fee prior to issuing the first development permit authorizing ground-disturbing activity (usually a grading permit). The member agency will transmit all fees to the Conservancy quarterly, or more frequently if requested by the Conservancy.

Box E, Item 30: Dedicating Land In Lieu of Paying Fees (Attachment 5)

If the applicant proposes to dedicate land in lieu of paying fees, the applicant must summarize these actions and attach written documentation indicating the Conservancy has approved these actions in lieu of fees (labeled as “Attachment 6”).

Box F: AMMs: Conduct Species Surveys

Box F, Items 1–15 (Attachments 6 and 7)

If the habitat for a covered species potentially occurs in or near the impact area as determined during the processes for completing the Screening and Application Forms, a qualified biologist must verify habitat presence. If habitat is present in or near the impact area for the species indicated in Box F, species surveys by a qualified biologist may potentially be required for some species and the survey findings, including survey methods, timing, results, and qualifications of the biologist, must be included with the application. Label the species survey(s) "Attachment 6." The species survey(s) must follow protocols provided in Appendix A. All planning level surveys must be complete before submitting the Final Application.

Applicants should note the timing requirements for species-specific planning level surveys for all covered species in Table 6-2 of this manual so that they can meet intended schedules and avoid project delays. See Section 6.2 for additional details regarding species surveys.

Applicants should attach a description of the anticipated impacts the proposed activity will have on each affected covered species, and label this "Attachment 8." This information will be used to track take limits for the Yolo HCP/NCCP as described in Chapter 9. Attachment 7 should include the following information.

- Acres of each covered species habitat type to be removed or converted. Differentiate between permanent and temporary effects. Habitat determinations must be made by a qualified biologist.
- Number of Swainson's hawk nest trees (occupied by an active nest within the last 5 years) to be removed (these trees must be unoccupied while removed). This is limited to 20 trees during the 50-year permit term.
- Number of white-tailed kite nest trees (occupied by an active nest within the last 5 years) to be removed (these trees must be unoccupied while removed). This is limited to one tree over the 50-year permit term.
- Anticipated number of occupied burrowing owl sites to be relocated. This is limited to four during the 50-year permit term).
- If the project will isolate any upland habitat for giant garter snake, California tiger salamander, or western pond turtle from all adjacent aquatic habitat, provide the number of upland acres that will become isolated for each species. This is limited to 55 acres of upland habitat that may be isolated in this manner over the 50-year permit term.

Box G: Conditions of Approval: Preconstruction Surveys

Box G, Items 1–7

Check the appropriate boxes for pre-construction surveys that will need to be conducted. Pre-construction surveys are generally conducted during the post-application phase, after project design is complete and the application has been approved, and immediately prior to project construction. The purpose of the pre-construction survey is to determine whether species are

present and whether measures must be implemented to avoid injuring or killing individuals. Preconstruction survey requirements are provided in Table 6-2.

Box H: Conditions of Approval: Avoidance and Minimization Measures

Box H, Items 1–21 (Attachment 8)

Chapter 8 lists the full text of each AMM.

As described in Table 6-2, the planning level survey will identify covered species habitat present on the project site, as well as sensitive natural communities and covered species habitat in the project site vicinity. The qualified biologist will use information gathered during the planning level survey to determine which AMMs apply to the project. It is important to identify AMMs as early in the planning process as possible because the AMMs could affect project design and timing. To avoid project delays, applicants are advised to become familiar with the survey timing requirements (Table 6-2) and start planning for surveys based on site conditions as soon as possible while completing the Preliminary Application. The AMMs may also include ***construction requirements*** such as monitoring by a qualified biologist during construction for some covered species. Applicants should plan for the implementation of these construction requirements during project planning.

Box I: Attachment Checklist

The applicant will check each box that corresponds with an attachment included in the application. If the required information is provided in an attached report, provide the name of the report and the page numbers at which the information can be found.

Box J: Signatures

This box requires signatures and contact information from the landowner and project agent or applicant.

Post-Construction Checklist

Following construction, the applicant will submit a post-construction checklist to the member agency's land use planner describing the results of preconstruction surveys and construction requirements. This will be important for the Conservancy to be able to document compliance with the terms of the Yolo HCP/NCCP permit. The memo is designed as a simple checklist to indicate completion of required AMMs along with brief results of the surveys, monitoring, and other actions, including but not limited to the following types of information.

1. If elderberry shrubs were transplanted.
2. For projects requiring construction monitoring, a description of any covered species individuals observed during construction monitoring. If any individuals had to be relocated

during construction, a description of the numbers of individuals moved and location(s) to which they were moved. Describe and quantify any individuals injured or killed.

Any additional information specified in the AMMs for post-construction reporting (e.g., documentation of restoration for temporarily affected areas).

Chapter 4

Screening and Reporting Form for Member Agency Projects

Member agencies, who are Permittees, will submit a ***Reporting Form*** to the Conservancy instead of filling out the private project Application Form in order to document their intent to utilize the Yolo HCP/NCCP permit coverage for member agency projects. This chapter provides instructions for filling out the Screening Form and Reporting Form for member agency projects.

Screening Form for Member Agency Projects

The applicant will work with the appropriate local agency to complete *Screening Form for Member Agency Projects* and evaluate if a member agency project qualifies for coverage under the Yolo HCP/NCCP permits and is subject to the permit requirements. The Screening Form is not an application for coverage under the Yolo HCP/NCCP; rather is a tool to determine whether a project is eligible for coverage.

Coverage Screening Limitations

The coverage screening conducted when completing the Screening Form for Member Agency Projects provides an early indication of the types of impacts and associated AMMs that may apply to the project. The member agency contact must verify the land cover type and conduct planning level surveys prior to the submittal of a Reporting Form.

This form is used to make one of two determinations regarding a proposed project:

- The proposed project is a covered activity under the Yolo HCP/NCCP and the applicant must continue with the application process; or
- The proposed project is not a covered activity under the Yolo HCP/NCCP and no additional action regarding the Yolo HCP/NCCP is needed unless the project applicant desires "opt-in" coverage for the project as an SPE.

Each of these conclusions must be confirmed by the member agency's planning/building office that has jurisdiction over the area in which the project is proposed. A project applicant that desires coverage as an SPE must contact the Conservancy to seek coverage as an SPE regardless of the location of the project.

Box A: Project Information

Box A, Items 1–6

Provide the requested information concerning the proposed project. The brief project description should include all proposed development that would occur on-site, including any construction activities that would result in ***temporary impacts*** (e.g., temporary work areas, staging areas, installation of subsurface utilities for which land cover will be restored to pre-project conditions within one year of disturbance).

Item 5 asks whether the project requires discretionary approval. The following types of public works maintenance projects are generally considered ministerial, involve activities over existing developed land, such as the paved and graveled surfaces, and would not generally be subject to the requirements of the Yolo HCP/NCCP. However, a member agency may use the Yolo HCP/NCCP if needed to authorize take of listed species for covered activities, such as trimming of elderberry shrubs or Swainson's hawk nest trees.

- Chip seals
- Slurry seals
- Hot mix asphalt overlays
- Cold-in-place recycling
- Full depth reclamation of existing developed land (grinding and repaving in place with existing materials and added cement)
- Guardrail replacement
- Modification or addition of traffic control features (e.g., striping and signage)
- Pothole repairs/dig out repairs on existing roads

Box B: Screening Questions

Box B, Items 1-3

The applicant will identify the likely land cover type(s) and any sensitive natural communities and covered species habitats associated with the project area. To achieve this, the applicant may use 2018 aerial photos and the GeoMapper, the Yolo HCP/NCCP's online mapping tool, or work with Conservancy staff if the GeoMapper is not available, to locate the applicant's project and conduct an initial assessment, as described in Section 6.1, under *Initial Assessment*.

Alternatively, the applicant can opt to retain a qualified biologist to conduct a planning level survey, as described in Section 6.1, under *Planning Level Survey for Land Cover Types and Covered Species Habitat* to obtain more accurate information for completing The Screening Form. For projects that require coverage under the Yolo HCP/NCCP, planning level surveys will eventually be required for the formal application (*Yolo HCP/NCCP Plan Reporting Form for Member Agency Projects*). If an applicant believes the project is likely not covered, they may wish to use the initial assessment to fill out the Screening Form rather than conducting planning level surveys. If, however, an applicant is fairly certain their project is covered they are encouraged to complete planning level surveys early in the process to help fill out the Screening Form and Application Form.

Initial Assessment vs. Planning Survey

The initial assessment conducted using GeoMapper relies on regional scale data to provide preliminary information that may assist an applicant in understanding how the Yolo HCP/NCCP may apply to their project early in the project planning and application process. This initial assessment is for informational purposes only and does not replace the need to provide verified site-specific information when submitting the Application Form (Forms 3 and 4). Planning surveys are site-specific and verified in the field.

Box B, Item 4

If the project overlaps with any sensitive natural communities or covered species habitat resource protection buffers specified in Table 2-2, the applicant is encouraged to consider redesigning the project or implementing other measures to avoid effects on these sensitive natural communities and covered species habitats to the extent practical. If the applicant is able to do this, they should check "yes" and go to Box C, Item 2: *The applicant's project does not require coverage under the Yolo HCP/NCCP*, although the local planning/building office must officially confirm this conclusion. An applicant may choose to design the project to provide setbacks away from sensitive natural communities and covered species habitat, to confine project activities outside of the specified resource protection buffers.

Alternatively, an applicant has the option of working with a qualified biologist to determine whether other measures may be implemented to completely avoid effects on sensitive natural communities and covered species. The qualified biologist may make this determination based on the nature of the project activity, site-specific conditions (e.g., topographic or hydrologic barriers), avoidance measures incorporated into the project, or other relevant factors. If a qualified biologist determines that the project will not affect any sensitive natural communities or covered species, then the project does not require coverage under the Yolo HCP/NCCP. The qualified biologist must provide a written assessment outlining the rationale for this determination, including relevant maps and avoidance measures. This option is only available if Item 1 in the Screening Form for Member Agency Projects, Box B, is checked "yes."

If the project is unable to avoid sensitive natural communities and covered species habitats, check "no" and go to Box C, Item 1: *The applicant's project does require coverage under the Yolo HCP/NCCP*.

If the applicant does not feel the results of the initial assessment conducted using GeoMapper are accurate, they may choose to retain a qualified biologist to conduct a planning level survey (see Section 6.2 and Appendix A) to show that sensitive natural communities and covered species habitats are not present. The applicant may also choose to skip the initial assessment and instead use the results of a planning level survey to fill out the Screening Form for Member Agency Projects. If a planning level survey is used to answer the screening questions, the applicant must include the survey report when submitting the Screening Form for Member Agency Projects to the applicable member agency.

Box C: Conclusions and Form Submittal Instructions

By completing previous items in the form, the applicant will have been directed to either Box C, Item 1 (indicating the project does require Yolo HCP/NCCP coverage) or Box C, Item 2 (indicating the project does not require Yolo HCP/NCCP coverage).

If Yolo HCP/NCCP coverage is not required for the project, the applicant can still "opt-in" to the Yolo HCP/NCCP as an SPE. The applicant will need to contact the Conservancy to continue the application process. Opt-in coverage is not guaranteed.

Box D: Signatures

Box D, Items 1 and 2

The applicant should provide the member agency contact's name and contact information and sign and date the form.

Submittal Process

If the form indicates that the project may require Yolo HCP/NCCP coverage (Box C, Item 1), then complete *Reporting Form for Member Agency Projects*. Submit both completed forms to the local planning/building office as early as possible in the project development process.

If the form indicates that the project does not require Yolo HCP/NCCP coverage (Box C, Item 2), then the applicant should submit the Screening Form for Member Agency Projects to the local planning/building office as early as possible in the project development process. The local planning/building office must confirm that the project does not require Yolo HCP/NCCP coverage.

If the applicant wishes to apply for opt-in coverage as an SPE, the applicant must submit the Screening Form for Member Agency Projects to the Conservancy as early as possible in the project development process.

Reporting Form for Member Agency Projects

Yolo HCP/NCCP Reporting Form for Member Agency Projects is the official Reporting Form for coverage under the Yolo HCP/NCCP. Please note the following.

- The requirements in the Reporting Form are minimum requirements. The Conservancy or the member agency with discretionary permitting authority may request more information to clarify or complete an application package.
- If a project requires multiple development permits, the Yolo HCP/NCCP requires an approved application for coverage and payment of fees before the member agency grants first development permit authorizing ground-disturbing activity (usually a grading permit). If a project consists of multiple phases, the Conservancy or the member agency may allow the applicant to phase Yolo HCP/NCCP coverage applications and fees, provided early phases of development do not diminish the habitat value associated with undeveloped lands by isolating that habitat. Because the later phases could potentially not be developed, earlier phases must apply the AMMs described in Box G to address potential indirect effects on adjacent habitat associated with subsequent phases. If the applications are phased for a project, subsequent phases must go through this application process (unless the application is initially completed for all phases prior to commencement of the project) with the Conservancy or the member agency, even if no CEQA compliance is necessary for subsequent phases.
- To avoid project delays, applicants are advised to become familiar with the survey timing requirements (Chapter 3) and start planning for surveys based on site conditions as soon as possible.

Box A and B: Reporting Form Details and Member Agency Contact

For Box A, Item 3, the applicant should use the application file number provided by the member agency. Please provide current contact information in Box B.

Box C: Project Overview

Box C, Items 1–3

The applicant must provide the physical location for the project. If the project does not have an address, the applicant must provide a brief description of the project location sufficient to find the site on a map, as well as the assessor's parcel number(s) (APN[s]) and total acreage of the proposed project. The total acreage should equal the sum of all the land cover type acreages entered in Box D of the application.

Box C, Item 4

An applicant may use the Conservancy's online GeoMapper and 2018 aerial photos provided by the Conservancy to identify the project site or pay a fee to the Conservancy to assist with this task. If the applicant wishes to pay the fee, please contact the Conservancy for additional information. If the applicant uses the GeoMapper and aerial photos, the applicant must use this information to indicate in which planning unit the project lies.

Box C, Item 5 (Attachment 1)

The applicant must provide a written description (labeled as "Attachment 1") that describes the project and its location, including all proposed development that will take place on site. Such development includes all proposed structures (e.g., residences, barns, detached buildings) and associated improvements (e.g., septic systems, new or improvements to existing roads, driveways, bridges, outfalls, vehicle parking areas, tennis courts, swimming pools, decks, patios). In describing the project, the applicant must identify areas that will be permanently affected by the project and any construction activity that will result in temporary impacts on the project site (i.e., construction staging areas, septic systems, or installation of subsurface utilities).

Box C, Item 6 (Attachment 2)

The applicant must provide an Adobe PDF of a vicinity map (labeled as "Attachment 2"). The vicinity map shows the location of the project relative to adjacent property, streets, and highways, and also will be used to indicate the lot sizes and patterns of surrounding property. The scale should be such that the project site consists of only the center portion of the vicinity map, with approximately 0.25 mile around the site shown. On the Adobe PDF, include the scale of the map and a north arrow.

Box C, Item 7 (Attachment 3)

The applicant must provide both an Adobe PDF and a CAD- or GIS-compatible site plan (labeled "Attachment 3") that shows the proposed development area, verified land cover type(s) in the

development area, any relevant landforms, roads, waterbodies, and existing and proposed structures that the proposed project will affect. The preferred spatial data formats are either shapefiles or ESRI's personal (.mdb)/file (.gdb) geodatabases. Layer files (.lyr), which apply symbology to the data are helpful, as are Layer Package files (.lpk), which provides both data and symbology packaged together. The applicant may submit CAD files provided the projected coordinate system is documented and linetypes are explained. Permanent impact and temporary impact areas shown on the site plan must match the calculated areas in Box D of the Reporting Form.

Box D: Natural Community and Land Cover Impacts and Mitigation Fees

Box D (Attachment 4)

The applicant should provide a field verification report (labeled as "Attachment 4"), to be completed by a qualified biologist. If the site consists of the urban or built up land cover type, a staff person from the local planning department/building office can verify the land cover type. The Conservancy may independently verify this determination.

Box D, Items 0–29

The applicant must fill out the acres of verified permanent impact for each land cover type in Box D, lines 0 through 22.

The applicant should provide calculations in Box D using the following method.

- For all land cover types, except riparian, wetland, and stream, provide calculations to nearest tenth (0.1) of an acre.
- For riparian forest and scrub, and wetland land cover types, provide calculations to the nearest hundredth (0.01) of an acre.
- For streams, also provide calculations in linear feet.

The Yolo HCP/NCCP includes caps on the total amount of each natural community type that may be removed through covered activities (Yolo HCP/NCCP Table 5-1). The Conservancy will provide the member agencies with information on the total amount of each natural community type (based on land cover type) that has been removed through Yolo HCP/NCCP covered activities throughout the Plan Area and how much more may be removed. The land use planners will then be required to check each application against these numbers to ensure no projects exceed any of the specified caps.

If the applicant provides land in lieu of the fee or purchases credits from an approved mitigation receiving site, please see the section describing the process for securing this approval and discuss with Conservancy staff.

The member agency will collect the full fee prior to issuing the first development permit authorizing ground disturbing activity (usually a grading permit) and transmit fees to the Conservancy quarterly or more frequently, if requested by the Conservancy.

Box D, Item 30 (Attachment 6)

If the applicant would prefer to dedicate land in lieu of paying fees, the applicant must summarize these actions and attach written documentation indicating the Conservancy has approved these actions in lieu of fees (labeled as "Attachment 5").

Box E: Conditions of Approval: Conduct Planning Surveys

Box E, Items 1–15 (Attachments 7 and 8)

The applicant must use the GeoMapper, 2018 aerial photos and field verification data from Box D to identify modeled covered species habitat in or near the impact area. (The applicant may pay a fee to the Conservancy to perform this work.) If the covered species' habitat potentially occurs in or near the impact area, a qualified biologist must verify habitat presence. If habitat is present in or near the impact area for the species indicated in Box E, species surveys by a qualified biologist will likely be required and survey reports including survey methods, timing, results, and qualifications of the biologist, must be included with the application. Label as "Attachment 7." Surveys must follow protocols provided in Appendix A of this manual.

Applicants should note the timing requirements for species surveys for all covered species in Table 6-2 so that the intended schedule can be met and project delays avoided.

Applicants should attach a description of the anticipated impacts the proposed activity will have on the species-specific occurrence and label it as "Attachment 8."

Habitat determinations must be made by a qualified biologist.

Box F: Conditions of Approval: Preconstruction Surveys

Box F, Items 1–7

Check the appropriate boxes for pre-construction surveys that will need to be conducted. Preconstruction surveys are generally conducted during the post-application phase, after project design is complete and the application has been approved, and immediately prior to project construction. The purpose of the pre-construction survey is to determine whether species are present and whether measures must be implemented to avoid injuring or killing individuals. Preconstruction survey requirements are provided in Table 6-2.

Box G: Conditions of Approval: Avoidance and Minimization Measures

Box G, Items 1-21 (Attachment 9)

Chapter 8 lists the full text of each AMMs.

Box H: Attachment Checklist

Indicate in the form which attachments are included with the application package.

Box I: Signatures

Provide signatures and contact information as indicated in the form.

Chapter 5
Avoidance and Minimization Measures

The AMMs described in this chapter are as follows.

General Project Design

- AMM1, *Establish Resource Protection 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 Nighttime Lighting of Project Construction Sites*
- AMM8, *Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas*

Sensitive Natural Communities

- AMM9, *Establish Resource Protection 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*

General Project Design

The following measures apply generally to all covered activities for designated sensitive natural communities and covered species. These measures involve adjusting project footprints or incorporating design measures to avoid and minimize effects on natural communities and covered species.

AMM1, Establish Resource Protection Buffers. This is a general AMM regarding how to apply resource protection buffers. More specific resource protection buffer requirements are provided for the specific natural communities and covered species in subsequent AMMs.

Project proponents will design projects to avoid and minimize direct and indirect effects of permanent development on the sensitive natural communities specified in Yolo HCP/NCCP Table 4-1 (herein referred to as *sensitive natural communities*) and covered species habitat specified in Yolo HCP/NCCP Table 4-1 by providing resource protection buffers, as stipulated in the relevant sensitive natural community AMMs and covered species AMMs. Although the contents of this AMM somewhat overlap with the resource protection buffer stipulations in the natural community and covered species AMMs, it provides additional information on requirements common to all permanent resource protection buffers incorporated into project design.

On lands owned by the project proponent, the project proponent will establish a conservation easement, consistent with Yolo HCP/NCCP Section 6.4.1.3, to protect the resource protection buffer permanently if that land is being offered in lieu of development fees, as described in Yolo HCP/NCCP Section 4.2.2.6, Item 6. The project proponent will design resource protection buffer zones adjacent to permanent residential development projects to control access by humans and pets (*AMM2, Design Developments to Minimize Indirect Effects at Urban–Habitat Interfaces*).

Where existing development is already within the stipulated buffer distance (i.e., existing uses prevent establishment of the full resource protection buffer), the development will not encroach farther into the space between the development and the sensitive natural community.

This AMM does not apply to seasonal construction resource protection buffers for covered species, which are detailed for each species in Yolo HCP/NCCP Section 4.3.4.

A lesser resource protection buffer than is stipulated in the AMMs may be approved by the Conservancy, USFWS, and CDFW if they determine that the sensitive natural community or covered species is avoided to an extent that is consistent with the project purpose. For example, if the purpose of the project is to provide a stream crossing or replace a bridge, the project may encroach into the resource protection buffer and the natural community or species habitat to the extent that is necessary to fulfill the project purpose.

AMM2, Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces. For development projects implemented adjacent to non-agricultural natural communities and covered species habitats, project proponents will incorporate urban-habitat interface elements into project design to minimize the following indirect effects of the development on adjacent habitat areas.

- Noise and visual disturbances that diminish the ability of covered and other native wildlife species to use the habitat.
- Increased numbers of pets (e.g., dogs, cats) that can result in harassment and mortality of covered and other native wildlife species.
- Increased levels of direct habitat disturbances associated with increased human access to habitats (e.g., destruction of vegetation and injury or mortality of wildlife associated with use of off-road vehicles).
- Escape or planting of invasive nonnative plants.

This AMM does not apply to development where it is immediately adjacent to existing developed lands.

The project proponent will implement the following urban-habitat interface design elements and activities, as applicable, to each discretionary project.

- Place roads or other non-residential spaces, such as parks or greenbelts, rather than lots at the urban-natural community interface. The benefits of this may include a reduction in the number of incidences of pets entering the natural communities.
- Design roads, bike paths, and trails to discourage entry of humans and pets into adjacent natural communities and promote citizen policing at the natural community periphery.
- Establish barriers that discourage entry of humans and pets into natural community areas.
- Design fences to prevent pets from escaping yards into adjacent natural communities, control entry and dumping of trash into adjacent natural communities, and when appropriate, shield adjacent natural communities from visual disturbances that may interfere with normal wildlife behavioral patterns.
- Fence new public roads associated with developments to prevent unauthorized public access into habitat areas and effectively direct wildlife to specially designed crossing structures.
- Design development drainage systems and implement appropriate best management practices to avoid changes to overland flow and water quality in natural community areas, including stream courses.
- Design development lighting to avoid projecting light into adjacent natural community areas. For lights at or near the urban-natural community interface, use low-glare lighting to minimize lighting effects on natural communities.

General Construction and Operations and Maintenance

The following measures apply to covered activities for all natural communities and covered species. The applicants will incorporate these measures into construction or operations and maintenance procedures to avoid and minimize effects on natural communities and covered species.

***AMM3, Confine and Delineate Work Area*.** Where natural communities and covered species habitat are present, workers will confine land clearing to the minimum area necessary to facilitate construction activities. Workers will restrict movement of heavy equipment to and from the project site to established roadways to minimize natural community and covered

species habitat disturbance. The project proponent will clearly identify boundaries of work areas using temporary fencing or equivalent and will identify areas designated as environmentally sensitive. All construction vehicles, other equipment, and personnel will avoid these designated areas.

AMM4, Cover Trenches and Holes during Construction and Maintenance. To prevent injury and mortality of giant garter snake, western pond turtle, and California tiger salamander, workers will cover open trenches and holes associated with implementation of covered activities that affect habitat for these species or design the trenches and holes with escape ramps that can be used during non-working hours. The construction contractor will inspect open trenches and holes prior to filling and contact a qualified biologist to remove or release any trapped wildlife found in the trenches or holes.

AMM5, Control Fugitive Dust. Workers will minimize the spread of dust from work sites to natural communities or covered species habitats on adjacent lands.

AMM6, Conduct Worker Training. All construction personnel will participate in a worker environmental training program approved/authorized by the Conservancy and administered by a qualified biologist. The training will provide education regarding sensitive natural communities and covered species and their habitats, the need to avoid adverse effects, state and federal protection, and the legal implications of violating the ESA and Natural Community Conservation Planning Act permits. A pre-recorded video presentation by a qualified biologist shown to construction personnel may fulfill the training requirement.

AMM7, Control Nighttime Lighting of Project Construction Sites. Workers will direct all lights for nighttime lighting of project construction sites into the project construction area and minimize the lighting of natural habitat areas adjacent to the project construction area.

AMM8, Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas. Project proponents should locate construction staging and other temporary work areas for covered activities in areas that will ultimately be a part of the permanent project development footprint. If construction staging and other temporary work areas must be located outside of permanent project footprints, they will be located either in areas that do not support habitat for covered species, or are easily restored to prior or improved ecological functions (e.g., grassland and agricultural land). Construction staging and other temporary work areas located outside of project footprints will be sited in areas that avoid adverse effects on the following.

- Serpentine, valley oak woodland, alkali prairie, vernal pool complex, valley foothill riparian, and fresh emergent wetland land cover types.
- Occupied western burrowing owl burrows.[4]
- Nest sites for covered bird species and all raptors, including noncovered raptors, during the breeding season.

[4] *Occupied* for the purpose of AMM8 means at least one burrowing owl has been observed occupying the burrow within the last 3 years. Occupancy of a burrow may also be indicated by owl sign at the burrow entrance, including molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance or perch site (California Department of Fish and Game 2012, Appendix L).

Project proponents will follow specific AMMs for sensitive natural communities and covered species in temporary staging and work areas. For establishment of temporary work areas outside of the project footprint, project proponents will conduct surveys to determine if any of the biological resources listed above are present.

Within 1 year following removal of land cover, project proponents will restore temporary work and staging areas to a condition equal to or greater than the covered species habitat function of the affected habitat. Restoration of vegetation in temporary work and staging areas will use clean, native seed mixes approved by the Conservancy that are free of noxious plant species seeds.

Sensitive Natural Communities

The following AMMs apply to sensitive natural communities. AMMs for the natural communities not included below but providing covered species habitat are described in AMMs for covered species.

AMM9, Establish Resource Protection Buffers around Sensitive Natural Communities. The resource protection buffers for each sensitive natural community are as follows.

- *Alkali seasonal wetlands and vernal pools:* Two-hundred and fifty feet is the area necessary to provide the hydrologic conditions needed to support the wetlands within these natural communities. Covered activities will avoid vernal pools or alkali seasonal wetlands (seasonal wetlands within alkali prairie) by 250 feet, or other distance based on site specific topography to avoid indirect hydrologic effects.[5] A resource protection buffer of less than 250 feet around vernal pools or alkali seasonal wetlands will be subject to wildlife agency concurrence that effects will be avoided. Considerations that may warrant a resource protection buffer of less than 250 feet may include topography (i.e., if the surrounding microwatershed extends less than 250 feet from the pool or wetland), intervening hydrologic barriers such as roads or canals, or other factors indicating that the proposed disturbance area does not contribute to the pool's hydrology. Other considerations may include temporary disturbance during the dry season where measures are implemented to avoid disturbance of the underlying claypan or hardpan, and the area is returned to pre-project conditions prior to the following rainy season.
- *Valley foothill riparian:* One hundred feet from canopy drip-line. If avoidance is infeasible, a lesser resource protection buffer or encroachment into the sensitive natural community may be allowed if approved by the Conservancy and the wildlife agencies, based on the criteria listed in *AMM1*. Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.
- *Lacustrine and riverine:* Outside urban planning units, 100 feet from the top of banks.[6] Within urban planning units, 25 feet from the top of the banks.
- *Fresh emergent wetland:* Fifty feet from the edge of the natural community.

[5] *Alkali seasonal wetlands* are seasonal wetlands within the alkali prairie natural community.
[6] *Banks* are defined as the area within which water is contained in a channel.

AMM1 provides additional details for resource protection buffers around natural communities. Additional resource protection buffers may be necessary for covered species, as described in species-specific AMMs.

AMM10, Avoid and Minimize Effects on Wetlands and Waters. Project proponents will comply with stormwater management plans that regulate development as part of compliance with regulations under National Pollutant Discharge Elimination System (NPDES) permit requirements. Covered activities that result in any fill of waters or wetlands will also comply with requirements under Section 404 of the Clean Water Act, State Water Resources Control Board (State Board), Regional Board, and Fish and Game Code Section 1602 regulations. Other than requirements for resource protection buffers, minimizing project footprint, and species-specific measures for wetland-dependent covered species, the Yolo HCP/NCCP does not include specific best management practices for protecting wetlands and waters because they may conflict with measures required by the U.S. Army Corps of Engineers, State Board, Regional Board, and CDFW.

Covered Species

The AMMs described in this section pertain specifically to covered species. These AMMs may change over time, depending on the most current guidelines developed by CDFW and USFWS and based on the best available data.

AMM11, Minimize Take and Adverse Effects on Palmate-Bracted Bird's Beak. Palmate-bracted bird's-beak is covered by the Yolo HCP/NCCP only for the removal of suitable habitat and not for the removal of palmate-bracted bird's beak plants. This AMM ensures compliance with this provision. To determine if palmate-bracted bird's beak is present and could be affected, the project proponent will conduct a planning-level survey for this species for any covered activities to be conducted within 250 feet of alkali seasonal wetlands. The survey will be conducted during the period from May 31 to September 30 and will be consistent with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009).

The project proponent will avoid occupied habitat where palmate-bracted bird's beak has been located within any of the last 15 years (seed viability could be as little as 3 years and as much as 6 years, as described in Yolo HCP/NCCP Appendix A, Section A.1.2). The project proponent also will avoid any new occurrences of this species identified during planning-level surveys. Avoidance will require a 250-foot setback from the occupied alkali seasonal wetland feature, or greater distance depending on site-specific topography to avoid hydrologic effects. A shorter resource protection buffer distance may apply if is determined to avoid effects and is approved by the Conservancy, USFWS, and CDFW. Mortality of palmate-bracted bird's beak individuals will be avoided, except as needed through management activities that provide an overall benefit to the species.

AMM12, Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle. The project proponent will retain a qualified biologist who is familiar with valley elderberry longhorn beetle and evidence of its presence (i.e., exit holes in elderberry shrubs) to map all elderberry shrubs in and within 100 feet of the project footprint with stems that are greater than 1 inch in diameter at ground level. To avoid take of valley elderberry longhorn

beetle, the project proponent will maintain a resource protection buffer of at least 100 feet from any elderberry shrubs with stems greater than 1 inch in diameter at ground level. *AMM1* describes circumstances in which a lesser resource protection buffer may be applied. For elderberry shrubs that cannot be avoided with a designated resource protection buffer distance as described above, the qualified biologist will quantify the number of stems 1 inch or greater in diameter to be affected, and the presence or absence of exit holes. The Conservancy will use this information to determine the number of plants or cuttings to plant on a riparian restoration site to help offset the loss, consistent with Yolo HCP/NCCP Section 6.4.2.4.1. Additionally, prior to construction, the project proponent will transplant elderberry shrubs identified within the project footprint that cannot be avoided.

Transplantation will only occur if a shrub cannot be avoided and, if indirectly affected, the indirect effects would otherwise result in the death of stems or the entire shrub. If the project proponent chooses, in coordination with a qualified biologist, not to transplant the shrub because the activity would not likely result in death of stems of the shrub, then the qualified biologist will monitor the shrub annually for a 5-year monitoring period. The monitoring period may be reduced with concurrence from the wildlife agencies if the latest research and best available information at the time indicates that a shorter monitoring period is warranted. If death of stems at least 1 inch in diameter occurs within the monitoring period, and the qualified biologist determines that the shrub is sufficiently healthy to transplant, the project proponent will transplant the shrub as described in the following paragraph, in coordination with the qualified biologist. If the shrub dies during the monitoring period, or the qualified biologist determines that the shrub is no longer healthy enough to survive transplanting, then the Conservancy will offset the shrub loss consistent with the preceding paragraph.

The project proponent will transplant the shrubs into a location in the Yolo HCP/NCCP reserve system that has been approved by the Conservancy. Elderberry shrubs outside the project footprint but within the 100-foot resource protection buffer will not be transplanted.

Transplanting will follow the following measures.

1. Monitoring: A qualified biologist will be on site for the duration of the transplanting of the elderberry shrubs to ensure the effects on elderberry shrubs are minimized.
2. Timing: The project proponent will transplant elderberry plants when the plants are dormant, approximately November through the first 2 weeks of February, after they have lost their leaves. Transplanting during the non-growing season will reduce shock to the plant and increase transplantation success.
3. Transplantation procedure:
    a. Cut the plant back 3 to 6 feet from the ground or to 50 percent of its height (whichever is taller) by removing branches and stems above this height. Replant the trunk and stems measuring 1 inch or greater in diameter. Remove leaves that remain on the plants.
    b. Relocate plant to approved location in the reserve system, and replant as described in Yolo HCP/NCCP Section 6.4.2.4.1.

AMM13, Minimize Take and Adverse Effects on Habitat of California Tiger Salamander. The project proponent will retain a qualified biologist to identify any suitable aquatic and upland habitats for California salamander (as defined in Yolo HCP/NCCP Appendix A, *Covered Species Accounts*) present in and within 500 feet of the project footprint during planning-level surveys. The qualified biologist will also assess whether critical habitat could be affected by the covered activity.

Except for habitat management and enhancement, all covered activities will provide a 500-foot setback from aquatic California tiger salamander habitat. If a covered activity is outside the Dunnigan Creek Unit of California tiger salamander critical habitat and, as designed, will not avoid aquatic habitat by at least 500 feet, the project proponent will either conduct visual and dip-net surveys, consistent with CDFW protocol, during the period for November 1 to May 15 (California Department of Fish and Game 2003) or assume presence. If the species is present or assumed to be present, the covered activity will not remove aquatic habitat until at least four new occupied breeding pools are discovered or established in the Plan Area 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 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 could be necessary for maintaining the genetic diversity or regional distribution of the species. This AMM applies to California tiger salamander aquatic habitat and surrounding uplands, as defined by reference to the setbacks described above; it does not apply to cultivated agricultural lands (i.e., agricultural lands other than grazing lands) or other low-value upland habitat for California tiger salamander.

AMM14, Minimize Take and Adverse Effects on Habitat of Western Pond Turtle. There are no specific design requirements for western pond turtle habitat. Project proponents must follow design requirements for the valley foothill riparian and lacustrine and riverine natural communities (AMMs 9 and 10), however. These AMMs require a 100-foot (minimum) permanent resource protection buffer zone from the canopy drip-line (the farthest edge on the ground where water will drip from the tree canopy, based on the outer boundary of the tree canopy). If modeled upland habitat will be affected, 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.

AMM15, Minimize Take and Adverse Effects on Habitat of Giant Garter Snake. The project proponent will avoid effects on areas where planning-level surveys indicate the presence of suitable habitat for giant garter snake. To avoid effects on giant garter snake aquatic habitat, the project proponent will conduct no in-water/in-channel activity and maintain a permanent 200-foot resource protection buffer from the outer edge of potentially occupied aquatic habitat. If the project proponent cannot avoid effects of construction activities, the project proponent will implement the measures below to minimize effects of construction projects (measures for maintenance activities are described after the following bulleted list).

- Conduct preconstruction clearance surveys using USFWS-approved methods within 24 hours prior to construction activities within identified giant garter snake aquatic and adjacent upland habitat. If construction activities stop for a period of 2 weeks or more, conduct another preconstruction clearance survey within 24 hours prior to resuming construction activity.
- Restrict all construction activity involving disturbance of giant garter snake habitat to the snake's active season, May 1 through October 1. During this period, the potential for direct mortality is reduced because snakes are expected to move and avoid danger.
- In areas where construction is to take place, encourage giant garter snakes to leave the site on their own by dewatering all irrigation ditches, canals, or other aquatic habitat (i.e., removing giant garter snake aquatic habitat) between April 15 and September 30. Dewatered habitat must remain dry, with no water puddles remaining, for at least 15 consecutive days prior to excavating or filling of the habitat. If a site cannot be completely dewatered, netting and salvage of giant garter snake prey items may be necessary to discourage use by snakes.
- Provide environmental awareness training for construction personnel, as approved by the Conservancy. Training may consist of showing a video prepared by a qualified biologist, or an in-person presentation by a qualified biologist. In addition to the video or in-person presentation, training may be supplemented with the distribution of approved brochures and other materials that describe resources protected under the Yolo HCP/NCCP and methods for avoiding effects.
- A qualified biologist will prepare a giant garter snake relocation plan that must be approved by the Conservancy prior to work in giant garter snake habitat. The qualified biologist will base the relocation plan on criteria provided by CDFW or USFWS, through the Conservancy.
- If a live giant garter snake is encountered during construction activities, immediately notify the project's biological monitor, USFWS, and CDFW. The monitor will stop construction in the vicinity of the snake, monitor the snake, and allow the snake to leave on its own. The monitor will remain in the area for the remainder of the workday to ensure the snake is not harmed or, if it leaves the site, does not return. If the giant garter snake does not leave on its own, the qualified biologist will relocate the snake consistent with the relocation plan described above.
- Employ the following management practices to minimize disturbances to habitat.
    - Install temporary fencing to identify and protect adjacent marshes, wetlands, and ditches from encroachment from construction equipment and personnel.
    - Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted practices. No plastic, monofilament, jute, or similar erosion-control matting that could entangle snakes or other wildlife will be permitted.

Ongoing maintenance covered activities by local water and flood control agencies typically involve removal of vegetation, debris, and sediment from water conveyance canals as well as resloping, rocking, and stabilizing the canals that serve agricultural water users. Maintenance of

these conveyance facilities can typically occur only from mid-January through April when conveyance canals and ditches are not in service by the agency, although some drainages are used for storm conveyance during the winter and are wet all year. This timing is during the giant garter snake's inactive period. This is when snakes may be using underground burrows and are most vulnerable to take because they are unable to move out of harm's way. Maintenance activities, therefore, will be limited to the giant garter snake's active season (May 1 to October 1) when possible. All personnel involved in maintenance activities within giant garter snake habitat will first participate in environmental awareness training for giant garter snake, as described above for construction-related activities. To minimize the take of giant garter snake, the local water or flood control agency will limit maintenance of conveyance structures located within modeled giant garter snake habitat (Yolo HCP/NCCP Appendix A) to clearing one side along at least 80 percent of the linear distance of canals and ditches during each maintenance year (e.g., the left bank of a canal is maintained in the first year and the right bank in the second year). To avoid collapses when resloping canal and ditch banks composed of heavy clay soils, clearing will be limited to one side of the channel during each maintenance year.

For channel maintenance activities conducted within giant garter snake habitat, the project proponent will place removed material in existing dredged sites along channels where prior maintenance dredge disposal has occurred. For portions of channels that do not have previously used spoil disposal sites and where surveys have been conducted to confirm that giant garter snakes are not present, removed materials may be placed along channels in areas that are not occupied by giant garter snake and where materials will not re-enter the canal because of stormwater runoff.

Modifications to this AMM may be made with the approval of the Conservancy, USFWS, and CDFW.

AMM16, Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite. The project proponent will retain a qualified biologist to conduct planning-level surveys and identify any nesting habitat present within 1,320 feet of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

If a construction project cannot avoid potential nest trees (as determined by the qualified biologist) by 1,320 feet, the project proponent will retain a qualified biologist to conduct pre-construction surveys for active nests consistent, with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 15 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW. If active nests are found during pre-construction surveys, a 1,320-foot initial temporary nest resource protection buffer shall be established. If project related activities within the temporary nest resource protection buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest resource protection buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding

position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot resource protection buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. Up to 20 Swainson's hawk nest trees (documented nesting within the last 5 years) may be removed during the permit term, but they must be removed when not occupied by Swainson's hawks.

For covered activities that involve pruning or removal of a potential Swainson's hawk or white-tailed kite nest tree, the project proponent will conduct pre-construction surveys that are consistent with the guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000). If active nests are found during pre-construction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active.

AMM17, Minimize Take and Adverse Effects on Habitat of Western Yellow-Billed Cuckoo. The project proponent will retain a qualified biologist to conduct planning-level surveys and assess whether habitat for western yellow-billed cuckoo (as defined in Appendix A) is present within 500 feet of covered activities. If habitat is present, the project proponent will redesign the project to avoid or minimize activities within 500 feet of western yellow-billed cuckoo habitat. If the activity will encroach within 500 feet of habitat and there are no breeding (or nesting) season records for the species within one-quarter mile of the covered activity within the previous three years, a qualified biologist will conduct planning-level surveys for active nests, consistent with USFWS protocol, during the period from June 1 to August 30. Operations and maintenance activities that do not occur during the breeding season (June 1 to August 30) and do not remove western yellow-billed cuckoo habitat are not required to conduct surveys or record searches; no further avoidance or minimization is necessary for such activities.

If an occupied territory is discovered during planning-level surveys, or there is a record of the species occurring within .25 mile of the covered activity within the previous 3 years, the project proponent will design the project to avoid activities within 500 feet of suitable habitat, unless the Conservancy, USFWS, and CDFW approve a shorter distance.

If an activity occurs within 500 feet of suitable habitat during the breeding season, regardless of whether or not a qualified biologist detected the species during planning-level surveys or there are records for the species in the area, a qualified biologist will conduct Pre-Construction Surveys that are consistent with USFWS protocol during the same season when the activity will occur. If the biologist finds active territories (i.e., presence of a singing male), the project proponent will avoid activity within 500 feet of suitable habitat that is contiguous with the territory from June 1 to August 30. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

AMM18, Minimize Take and Adverse Effects on Western Burrowing Owl. The project proponent will retain a qualified biologist to conduct planning-level surveys and identify western burrowing owl habitat (as defined in Appendix A) within or adjacent to (i.e., within 500 feet of) a covered activity. If habitat for this species is present, additional surveys for the species by a qualified biologist are required, consistent with CDFW guidelines (2012).

If burrowing owls are identified during the planning-level survey, the project proponent will minimize activities that will affect occupied habitat as follows, by implementing pre-construction surveys and other AMMs. If burrowing owls are not found during the planning-level survey, then pre-construction surveys are not needed.

Occupied habitat is considered fully avoided if the project footprint does not impinge on a resource protection buffer around the suitable burrow. For occupied burrowing owl nest burrows, this resource protection buffer could range from 150 to 1,500 feet (Yolo HCP/NCCP Table 7-1), depending on the time of year and the level of disturbance, based on current guidelines (California Department of Fish and Game 2012). The Yolo HCP/NCCP generally defines low, medium, and high levels of disturbances of burrowing owls as follows.

- Low: Typically 71–80 dB, generally characterized by the presence of passenger vehicles, small gas-powered engines (e.g., lawn mowers, small chain saws, portable generators), and high-tension power lines. Includes electric hand tools (except circular saws, impact wrenches and similar). Management and enhancement activities would typically fall under this category. Human activity in the immediate vicinity of burrowing owls would also constitute a low level of disturbance, regardless of the noise levels.
- Moderate: Typically 81–90 dB, and would include medium- and large-sized construction equipment, such as backhoes, front end loaders, large pumps and generators, road graders, dozers, dump trucks, drill rigs, and other moderate to large diesel engines. Also includes power saws, large chainsaws, pneumatic drills and impact wrenches, and large gasoline-powered tools. Construction activities would normally fall under this category.
- High: Typically 91–100 dB, and is generally characterized by impacting devices, jackhammers, compression ("jake") brakes on large trucks, and trains. This category includes both vibratory and impact pile drivers (smaller steel or wood piles) such as used to install piles and guard rails, and large pneumatic tools such as chipping machines. It may also include large diesel and gasoline engines, especially if in concert with other impacting devices. Felling of large trees (defined as dominant or subdominant trees in mature forests), truck horns, yarding tower whistles, and muffled or underground explosives are also included. Very few covered activities are expected to fall under this category, but some construction activities may result in this level of disturbance.

The project proponent may qualify for a reduced resource protection buffer size, based on existing vegetation, human development, and land use, if agreed upon by CDFW and USFWS (California Department of Fish and Game 2012).

Yolo HCP/NCCP Table 5-1. Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls

Time of Year	Level of Disturbance (feet) from Occupied Burrows		
	Low	Medium	High
April 1–August 15	600	1,500	1,500
August 16–October 15	600	600	1,500
October 16–March 31	150	300	1,500

If the project does not fully avoid direct and indirect effects on nesting sites (i.e., if the project cannot adhere to the resource protection buffers described above), the project proponent will retain a qualified biologist to conduct pre-construction surveys and document the presence or absence of western burrowing owls that could be affected by the covered activity. Prior to any ground disturbance related to covered activities, the qualified biologist will conduct the pre-construction surveys within 3 days prior to ground disturbance in areas identified in the planning-level surveys as having suitable burrowing owl burrows, consistent with CDFW pre-construction survey guidelines. The qualified biologist will conduct the pre-construction surveys 3 days prior to ground disturbance. Time lapses between ground disturbing activities will trigger subsequent surveys prior to ground disturbance.

If the biologist finds the site to be occupied[7] by western burrowing owls during the breeding season (February 1 to August 31), the project proponent will avoid all nest sites during the remainder of the breeding season or while the nest is occupied by adults or young. Occupation includes individuals or family groups that forage on or near the site following fledging. Avoidance will be based on the resource protection buffer distances described above, Construction may occur inside of the resource protection buffer during the breeding season if the nest is not disturbed and the project proponent develops an AMM plan that is approved by the Conservancy, CDFW, and USFWS prior to project construction, based on the following criteria.

- The Conservancy, CDFW, and USFWS approves the AMM plan provided by the project proponent.
- A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.
- If the qualified biologist identifies a change in owl nesting and foraging behavior as a result of construction activities, the qualified biologist will have the authority to stop all construction related activities within the resource protection buffers described above. The qualified biologist will report this information to the Conservancy, CDFW, and USFWS within 24 hours, and the Conservancy will require that these activities immediately cease within the resource protection buffer. Construction cannot resume within the resource protection buffer until the adults and juveniles from the occupied burrows have moved out of the project site, and the Conservancy, CDFW, and USFWS agree.
- If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, the project proponent may remove the resource protection buffer, only with concurrence from CDFW and USFWS. If the burrow cannot be avoided by construction activity, the biologist will excavate and collapse the burrow in accordance with CDFW's 2012 guidelines to prevent reoccupation after receiving approval from the wildlife agencies.

[7] Occupancy of burrowing owl habitat during preconstruction surveys is confirmed at a site when at least one burrowing owl or sign (fresh whitewash, fresh pellets, feathers, or nest ornamentation) is observed at or near a burrow entrance.

If evidence of western burrowing owl is detected outside the breeding season (December 1 to January 31), the project proponent will establish a resource protection buffer around occupied burrows, consistent with Yolo HCP/NCCP Table 7-1, as determined by a qualified biologist. Construction activities within the resource protection buffer are allowed if the following criteria are met to prevent owls from abandoning important overwintering sites.

- A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl roosting and foraging behavior as a result of construction activities, these activities will cease within the resource protection buffer.
- If the owls are gone for at least 1 week, the project proponent may request approval from the Conservancy, CDFW, and USFWS for a qualified biologist to excavate and collapse usable burrows to prevent owls from reoccupying the site if the burrow cannot be avoided by construction activities. The qualified biologist will install one-way doors for a 48-hour period prior to collapsing any potentially occupied burrows. After all usable burrows are excavated, the resource protection buffer will be removed and construction may continue.

Monitoring must continue as described above for the nonbreeding season as long as the burrow remains active.

A qualified biologist will monitor the site, consistent with the requirements described above, to ensure that resource protection buffers are enforced and owls are not disturbed. Passive relocation (i.e., exclusion) of owls has been used in the past in the Plan Area to remove and exclude owls from active burrows during the nonbreeding season. Exclusion and burrow closure will not be conducted during the breeding season for any occupied burrow. If the Conservancy determines that passive relocation is necessary, the project proponent will develop a burrowing owl exclusion plan in consultation with CDFW biologists. The methods will be designed as described in the species monitoring guidelines (California Department of Fish and Game 2012) and consistent with the most up-to-date checklist of passive relocation techniques.[8] This may include the installation of one-way doors in burrow entrances by a qualified biologist during the nonbreeding season. These doors will be in place for 48 hours and monitored twice daily to ensure that the owls have left the burrow, after which time the biologist will collapse the burrow to prevent reoccupation. Burrows will be excavated using hand tools. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure, such as piping, into the burrow to prevent collapsing until the entire burrow can be excavated and it can be determined that no owls are trapped inside the burrow. The Conservancy may allow other methods of passive or active relocation, based on best available science, if approved by the wildlife agencies. Artificial burrows will be constructed prior to exclusion and will be created less than 300 feet from the existing burrows on lands that are protected as part of the reserve system.

[8] The Conservancy will maintain a checklist of passive relocation techniques. The wildlife agencies will approve the initial list prepared by the Conservancy, and the Conservancy will update as needed in coordination with the wildlife agencies.

AMM19, Minimize Take and Adverse Effects on Least Bell's Vireo. The project proponent will retain a qualified biologist to conduct planning-level surveys and determine if habitat for least Bell's vireo (as defined in Yolo HCP/NCCP Appendix A) is present within 500 feet of covered activities. If habitat is present, the project proponent will redesign the project to avoid or minimize activities within 500 feet of least Bell's vireo habitat. If the activity will encroach within 500 feet of habitat and there are no breeding season records for the species within .25 mile of the covered activity within the previous 3 years, the qualified biologist will conduct planning-level surveys for active territories, consistent with USFWS (2001) guidelines, during the breeding season (April 1 to July 15). Operations and maintenance activities that do not occur during the breeding season and do not affect least Bell's vireo habitat are not required to conduct surveys or record searches, and no further avoidance or minimization is necessary for such activities.

- If an occupied territory is discovered during planning-level surveys, or there is a record of the species occurring within .25 mile of the covered activity within the previous 3 years, the project proponent will design the project to avoid activities within 500 feet of suitable habitat, unless the Conservancy, USFWS, and CDFW approve a shorter distance.
- If an activity occurs within 500 feet of suitable habitat during the breeding season, regardless of whether or not the species was detected during planning-level surveys or there are records for the species in the area, a qualified biologist will conduct pre-construction surveys, consistent with USFWS (2001) guidelines, during the same season when the activity will occur. If active territories are found, the project proponent will avoid activity within 500 feet of the habitat from April 1 to July 15. This resource protection buffer may be reduced with approval from the Conservancy, USFWS, and CDFW.
- The project proponent will avoid disturbance of previous least Bell's vireo territories (up to 3 years since known nest activity) during the breeding season, unless the disturbance is to maintain public safety. Least Bell's vireo uses previous territories; disturbance during the breeding season may preclude birds from using existing unoccupied territories.
- The required resource protection buffer may be reduced in areas where barriers or topographic relief features are adequate for protecting the nest from excessive noise or other disturbance. Conservancy staff members will coordinate with the wildlife agencies and evaluate exceptions to the minimum resource protection buffer distance on a case-by-case basis. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.
- If occupied territories are identified, a qualified biologist will monitor construction activities in the vicinity of all active territories to ensure that covered activities do not affect nest success.

AMM20, Minimize Take and Adverse Effects on Habitat of Bank Swallow. The project proponent will retain a qualified biologist to identify and quantify (in acres) bank swallow nesting habitat (as defined in Yolo HCP/NCCP Appendix A) within 500 feet of the project footprint. If a 500-foot resource protection buffer from nesting habitat cannot be maintained, the qualified biologist will check records maintained by the Conservancy and CDFW to determine if bank swallow nesting colonies have been active on the site within the previous 5 years. If there are no records of nesting bank swallows on the site, the qualified biologist will conduct visual surveys during the period from March 1 to August 31 to determine if a nesting colony is present.

For operations and maintenance activities or other temporary activities that do not remove nesting habitat and occur outside the nesting season (September 1 to February 28), it is not necessary to conduct a record search, planning and pre-construction surveys, or any additional avoidance measures. If activities will occur during the nesting season, surveys will be necessary as for other covered activities, but the 500-foot survey distance and resource protection buffer distance may be reduced upon Conservancy and wildlife agency approval based on site-specific conditions. Such conditions may include the level of noise and disturbance generated by the activity, the duration of the activity, and the presence of visual and noise buffers (e.g., vegetation, structures) between the activity and the nesting colony.

If an active bank swallow colony is present or has been present within the last 5 years within the planning-level survey area, the Conservancy, USFWS and CDFW will be notified in writing within 15 working days. The project proponent will design the project to avoid adverse effects within 500 feet of the colony site(s), unless a shorter distance is approved by the Conservancy, USFWS, and CDFW, based on site-specific conditions such as visual barriers (trees or structures) between the activity and the colony. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

The reserve system management plan including bank swallow habitat will provide examples of additional measures that may apply to activities on reserve system lands to avoid and minimize effects on bank swallow.

AMM21, Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird. The project proponent will retain a qualified biologist to identify and quantify (in acres) tricolored blackbird nesting and foraging habitat (as defined in Yolo HCP/NCCP Appendix A) within 1,300 feet of the project footprint. If a 1,300-foot resource protection buffer from nesting habitat cannot be maintained, the qualified biologist will check records maintained by the Conservancy (which will include California Natural Diversity Database data, and data from the tricolored blackbird portal) to determine if tricolored blackbird nesting colonies have been active in or within 1,300 feet of the project footprint during the previous 5 years. If there are no records of nesting tricolored blackbirds on the site, the qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).

Operations and maintenance activities or other temporary activities that do not remove nesting habitat and occur outside the nesting season (March 1 to July 30) do not need to conduct planning or construction surveys or implement any additional avoidance measures.

If an active tricolored blackbird colony is present or has been present within the last 5 years within the planning-level survey area, the project proponent will design the 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. If a shorter distance is approved, the project proponent will still maintain a 1,300-foot resource protection buffer around active nesting colonies during the nesting season but may apply the approved lesser distance outside the nesting season. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

Chapter 6
Summary of Biological Evaluations

The purpose of this chapter is to provide an easy-to-use guide that clarifies the various types of ***biological evaluations*** needed to complete the Yolo HCP/NCCP Screening and Application Forms, as described in greater detail in Chapters 5, 6, and 7. There are three types of biological evaluations associated with the Yolo HCP/NCCP permitting process: (1) Initial land cover and covered species habitat assessment; (2) planning level surveys; and (3) pre-construction surveys.

6.1 Initial Assessment

The initial assessment will provide the applicant, the member agency, and the Conservancy with information necessary to assess land cover and covered species habitat, and determine if a project is covered under the Yolo HCP/NCCP.

The applicant completes an initial assessment based on information from the Conservancy's most current database (available through Conservancy staff or using GeoMapper on the Conservancy's website) and current aerial photos to complete the Screening Form (See Chapter 5 for details on the Screening Form process). The land cover and covered species habitat assessment can be completed at any time of year, but results expire if the Conservancy database is updated. The assessment must be based on the most current available data at the time it is submitted. If the land cover type is urban or built up, a member agency staff member with the appropriate expertise may determine the land cover. The Conservancy will also independently verify land cover as urban or built up. For all other land cover types, however, a qualified biologist must verify the land cover and covered species habitat through a planning level survey.

Minimum size of land cover patches for covered species habitat mapping are .01 acre for riparian forest and scrub and fresh emergent wetland and lacustrine land cover types, and .1 acre for all other land cover types.

If the project is determined not to be a covered activity based on the initial assessment, then a planning level survey will be unnecessary. If, however, the project is determined to be a covered activity based on the initial assessment, the Conservancy recommends conducting a planning level survey as early in the planning process as possible.

6.2 Planning Level Surveys

There are two type of planning level surveys: 1) surveys conducted to assess land cover types and covered species habitat, and 2) surveys to determine the presence/absence of covered species through species-specific protocol surveys.

Planning Level Survey for Land Cover Types and Covered Species Habitat

This section is based on Yolo HCP/NCCP Sections 4.2.2.3 and 4.2.2.4.

For projects determined to require permit coverage under the Yolo HCP/NCCP, a qualified biologist must prepare a planning level survey report to provide the applicant, the member agency, and the Conservancy with information about land cover types and covered species habitat on site in order to determine fees, identify the need for species surveys, develop appropriate AMMs, and track loss of natural communities and covered species habitat.

The following are important features of this survey.

- Based on site conditions and definitions in Tables 2-1.
- Can be completed any time of year.
- Prepared by a qualified biologist.
- Valid for 3 years.
- Submitted with Screening Form if completed at that time, required with Application Form.
- If prepared early in applicant planning process, can be used to influence project design.
- Identifies actual acreage of all land cover types based on actual on-the-ground conditions.
- Documents acres of land cover impacts (permanent and temporary) by land cover type necessary to complete the Application Form. Minimum size of land cover patches for mapping are .01 acre for riparian forest and scrub and fresh emergent wetland and open water (lacustrine) land cover types, and .1 acre for all other land cover types.
- Used to assess whether the project should incorporate AMMs for sensitive natural communities or covered species habitat (Table 2-2).
- Used to assess need for species-specific planning level surveys.

Survey Protocols

Make sure the qualified biologist conducting planning level surveys uses the Yolo HCP/NCCP land cover classifications and covered species habitat definitions (Table 2-1 and Table 2-2) and follows the protocols outlined in Appendix A.

The Conservancy recommends that qualified biologists combine their planning level survey report for the Yolo HCP/NCCP with the biological report completed for CEQA or other environmental documents (e.g., biological assessment for ESA Section 7 consultation, preliminary evaluation study for California Department of Transportation projects). This will avoid duplication of effort by allowing one technical report to be used for multiple needs. If the biological resources assessment completed for CEQA or other environmental review process does not include all the necessary elements of a Yolo HCP/NCCP planning level survey report, the applicant must either revise the report to include these elements or attach the required elements to the Application Form separately. The Application Form must clearly reference and attach the documents and page numbers where the relevant information is located.

Table 6-1 lists the elements of the planning level survey that must be attached to the Application Form.

Table 6-1. Required Elements of Planning Level Survey Reports

Element Needed	Description	Preliminary Application	Final Application
Project description	Or provide as Attachment 1 to Application Form. See also Permitting Guide Chapter 6 instructions for Application Form, Box D, Item 5.	Recommended	Required
Vicinity map pdf	Or provide as Attachment 2 to Application Form. See also Permitting Guide Chapter 6 instructions for Application Form, Box D, Item 6.	Recommended	Required
Site plan with verified land cover types	Or provide as Attachment 3 to Application Form. The land cover types must be consistent with the land cover definitions in Table 2-1 of this Permitting Guide. See also Permitting Guide Chapter 6 instructions for Application Form, Box D, Item 6.	Required (if filling out Preliminary Application)	Required
Land cover table	Table with acres of each land cover type affected. For riparian forest and scrub and fresh emergent wetland and open water (lacustrine) land cover types, provide calculations to the nearest hundredth (0.01) of an acre. For all other land cover types, provide calculations to nearest tenth (0.1) of an acre. For streams, also provide calculations in linear feet. See also Permitting Guide Chapter 6 instructions for Application Form.	Required (if filling out Preliminary Application)	Required
Temporary impact photos	Or provide as Attachment 4 to Application Form. Photographs will be used to compare pre-project site conditions with conditions after the temporarily disturbed area has been restored to pre-project conditions. Provide photos that are adequate for this comparison. Document the date and the location from which the photos were taken.	Optional	Required
Covered species habitat present	Identification of presence of habitat for each covered species by habitat type (e.g., foraging or nesting) as determined by a qualified biologist.	Required (if filling out Preliminary Application)	Required

Element Needed	Description	Preliminary Application	Final Application
Covered species habitat map	Mapping of habitat for each covered species by habitat type (e.g., foraging or nesting) as determined by a qualified biologist.	Optional	Required
Covered species habitat table	Table with acres of habitat affected for each covered species. Amount of each habitat type for each covered species within the area of effect, as mapped to the nearest 0.1 acre.	Optional	Required
Proximity to resources	Identify proximity to sensitive natural communities or covered species habitats that may trigger avoidance and minimization measures (or additional surveys), as defined in Table 2-2 of the Permitting Guide.	Recommended if available	Required
Identify planning surveys needed	Identify additional surveys needed during the planning process (e.g., species surveys).	Recommended (if available)	N/A (planning level survey will be complete)
Planning surveys completed	Or provide as Attachment 6 to Application Form. Provide methods and results for species surveys.	Optional	Required
Design-level avoidance	Identify any and all design level avoidance to be applied to the project (i.e., modification to area of effect to avoid or minimize effects on sensitive resources).	Recommended (if available)	Required (if any)
Preconstruction surveys and construction related measures	Identify all applicable avoidance and minimization measures to be implemented immediate prior to or during construction.	Optional	Required

The qualified biologist will be required to evaluate conditions surrounding the site and determine whether the project could potentially, indirectly affect covered species or sensitive natural communities off site. If a surrounding area subject to evaluation is not accessible (e.g., private property), the qualified biologist will evaluate the area with binoculars from accessible locations such as the project site or public roadsides, and utilize aerial imagery to supplement the assessment.

Species-Specific Planning Level Surveys

This section is based on Yolo HCP/NCCP Section 4.3 and Yolo HCP/NCCP Table 4-1.

Depending on site conditions as determined by the qualified biologist during the planning level surveys for covered species habitat, surveys for presence or absence of covered species may be necessary. The following are important elements of these surveys.

- Based on conditions on and around the project site.

- For most species, must be completed at specified times of year based on protocols identified in the Yolo HCP/NCCP (Yolo HCP/NCCP Table 4-1 Column 2; see summary in Table 4-1 in this guide).
- Prepared by a qualified biologist (see list of common terms at beginning of document)
- Valid for 3 years (or as defined in the Yolo HCP/NCCP or wildlife agency protocols).
- Need for surveys identified on Application Form.
- Survey results submitted with land development application; required prior to project approval.
- If prepared early in applicant planning process, can be used to influence project design.
- Provides additional species/habitat information for purpose of identifying AMMs and determining extent of permit coverage.

An applicant may choose to forego species surveys during the planning process and simply assume the species is present in the identified habitat. Under this option, the applicant must apply all the applicable AMMs for occupied habitat. In some cases (e.g., for western burrowing owl), this could put the applicant at risk of project delays or last minute project redesign if the species is unexpectedly discovered during pre-construction surveys or during project construction. These delays would be the result of the unexpected need to wait for burrowing owls to finish nesting and to relocate the owls. To avoid this risk, a qualified biologist may conduct species surveys that are less than protocol level to inform the planning process (e.g., fewer than the specified number of site visits), although the applicant will still be required to conduct pre-construction surveys regardless of the planning level survey results if the surveys are not conducted consistent with protocol.

The qualified biologist may be required to survey areas surrounding the site for covered species. If a surrounding area subject to species surveys is not accessible (e.g., private property), the qualified biologist must make their best effort to evaluate the area with binoculars (or when applicable for birds, listening for the species' song or call) from accessible locations such as the project site or public roadsides.

6.3 Pre-Construction Surveys and Construction-Related Avoidance and Minimization Measures

This section is based on Yolo HCP/NCCP Section 4.3 and Yolo HCP/NCCP Table 4-1.

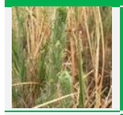
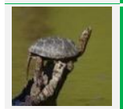
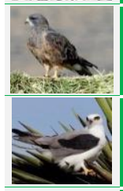
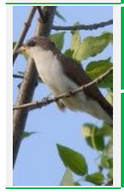
Depending on site conditions determined by the planning level surveys, the applicant may need to conduct pre-construction surveys and apply construction-related AMMs. The purpose of pre-construction surveys is to locate mobile species immediately prior to construction so that construction-related measures can be implemented in order to avoid injuring or killing individuals (e.g., ***resource protection buffers*** around active nest trees or relocating California

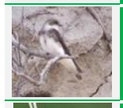
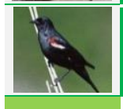
tiger salamanders). The following are important elements of pre-construction surveys and construction-related AMMs.

- Based on conditions on and near the project site.
- Must be completed within window specified in approval based on specified requirements identified in the AMMs (Yolo HCP/NCCP Table 4-1, Column 4; see summary in permitting guide Table 6-2).
- Prepared by qualified biologist. (see list of comment terms at beginning of document)
- Valid for period of time identified in approval (e.g., X days prior to any site disturbance); may need to be repeated if site activity is suspended for specified periods of time (Yolo HCP/NCCP Table 6-1, Columns 4 and 5).
- Completed after project approval, but before (and sometimes during) site disturbance.
- Used to assess whether some species (particularly highly mobile ones) are present on the property and require construction-related AMMs, such as creating temporary resource protection buffers or moving individuals out of harm's way as determined by the qualified biologist.
- Typical CEQA mitigation measure requirement.
- Results of pre-construction surveys and construction-related AMMs are reported after their completion.

Table 6-2 provides a summary of planning and pre-construction survey requirements for covered species.

Table 6-2. Planning and Pre-Construction Survey Requirements for Covered Species

What is being surveyed		Conditions triggering survey	Action if present	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	**Palmate-bracted bird's beak habitat**	Suitable habitat present within 250 feet of project footprint	AMM11						*Survey period: May 31–Sept. 30*						
	**Suitable VELB habitat**	Presence of elderberry shrubs within 100 feet of project footprint with stems greater than 1 inch in diameter at ground level	AMM12	*Survey period: year-round*											
	**Western pond turtle nest probability**	If modeled habitat will be impacted	AMMs 9, 10, and 14	*Qualified biologist assesses likelihood of occurrence within project area of impact (no required survey period)*											
	**California tiger salamander aquatic habitat**	Planning surveys required if presence of aquatic habitat within 500 feet of project footprint	AMM13	*Survey period: Nov 1–May 15 (after rainfall)*											
	**Giant garter snake**	Preconstruction surveys required if project involves in-water/in-channel activity or will occur within 200 feet of aquatic habitat	AMM14	*Pre-construction surveys to be conducted within 24 hours prior to construction activities*											
	**Swainson's hawk nests**	Preconstruction surveys required if potential nest trees present within 1,320 feet of project footprint	AMM16				*Survey period: Mar. 15–Aug. 30, within 15 days of construction*								
	White-tailed kite nests	Preconstruction surveys required if potential nest trees present within 1,320 feet of project footprint	AMM16				*Survey period: Mar. 15–Aug. 30, within 15 days of construction*								
	**Western burrowing owl habitat**	Planning survey is required if project footprint is within 500 feet western burrowing owl habitat	AMM18, Pre-construction surveys		*Survey period (during the breeding season): Feb. 1–Aug. 31*										*Survey period (non-breeding season): Dec. 1 - Jan. 31*
	Western burrowing owl nests	Preconstruction survey is required if presence of potential nest burrows identified during planning level survey	AMM18	*Pre-construction surveys to be conducted within 3 days prior to ground disturbance*											
	**Western yellow-billed cuckoo nests**	Planning survey required if project footprint is within 500 feet of habitat and no breeding records within 1/4 mile of the site within past 3 years	AMM17						*Survey period (breeding season): Jun. 1–Aug. 30*						
	Western yellow-billed cuckoo active territories	Preconstruction survey required if activity will occur within 500 feet of habitat during breeding season (June 1 to August 30)	AMM17						*Pre-construction surveys to be conducted within the same season in which the activity will occur*						

What is being surveyed		Conditions triggering survey	Action if present	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	**Least Bell's vireo habitat or nests**	Planning survey required if project footprint is within 500 feet of habitat and no breeding records within 1/4 mile of the site within past 3 years	AMM19				*Survey period (breeding season): Apr. 1–Jul. 15*								
		Preconstruction survey required if activity will occur within 500 feet of habitat during breeding season	AMM19				*Pre-construction survey to be conducted within the same season in which the activity will occur*								
	**Bank swallow nests**	Planning survey required if presence of nesting habitat within 500 feet of project footprint	AMM20			*Survey period: Mar. 1–Aug. 15*									
	**Tricolored blackbird nests**	Planning survey required if presence of nesting habitat within 1,300 feet of project footprint	AMM21			*Survey period: Mar. 1–Jul. 30*									

Planning level surveys
Pre-construction surveys

Appendix A
Survey Protocols

Appendix A-1. Palmate-Bracted Bird's Beak (CDFG 2009)

Appendix A-2. California Tiger Salamander (USFWS and CDFG 2003)

Appendix A-3. Swainson's Hawk Nests (Swainson's Hawk Technical Advisory Committee 2000)

Appendix A-4. Western Burrowing Owl Habitat (CDFG 2012)

Appendix A-5. Least Bell's Vireo (USFWS 2001)

Appendix A-6. Tricolored Blackbird Nests (Kelsey 2008)

Appendix A-1
Palmate-Bracted Bird's Beak

California Department of Fish and Game, November 24, 2009

Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities

STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE

DATE: March 20, 2018

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1. INTRODUCTION AND PURPOSE

The conservation of special status native plants and their habitats, as well as sensitive natural communities, is integral to maintaining biological diversity. The purpose of these protocols is to facilitate a consistent and systematic approach to botanical field surveys and assessments of special status plants and sensitive natural communities so that reliable information is produced and the potential for locating special status plants and sensitive natural communities is maximized. These protocols may also help those who prepare and review environmental documents determine when botanical field surveys are needed, how botanical field surveys may be conducted, what information to include in a botanical survey report, and what qualifications to consider for botanical field surveyors. These protocols are meant to help people meet California Environmental Quality Act (CEQA)[1] requirements for adequate disclosure of potential impacts to plants and sensitive natural communities. These protocols may be used in conjunction with protocols formulated by other agencies, for example, those developed by the U.S. Army Corps of Engineers to delineate jurisdictional wetlands[2] or by the U.S. Fish and Wildlife Service to survey for the presence of special status plants[3].

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1 Available at: http://resources.ca.gov/ceqa
2 Available at: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/techbio.aspx
3 U.S. Fish and Wildlife Service Survey Guidelines: https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/

Department of Fish and Wildlife Trustee and Responsible Agency Mission

The mission of the California Department of Fish and Wildlife (CDFW) is to manage California's diverse wildlife and native plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFW has jurisdiction over the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations (Fish & G. Code, § 1802). CDFW, as trustee agency under CEQA Guidelines section 15386, provides expertise in reviewing and commenting on environmental documents and provides protocols regarding potential negative impacts to those resources held in trust for the people of California.

Certain species are in danger of extinction because their habitats have been severely reduced in acreage, are threatened with destruction or adverse modification, or because of a combination of these and other factors. The California Endangered Species Act (CESA) and Native Plant Protection Act (NPPA) provide additional protections for such species, including take prohibitions (Fish & G. Code, § 2050 *et seq.*; Fish & G. Code, § 1908). As a responsible agency, CDFW has the authority to issue permits for the take of species listed under CESA and NPPA if the take is incidental to an otherwise lawful activity; CDFW has determined that the impacts of the take have been minimized and fully mitigated; and the take would not jeopardize the continued existence of the species (Fish & G. Code, § 2081, subd. (b); Cal. Code Regs., tit. 14 § 786.9, subd. (b)). Botanical field surveys are one of the preliminary steps to detect special status plant species and sensitive natural communities that may be impacted by a project.

Definitions

Botanical field surveys provide information used to determine the potential environmental effects of proposed projects on special status plants and sensitive natural communities as required by law (e.g., CEQA, CESA, and federal Endangered Species Act (ESA)).

Special status plants, for the purposes of this document, include all plants that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the ESA or candidates for possible future listing as threatened or endangered under the ESA (50 C.F.R., § 17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish & G. Code, § 2050 et seq.)[4]. In CESA, “endangered species” means a native species or subspecies of plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish & G. Code, § 2062). “Threatened species” means a native species or subspecies of plant that,

[4] Refer to current online published lists available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline

although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by CESA (Fish & G. Code, § 2067). "Candidate species" means a native species or subspecies of plant that the California Fish and Game Commission has formally noticed as being under review by CDFW for addition to either the list of endangered species or the list of threatened species, or a species for which the California Fish and Game Commission has published a notice of proposed regulation to add the species to either list (Fish & G. Code, § 2068).

- Listed as rare under the California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish & G. Code, § 1901).
- Meet the definition of rare or endangered under CEQA Guidelines section 15380, subdivisions (b) and (d), including:
    - Plants considered by CDFW to be "rare, threatened or endangered in California." This includes plants tracked by the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1 or 2[5];
    - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This may include plants tracked by the CNDDB and CNPS as CRPR 3 or 4[6].
- Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include plants that are at the outer limits of their known geographic range or plants occurring on an atypical soil type.

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special status plants or their

[5] See CNDDB's Special Vascular Plants, Bryophytes, and Lichens List for plant taxa with a CRPR of 1 or 2: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline

[6] CRPR 3 plants (plants about which more information is needed) and CRPR 4 plants (plants of limited distribution) may warrant consideration under CEQA Guidelines section 15380. Impacts to CRPR 3 plants may warrant consideration under CEQA if sufficient information is available to assess potential impacts to such plants. Impacts to CRPR 4 plants may warrant consideration under CEQA if cumulative impacts to such plants are significant enough to affect their overall rarity. Data on CRPR 3 and 4 plants should be submitted to CNDDB. Such data aids in determining and revising the CRPR of plants. See CNDDB's Special Vascular Plants, Bryophytes, and Lichens List for plant taxa with a CRPR of 3 or 4: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline

habitat. CDFW's *List of California Terrestrial Natural Communities*[7] is based on the best available information, and indicates which natural communities are considered sensitive at the current stage of the California vegetation classification effort. See the Vegetation Classification and Mapping Program (VegCAMP) website for additional information on natural communities and vegetation classification[8].

2. BOTANICAL FIELD SURVEYS

Evaluate the need for botanical field surveys prior to the commencement of any activities that may modify vegetation, such as clearing, mowing, or ground-breaking activities. It is appropriate to conduct a botanical field survey when:

- Natural (or naturalized) vegetation occurs in an area that may be directly or indirectly affected by a project (project area), and it is unknown whether or not special status plants or sensitive natural communities occur in the project area;
- Special status plants or sensitive natural communities have historically been identified in a project area; or
- Special status plants or sensitive natural communities occur in areas with similar physical and biological properties as a project area.

Survey Objectives

Conduct botanical field surveys in a manner which maximizes the likelihood of locating special status plants and sensitive natural communities that may be present. Botanical field surveys should be floristic in nature, meaning that every plant taxon that occurs in the project area is identified to the taxonomic level necessary to determine rarity and listing status. "Focused surveys" that are limited to habitats known to support special status plants or that are restricted to lists of likely potential special status plants are not considered floristic in nature and are not adequate to identify all plants in a project area to the level necessary to determine if they are special status plants.

For each botanical field survey conducted, include a list of all plants and natural communities detected in the project area. More than one field visit is usually necessary to adequately capture the floristic diversity of a project area. An indication of the prevalence (estimated total numbers, percent cover, density, etc.) of the special status plants and sensitive natural communities in the project area is also useful to assess the significance of a particular plant population or natural community.

Survey Preparation

Before botanical field surveys are conducted, the botanical field surveyors should compile relevant botanical information in the general project area to provide a regional

[7] Available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#natural%20communities%20lists

[8] Available at: https://www.wildlife.ca.gov/Data/VegCAMP

context. Consult the CNDDB[9] and BIOS[10] for known occurrences of special status plants and sensitive natural communities in the project area prior to botanical field surveys. Generally, identify vegetation and habitat types potentially occurring in the project area based on biological and physical properties (e.g. soils) of the project area and surrounding ecoregion[11]. Then, develop a list of special status plants and sensitive natural communities with the potential to occur within the vegetation and habitat types identified. The list of special status plants with the potential to occur in the project area can be created with the help of the CNDDB QuickView Tool[12] which allows the user to generate lists of CNDDB-tracked elements that occur within a particular U.S. Geological Survey 7.5' topographic quad, surrounding quads, and counties within California. Resulting lists should only be used as a tool to facilitate the use of reference sites, with the understanding that special status plants and sensitive natural communities in a project area may not be limited to those on the list. Botanical field surveys and subsequent reporting should be comprehensive and floristic in nature and not restricted to or focused only on a list. Include in the botanical survey report the list of potential special status plants and sensitive natural communities that was created, and the list of references used to compile the background botanical information for the project area.

Survey Extent

Botanical field surveys should be comprehensive over the entire project area, including areas that will be directly or indirectly impacted by the project. Adjoining properties should also be surveyed where direct or indirect project effects could occur, such as those from fuel modification, herbicide application, invasive species, and altered hydrology. Surveys restricted to known locations of special status plants may not identify all special status plants and sensitive natural communities present, and therefore do not provide a sufficient level of information to determine potential impacts.

Field Survey Method

Conduct botanical field surveys using systematic field techniques in all habitats of the project area to ensure thorough coverage. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity, which determines the distance at which plants can be identified. Conduct botanical field surveys by traversing the entire project area to ensure thorough coverage, documenting all plant taxa observed. Parallel survey transects may be necessary to ensure thorough survey coverage in some habitats. The level of effort should be sufficient to provide comprehensive reporting. Additional time should be allocated for plant identification in the field.

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9 Available at: https://www.wildlife.ca.gov/Data/CNDDB

10 Available at: https://www.wildlife.ca.gov/Data/BIOS

11 Ecological Subregions of the United States, available at: http://www.fs.fed.us/land/pubs/ecoregions/toc.html

12 Available at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. When creating a list of special status plants with the potential to occur in a project area, special care should be taken to search all quads with similar geology, habitats, and vegetation to those found in the project area.

Timing and Number of Visits

Conduct botanical field surveys in the field at the times of year when plants will be both evident and identifiable. Usually this is during flowering or fruiting. Space botanical field survey visits throughout the growing season to accurately determine what plants exist in the project area. This usually involves multiple visits to the project area (e.g. in early, mid, and late-season) to capture the floristic diversity at a level necessary to determine if special status plants are present[13]. The timing and number of visits necessary to determine if special status plants are present is determined by geographic location, the natural communities present, and the weather patterns of the year(s) in which botanical field surveys are conducted.

Reference Sites

When special status plants are known to occur in the type(s) of habitat present in a project area, observe reference sites (nearby accessible occurrences of the plants) to determine whether those special status plants are identifiable at the times of year the botanical field surveys take place and to obtain a visual image of the special status plants, associated habitat, and associated natural communities.

Use of Existing Surveys

For some project areas, floristic inventories or botanical survey reports may already exist. Additional botanical field surveys may be necessary for one or more of the following reasons:

- Botanical field surveys are not current[14];
- Botanical field surveys were conducted in natural systems that commonly experience year to year fluctuations such as periods of drought or flooding (e.g. vernal pool habitats or riverine systems);
- Botanical field surveys did not cover the entire project area;
- Botanical field surveys did not occur at the appropriate times of year;
- Botanical field surveys were not conducted for a sufficient number of years to detect plants that are not evident and identifiable every year (e.g. geophytes, annuals and some short-lived plants);

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[13] U.S. Fish and Wildlife Service Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants available at: https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/

[14] Habitats, such as grasslands or desert plant communities that have annual and short-lived perennial plants as major floristic components may require yearly surveys to accurately document baseline conditions for purposes of impact assessment. In forested areas, however, surveys at intervals of five years may adequately represent current conditions. For forested areas, refer to “Guidelines for Conservation of Sensitive Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations”, available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=116396&inline

- Botanical field surveys did not identify all plants in the project area to the taxonomic level necessary to determine rarity and listing status;
- Fire history, land use, or the physical or climatic conditions of the project area have changed since the last botanical field survey was conducted;
- Changes in vegetation or plant distribution have occurred since the last botanical field surveys were conducted, such as those related to habitat alteration, fluctuations in abundance, invasive species, seed bank dynamics, or other factors; or
- Recent taxonomic studies, status reviews or other scientific information has resulted in a revised understanding of the special status plants with potential to occur in the project area.

Negative Surveys

Adverse conditions from yearly weather patterns may prevent botanical field surveyor from determining the presence of, or accurately identifying, some special status plants in the project area. Disease, drought, predation, fire, herbivory or other disturbance may also preclude the presence or identification of special status plants in any given year. Discuss all adverse conditions in the botanical survey report[15].

The failure to locate a known special status plant occurrence during one field season does not constitute evidence that the plant occurrence no longer exists at a location, particularly if adverse conditions are present. For example, botanical field surveys over a number of years may be necessary if the special status plant is an annual or short-lived plant having a persistent, long-lived seed bank and populations of the plant are known to not germinate every year. Visiting the project area in more than one year increases the likelihood of detecting special status plants, particularly if conditions change. To further substantiate negative findings for a known occurrence, a visit to a nearby reference site may help ensure that the timing of botanical field surveys was appropriate.

3. REPORTING AND DATA COLLECTION

Adequate information about special status plants and sensitive natural communities present in a project area will enable reviewing agencies and the public to effectively assess potential impacts to special status plants and sensitive natural communities and will guide the development of avoidance, minimization, and mitigation measures. The information necessary to assess impacts to special status plants and sensitive natural communities is described below. For comprehensive, systematic botanical field surveys where no special status plants or sensitive natural communities were found, reporting

and data collection responsibilities for botanical field surveyor remain as described

[15] U.S. Fish and Wildlife Service Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants available at: https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/

below, excluding specific occurrence information.

Special Status Plant and Sensitive Natural Community Observations

Record the following information for locations of each special status plant and sensitive natural community detected during a botanical field survey of a project area.

- The specific geographic locations where the special status plants and sensitive natural communities were found. Preferably this will be done by use of global positioning system (GPS) and include the datum[16] in which the spatial data was collected and any uncertainty or error associated with the data. If GPS is not available, a detailed map (1:24,000 or larger) showing locations and boundaries of each special status plant population and sensitive natural community in relation to the project area is acceptable. Mark occurrences and boundaries as accurately as possible;
- The site-specific characteristics of occurrences, such as associated species, habitat and microhabitat, structure of vegetation, topographic features, soil type, texture, and soil parent material. If a special status plant is associated with a wetland, provide a description of the direction of flow and integrity of surface or subsurface hydrology and adjacent off-site hydrological influences as appropriate;
- The number of individuals in each special status plant population as counted (if population is small) or estimated (if population is large);
- If applicable, information about the percentage of each special status plant in each life stage such as seedling, vegetative, flowering and fruiting;
- The density of special status plants, identifying areas of relatively high, medium and low density of each special status plant in the project area; and
- Digital images of special status plants and sensitive natural communities in the project area, with diagnostic features.

Special Status Plant and Sensitive Natural Community Documentation

When a special status plant is located, data must be submitted to the CNDDB. Data may be submitted in a variety of formats depending on the amount and type of data that is collected[17]. The most common way to submit data is the Online CNDDB Field Survey Form[18], or equivalent written report, accompanied by geographic locality information (GPS coordinates, GIS shapefiles, KML files, topographic map, etc.). Data submitted in digital form must include the datum[19] in which it was collected.

If a sensitive natural community is found in a project area, document it with a Combined

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16 NAD83, NAD27 or WGS84

17 See https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data for information on acceptable data submission formats.

18 Available at: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data

19 NAD83, NAD27 or WGS84

Vegetation Rapid Assessment and Relevé Field Form[20] and submit the form to VegCAMP[21].

Voucher Collection

Voucher specimens provide verifiable documentation of special status plant presence and identification and a scientific record. This information is vital to conservation efforts and valuable for scientific research. Collection of voucher specimens should be conducted in a manner that is consistent with conservation ethics, and in accordance with applicable state and federal permit requirements (e.g. scientific, educational, or management permits pursuant to Fish & G. Code, § 2081, subd. (a)). Voucher collections of special status plants (or possible special status plants) should only be made when such actions would not jeopardize the continued existence of the population. A plant voucher collecting permit[22] is required from CDFW prior to the take or possession of a state-listed plant for voucher collection purposes, and the permittee must comply with all permit conditions.

Voucher specimens should be deposited in herbaria that are members of the Consortium of California Herbaria[23] no later than 120 days after the collections have been made. Digital imagery can be used to supplement plant identification and document habitat. Record all relevant collector names and permit numbers on specimen labels (if applicable).

Botanical Survey Reports

Botanical survey reports provide an important record of botanical field survey results and project area conditions. Botanical survey reports containing the following information should be prepared whenever botanical field surveys take place, and should also be submitted with project environmental documents:

Project and location description

- A description of the proposed project;
- A detailed map of the project area that identifies topographic and landscape features and includes a north arrow and bar scale;
- A vegetation map of the project area using Survey of California Vegetation Classification and Mapping Standards[24] at a thematic and spatial scale that allows the display of all sensitive natural communities;
- A soil map of the project area; and

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20 Available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Submit

21 Combined Vegetation Rapid Assessment and Releve Field Forms can be emailed to VegCAMP staff. Contact information available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Other-Info

22 Applications available at: https://www.wildlife.ca.gov/Conservation/Plants/Permits

23 A list of Consortium of California Herbaria participants is available at: http://ucjeps.berkeley.edu/consortium/participants.html

24 Available at: https://www.wildlife.ca.gov/data/vegcamp/publications-and-protocols

- A written description of the biological setting, including all natural communities; geological and hydrological characteristics; and land use or management history.

Detailed description of survey methodology and results

- Names and qualifications of botanical field surveyor(s);
- Dates of botanical field surveys (indicating the botanical field surveyor(s) that surveyed each area on each survey date), and total person-hours spent;
- A discussion of the survey preparation methodology;
- A list of special status plants and sensitive natural communities with potential to occur in the region;
- Description(s) of reference site(s), if visited, and the phenological development of special status plant(s) at those reference sites;
- A description and map of the area surveyed relative to the project area;
- A list of all plant taxa occurring in the project area, with all taxa identified to the taxonomic level necessary to determine whether or not they are a special status plant;
- Detailed data and maps for all special status plants and sensitive natural communities detected. Information specified above under the headings "Special Status Plant and Sensitive Natural Community Observations," and "Special Status Plant and Sensitive Natural Community Documentation," should be provided for the locations of each special status plant and sensitive natural community detected. Copies of all California Native Species Field Survey Forms and Combined Vegetation Rapid Assessment and Relevé Field Forms should be sent to the CNDDB and VegCAMP, respectively, and included in the project environmental document as an Appendix[25];
- A discussion of the potential for a false negative botanical field survey;
- A discussion of how climatic conditions may have affected the botanical field survey results;
- A discussion of how the timing of botanical field surveys may affect the comprehensiveness of botanical field surveys;
- Any use of existing botanical field surveys and a discussion of their applicability to the project;
- The deposition locations of voucher specimens, if collected; and
- A list of references used, including persons contacted and herbaria visited.

[25] It is not necessary to submit entire environmental documents to the CNDDB

Assessment of potential project impacts

- A discussion of the significance of special status plant populations in the project area considering nearby populations and total range and distribution;
- A discussion of the significance of sensitive natural communities in the project area considering nearby occurrences and natural community distribution;
- A discussion of project related direct, indirect, and cumulative impacts to special status plants and sensitive natural communities;
- A discussion of the degree and immediacy of all threats to special status plants and sensitive natural communities, including those from invasive species;
- A discussion of the degree of impact, if any, of the project on unoccupied, potential habitat for special status plants; and
- Recommended measures to avoid, minimize, or mitigate impacts to special status plants and sensitive natural communities.

4. BOTANICAL FIELD SURVEYOR QUALIFICATIONS

Botanical field surveyors should possess the following qualifications:

- Knowledge of plant taxonomy and natural community ecology;
- Familiarity with plants of the region, including special status plants;
- Familiarity with natural communities of the region, including sensitive natural communities;
- Experience with the CNDDB, BIOS, and Survey of California Vegetation Classification and Mapping Standards;
- Experience conducting floristic botanical field surveys as described in this document, or experience conducting such botanical field surveys under the direction of an experienced botanical field surveyor;
- Familiarity with federal, state, and local statutes and regulations related to plants and plant collecting; and
- Experience analyzing the impacts of projects on native plant species and sensitive natural communities.

5. SUGGESTED REFERENCES

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This document is available online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline

Appendix A-2
California Tiger Salamander

United States Fish and Wildlife Service and California Department of Fish and Game, October 2003

Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander
October 2003

The Santa Barbara County population of the California tiger salamander (*Ambystoma californiense*) was federally listed as endangered on September 21, 2000 (65 **FR** 57242). The Sonoma County Distinct Population Segment (DPS) of the California tiger salamander was listed as endangered on July 22, 2002 (67 **FR** 47727). The Central California DPS of the California tiger salamander was proposed for listing as threatened on May 23, 2003 (68 **FR** 28648). The Santa Barbara and Sonoma County DPSs were proposed for reclassification from endangered to threatened, on May 23, 2003 (68 **FR** 28648). The California Department of Fish and Game (Department) considers the California tiger salamander throughout its entire range to be a species of special concern (Special Animals List July 2003 http://www.dfg.ca.gov/whdab/html/lists.html).

The Service and Department have received numerous requests for guidance in planning for the protection of the California tiger salamander (CTS) at the sites of proposed and existing land use activities. This document provides interim guidance for two procedures to accurately assess the likelihood of CTS presence in the vicinity of a project site, including: (1) an assessment of CTS locality records and potential CTS habitat in and around the project area; and (2) focused field surveys of breeding pools and their associated uplands to determine whether CTS are likely to be present.

Because CTS use aquatic and upland habitats during their life cycle, they may be present in either or both habitats on a given property. For sites with suitable breeding habitat, two consecutive seasons of negative larval surveys and a negative upland drift fence study in the intervening fall/winter are recommended to support a negative finding. For sites with no suitable aquatic breeding habitat, but where suitable upland habitat exists, two consecutive seasons of negative upland drift fence studies are recommended to support a negative finding.

If the following Guidance is followed completely, the results of these site assessments and field surveys will be considered valid by the Service and Department.
Results of the site assessments and field surveys should be reported to the appropriate Service's Field Office, if appropriate the Service's Regional Office in Portland, Oregon pursuant to the terms and conditions of the permittee's section 10(a)(1)(A) recovery permit, and to the Department and other agencies or offices as required. Details regarding the recommended content and/or format of reports are provided throughout the remainder of this document.

Surveyors must obtain permission of the landowner before implementing any surveys or research on the CTS. **In locations where the CTS is federally listed surveyors should obtain a Recovery Permit for this species pursuant to section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended, prior to implementing the guidance.** For surveys that may ultimately be used in support of a negative finding, it is recommended that surveyors consult with Service biologists on their study design before beginning work. If surveyors are working in areas with other federally listed species that are likely to be captured incidentally during CTS

surveys, surveyors should also possess a valid 10(a)(1)(A) permit for these species (e.g., California red-legged frog, vernal pool tadpole shrimp, *etc*.). **For all locations, the surveyor should hold an active Scientific Collecting Permit from the Department that specifically names CTS surveys as an authorized activity. Authorization Number 9, without explicit permission for handling CTS, is not adequate for CTS surveys.**

Site Assessment for the California tiger salamander

Available information about CTS and their habitats in the vicinity of the project should be used to determine the likelihood that CTS may occur there and if field surveys are appropriate. The project proponent should compile and submit to the Service and the Department the following information:

Element 1. Is the project site within the range of the CTS?

The surveyor should review the attached maps or referenced weblink to determine if the project site is within the range of the CTS. For Sonoma County, refer to the attached county map. For Santa Barbara County, refer to http://ventura.fws.gov/Images/CTS_Range.jpg. For Monterey, San Benito, and San Luis Obispo counties, contact the Ventura Fish and Wildlife Office at the address provided below. For all other areas, refer to the attached map of California.

Element 2. What are the known localities of CTS within the project site and within 3.1 miles (5.0 kilometers) (km) of the project boundaries? This is to place the project site in a regional perspective.

The surveyor should consult the California Natural Diversity Data Base (CNDDB) maintained by the Department to determine known localities of the CTS. The Sacramento or Ventura Fish and Wildlife Offices should be contacted for localities within their respective jurisdictions. Other information sources on local occurrences of CTS should be consulted. These sources may include, but are not limited to, biological consultants, local residents, amateur herpetologists, resources managers and biologists from municipal, state, and Federal agencies, environmental groups, and herpetologists at museums and universities. The surveyor should note in their report all known CTS localities within the project site and within 3.1 miles of the project boundaries; if there are no localities within 3.1 miles, the nearest locality should be noted.

Element 3. What are the habitats within the project site and within 1.24 miles (2 km) of the project boundaries? This distance is based on the observed mobility of the species.

Describe the upland and aquatic habitats within the project site and within 1.24 miles of the project boundaries. Characteristics of the site that should be recorded include acreage, elevation, topography, plant communities, presence and types of water bodies, fossorial mammal species and their burrows, current land use, a description of adjacent lands, and an assessment of potential barriers to CTS movement. Use of aerial photographs is necessary to characterize potential breeding habitats that are not part of the project site under consideration. The aquatic habitats should be mapped and characterized (*e.g.*, natural vernal pools, stockponds, drainage ditches, creeks, types of vegetation, surface area, depth, approximate drying date). Suitable upland habitat, including locations of underground refugia, for CTS should be mapped as well, with a focus on areas where small mammal burrows are located or are most dense.

Reporting and interpretation of the site assessment

Site assessments should include, but are not limited to, the following information: (1) photographs of the project site(s); (2) survey dates and times; names of evaluator(s); (3) a description of the site assessment methods used; (4) a list of CTS localities, as requested above; and (5) a map of the site(s) showing habitat as requested above. Maps should be of similar nature to a U.S. Geological Survey (USGS) 7.5-minute (1:24,000) topographic maps -or- Geographic Information System (GIS) data depicting the site(s) and the area within 5 kilometers (3.2 miles) of its boundaries. The report should be provided to the appropriate Service field office and Department regional office prior to initiating field surveys.

After completing items 1-3 of the site assessment (as above), send a report to the appropriate Service field office and Department regional office. Based on the information provided from the site assessment, the Service and Department will provide recommendations as to the appropriateness of field surveys. **Surveys should not be initiated until recommended by the Service and Department.**

Interim Presence/Negative Finding Survey Guidance for the California Tiger Salamander

Biological field surveys should be conducted for all sites with potential CTS habitat. Due to its unique life history, the CTS can be difficult to detect depending on weather and time of year. Aquatic sampling for larvae during spring months can be the most effective way to determine if CTS are present in a given area. However, especially if environmental conditions are unfavorable, CTS may not breed successfully in a given year. After metamorphosis CTS spend most of each year on land, emerging from refugia only occasionally, usually on rainy nights. CTS have been observed on land 1.24 miles from any potential breeding pool.

At sites that contain both upland habitat and potential breeding habitat (*i.e.*, pools that contain standing water continuously for at least 10 weeks, extending into April), aquatic sampling during two breeding seasons and a drift fence study in the intervening winter should be conducted to support a negative finding. At sites that contain appropriate upland habitat only, but where there is a known or potential breeding site accessible within 1.24 miles, a two-year drift fence study should be conducted.

In years with little rainfall, upland emergence may be reduced and CTS may not breed. Field surveys conducted in years with at least 70% of average rainfall between September 1 and April 1, at the nearest National Oceanic and Atmospheric Administration climate station are most reliable. Data from survey seasons not meeting this criterion will also be considered; surveyors should provide strong justification that their data are reliable including but not limited to local climate (*e.g.*, daily rainfall totals, pond filling date, pond drying date) and biological survey data (*e.g.*, other species captured during each sampling interval).

Aquatic larval sampling

1. Aquatic larval surveys of potential breeding pools should be repeated three times each season. Surveys should be conducted once each in March, April, and May, with at least 10 days between surveys. **If pools are likely to dry prior to the completion of three surveys, the sampling schedule should be shifted accordingly.**

2. Captured CTS should remain in nets for the minimum amount of time necessary, but no longer than 5 minutes. During this time, larvae should not be kept out of water for more than 30 seconds. Photographs should document a representative sample of captured CTS.

3. Disruption to the pond's bottom should be minimized. Shallow areas where young larvae may occur should be traversed in the most direct and least disturbing manner possible.

4. Sampling should cease once presence has been determined to minimize disturbance of pool flora and fauna. If CTS are detected at a pond, subsequent visits to that pond are not necessary.

5. Ponds should be initially sampled using D-shaped or similar, long-handled dipnets with 1/8th inch (3.2mm) or finer mesh. If CTS larvae are not captured in the first 50 dipnet sweeps, covering representative portions of the pond, seines should be used.

6. <u>If dipnetting has been unsuccessful</u>, seines should be used to sample 100% of the surface area of ponds smaller than 1 acre and at least 30% of the surface area of larger pools, including a representative sample from different water depths and vegetated and non-vegetated areas. One eighth inch (3.2 mm) or finer mesh minnow seines with weights along the bottom and floats along the top edge should be used, with dowling or PVC pipe attached to the end of the seine so the bottom edge can be dragged along the bottom of the pool. Whenever possible, the seine should be pulled from one edge of the pond to the other.

7. Use of minnow traps will be considered on a case-by-case basis. Minnow trapping for CTS larvae should only be conducted in habitats that are too deep to adequately survey with dipnets and seines, or in which dense vegetation impedes normal dipnetting/seining activities. **In these cases the surveyor should submit to the Service a written minnow trap sampling design based on the requirements detailed below.** No minnow trapping should be conducted in ponds known to support state or federally threatened or endangered animals (*e.g.,* California red-legged frogs (*Rana aurora draytonii*)). In areas where California red-legged frogs may occur, minnow trapping should be preceded by negative surveys following the Service guidelines for this species. To conduct minnow trap sampling in pools known to contain California red-legged frogs, surveyors must possess a valid Recovery Permit for this species pursuant to section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended.

   Minnow trapping should be conducted in the following manner:

   a. Minnow traps should be monitored for three three-day intervals between March 1 and May 15 (for a total of nine days of trapping per site). Trapping intervals should be separated by at least ten days. Minnow trap surveys should immediately cease if CTS presence is determined.

b. Minnow trapping should be avoided during warm periods when air temperatures reach 80 degrees Fahrenheit or when water temperatures reach 70 degrees Fahrenheit or warmer, to prevent the possibility of mortality due to reduced oxygen availability.

c. Minnow traps should be deployed overnight and checked frequently enough to ensure that larvae are not killed or injured. Traps should be checked at least once per day.

d. A minimum of four traps should be placed in each pond. For larger ponds, traps should be distributed along the shoreline with no more than 75 ft (23 m) between traps. Each trap should be clearly marked with the name, telephone number, and State and Federal permit number of the surveyor. Traps should be anchored to stakes set near the shoreline. Steel braided fishing line or heavy cord works well for this purpose; galvanized wire and stainless steel wire should not be used because these wires may kink and break. If livestock are present, we recommend that the surveyor devise a method to anchor the trap in a manner to prevent entanglement of livestock. Brightly colored flagging should be affixed to each anchor point. For extra security, a float attached to each trap can aid in detection. If a minnow trap is lost, every effort should be made to recover it to avoid the possibility of leaving behind a trap that can kill a variety of species over time.

e. Traps should be deployed to the deepest parts of ponds and in shoreline areas with aquatic vegetation growth.

9. Data regarding the type and quality of each pool sampled should be recorded. At a minimum, these data should include the date and time, location, type of water body (*e.g.*, vernal pool, seasonal wetland, artificial impoundment, etc.), dimension and depth of pond, water temperature, turbidity, presence of aquatic vegetation (submergent and emergent), and dominant invertebrates and all vertebrates observed. Photographs of pools and adjacent upland areas are helpful and copies should be included in the final report.

10. Surveyors should follow guidance below for disinfecting equipment and clothing after surveying a pond and before entering a new pond, unless the two ponds are hydrologically connected to one another. These recommendations are adapted from the Declining Amphibian Population Task Force's Code which can be found in their entirety at: http://www.mpm.edu/collect/vertzo/herp/daptf/fcode.html.

a. All dirt and debris, including mud, snails, plant material (including fruits and seeds), and algae, should be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water. Cleaned items should be rinsed with clean water before leaving each study site.

b. Boots, nets, traps, *etc.*, should then be scrubbed with either a 70 % ethanol solution, a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water), QUAT

128 (quaternary ammonium, use 1:60 dilution), or a 6% sodium hypochlorite 3 solution and rinsed clean with water between study sites. Cleaning equipment in the immediate vicinity of a pond or wetland should be avoided. Care should be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

c. When working at sites with known or suspected disease problems, disposable gloves should be worn and changed between handling each animal.

d. Used cleaning materials (liquids, *etc*.) should be disposed of safely, and if necessary, taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

Upland Habitat Survey Methods

A drift fence study conducted during fall and winter is the primary method used to study CTS in upland habitats. To support a negative finding, an upland drift fence study should be included. Although less intrusive methods (see below) may also be used to determine presence of the CTS, these methods are less reliable and thus cannot be used to support a negative finding.

Because CTS have been observed to make breeding migrations of at least 0.6 miles (1 km), the project proponent or the Service may assume presence of CTS if a known breeding pond lies within 1 km and no significant barriers exist. Examples of significant physical barriers include high-density residential or urban development and Interstate Highways, while features such as golf courses, disked fields, and most paved roads are not considered barriers.

For sites with at least one accessible potential breeding pool, we recommend that a one-year drift fence study be conducted during the winter between two consecutive seasons of aquatic larval surveys (if presence of CTS was not established during the first season of aquatic sampling). We recommend that a two year drift fence study be conducted if: 1) a site has suitable upland habitat and a potential breeding pool lies within 1.2 miles (2 km); 2) on-site ponds cannot be adequately sampled using aquatic methods (*e.g*., deep impoundments with known presence of California red-legged frogs); or 3) if non-native predators or poor water quality may preclude detection of CTS during larval sampling (*i.e*., due to mortality of the larvae).

1. We recommend that a proposal to conduct a drift fence study be submitted in writing to the Service and the Department. The results of studies not approved by the Service and Department may not be accepted in support of a negative finding. The proposal should include an aerial photograph of the study site indicating all potential on- and off-site breeding locations identified in the site assessment and an overlay with the proposed drift fence study design clearly delineated. We recommend that drift fence study designs incorporate the following:

    a. For sites with at least one suitable breeding pond (*i.e*., ponds that contain standing water for at least 10 continuous weeks in most years), the ponds should be surrounded by drift fences installed 10 - 50 ft from the high water line.

Sections of drift fence should be spaced regularly around the pond, focusing on areas where salamanders are most likely to be captured. We recommend that each section of fence be at least 30 ft (9.2 m) long, and that the total distance between fence sections be no greater than the total length of installed fence (i.e., >50% of the circumference fenced). There should be no more than 33 ft (10 m) between pitfall traps, and drift fences should be constructed such that during periods when traps are closed, openings at least every 66 ft (20 m) allow animal passage.

b. **For all sites**, we also recommend upland drift fences. Unless a strong rationale can be presented, drift fence equaling at least 90% of the site perimeter should be installed. The exact placement of fences should be selected to maximize the probability of capturing CTS (*e.g.*, in grassland areas with high densities of mammal burrows; along site boundaries closest to identified potential breeding pools; with pitfalls situated away from areas where flooding is likely). Pitfalls should be spaced less than 33 ft apart. To the extent possible drift fences and pitfalls should be placed to minimize the number of flooded buckets. Each section of fence should be a minimum of 30 ft (9.2 m) long, unless topography, property lines, or other circumstances dictate. Upland drift fences should be constructed such that during periods when traps are closed, openings at least every 66 ft (20 m) allow animal passage.

2. Arrays should be approved and constructed by 15 October. Beginning on or before October 15, pitfall buckets should be opened before sunset if there was any rain during the day or if at 2 PM rain is forecast for the remainder of the day or subsequent night with 70% or greater probability (based on the nearest National Weather Service forecast - available at http://www.wrh.noaa.gov/Sacramento/). Traps should be open each night and checked each morning until no rain has fallen within the preceding 24 hours. Nights of high relative humidity (greater than 75% relative humidity) should be considered equivalent to rain events once onsite or nearby seasonal wetlands have become inundated with standing water, regardless of its depth, surface area, or duration. The above guidance should be followed until 20 nights of surveying under the proper conditions has been conducted. After 20 nights of surveying is completed, and until March 15, pitfall buckets should be opened before sunset if there was any rain during the day, or if at 2 PM rain is forecast for the remainder of the day or subsequent night with 70% or greater probability. Traps will be checked the next morning, and unless it is still raining or more rain is forecast, the traps can be closed until the next rain event.

3. Drift fences should be constructed from a material that is durable, weather resistant, and **appropriate for the area in which it will be installed; proposals should describe the materials to be used**. Examples include aluminum flashing, silt fencing, untreated wood particle board, shade cloth, window screen, Vexar plastic mesh, *etc*. Hardware cloth may be useful for short segments of fence that experience heavy overland water flow. Drift fences should be buried at least 3 inches (8 cm) underground and extend at least 1 ft (31 cm) above the ground. All drift fences require regular inspections and maintenance, especially after each significant storm event. If drift fences are installed incorrectly

and/or have insufficient maintenance this may call into question the reliability of the data. Unless special authorization is received from the Service and Department to maintain drift fences through non-sampling months, drift fencing should be disassembled by April 1.

4. Pitfall traps should not be placed in a manner that will disturb or destroy rodent burrows or other refugia that could be used by CTS.

5. Excessive pitfall flooding may invalidate a study. To avoid flooding traps should be placed preferentially in slightly elevated locations where flooding is less likely. Pitfalls in locations likely to flood should be free of holes. If ground saturation forces a pitfall out of the soil it can be weighted down with cement, gravel or other suitable materials.

6. All pitfall traps should have a rigid lid that closes securely. When not in use, traps should be closed in a manner that precludes entry by CTS and other animals.

7. Pitfall traps should be cylindrical, non-galvanized, metal or plastic containers. They should be at least 2-gallons in size and 8 in (20 cm) deep.

8. Each pitfall trap should contain noncellulose sponges or other nontoxic absorbent material which should be kept moist at all times.

9. Each pitfall trap should have a rigid cover with legs one to two inches high to provide shade and shed water during extreme rain events.

10. When in use, pitfall traps should be checked as often as necessary, but at a minimum one time a day, with one of these checks occurring between one hour before sunrise and noon. Whenever possible, traps should be opened just before dark and checked and closed the following morning.

11. When not in use, the drift fence and pitfall traps should be inspected weekly to ensure the system has not been disturbed by vandals, wildlife, fallen trees, wind, *etc.* Repairs to fences should be completed prior to the next night of sampling.

12. Pitfall traps should be placed as far as possible from ant nests. If an ant nest develops within 10 feet of an existing pitfall trap, the pitfall trap should be moved, removed from the field, or closed.

13. Captured CTS should be released as near as possible to the point of capture, in a manner that maximizes their survival. CTS should be released into the mouth of a small mammal burrow or other suitable refugia. CTS should be watched after release to be sure that they are in a safe location and are not susceptible to increased predation risk.

14. Once a CTS is captured, all traps and drift fences should be emptied and removed within 24 hours, and holes in the ground which contain traps should be filled in.

15. In addition, to minimize mortality of small mammals that may become trapped during surveys, each pitfall trap should also incorporate either jute twine, as described in Karraker (2001; http://www.fs.fed.us/psw/rsl/projects/wild/karraker/karraker4.pdf), a rodent safe-house as described in Padgett-Flohr and Jennings (2001), or other material as approved by the Service and Department.

16. Each pitfall trap should be marked with the name, telephone number, and Department permit number.

Other methods

Other methods, such as visual egg surveys, night driving, nocturnal surveys, fiber optic scoping and cover-boards, may be used to determine presence of the CTS, but these techniques may not be accepted in support of a negative finding. Deviations from this guidance may be approved on a case-by-case basis if a strong rationale can be presented.

Reporting

If one or more CTS are captured or detected a representative sample of the embryo(s), larva(e), or transformed salamander(s) should be photographed. The Service and the Department should be contacted by telephone within 3 working days if CTS are captured. If any mortality of California tiger salamander occurs, specimens should be collected, preserved by freezing, and the Service and the Department contacted by telephone within 1 work day.

For each survey location, a final report detailing the survey results should be submitted to the Service and the Department within one month of the last site visit. The written report should include, but is not be limited to, the following information: names of surveyors and copies of permits and authorizations, a description and map at the appropriate resolution of the type and quality of upland and aquatic habitats and land uses at the site; a map indicating the location of water bodies sampled for larvae; a map indicating the location of drift fences and pitfalls. The survey report also should include survey methods used, the dates and times of surveys, rainfall totals by date, nightly minimum temperatures, number and length of dipnet sweeps made, number of passes with seine, total estimated area seined, records of upland and aquatic animals captured, and pond water temperature, turbidity, and maximum depth at each aquatic sampling. If CTS are detected on the site, the report should include a map indicating the precise location of all CTS observations and captures, the number of CTS egg masses, larvae, sub-adults and adults observed, and photographic verification of CTS from the site. Site photographs may also be helpful in interpreting survey results. For the Department, survey reports should also include CNDDB field locality forms. Locality information should be in the form of UTM or latitude/longitude (degree, minute, second) coordinates.

In the case of a negative finding including a season with <70% of average rainfall, additional information (*e.g.*, pond filling/drying dates, quantity and timing of rainfall during each sampling interval, temperatures) supplied by the surveyor, may assist the Service and the Department in their decision whether or not to accept the data.

Contact Information:

U.S. Fish and Wildlife Service

For an application or guidance on how to obtain a Federal permit or for reporting, please contact:

For areas within the Great Valley hydrobasin:

U.S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office
Attn: Permit Coordinator
2800 Cottage Way, W-2605
Sacramento, California 95825
(916) 414-6547

For hydrobasins south of and including Santa Cruz County:

U.S. Fish and Wildlife Service
Ventura Fish and Wildlife Office
Attn: Permit Coordinator
2493 Portola Road, Suite B
Ventura, California 93003
(805) 644-1766

http://endangered.fws.gov/permits/

Please refer to http://ventura.fws.gov/VFWO_area.htm for a map showing U.S. Fish and Wildlife Office jurisdictions.

California Department of Fish and Game

For Department reporting or questions regarding land use activity guidance, a map of regional offices and telephone numbers is available at http://www.dfg.ca.gov/regions/regions.html

For State of California Scientific Collecting permit applications and information, please contact:

California Department of Fish and Game
License and Revenue Branch
3211 S Street
Sacramento, California 95816
(916) 227-2271

For additional State permit information, please refer to:

http://www.dfg.ca.gov/licensing/pdffiles/fg1547.pdf (How to Obtain a Scientific Collecting Permit)

http://www.dfg.ca.gov/hcpb/ceqacesa/rsrchpermit/mou/whenneedmou.shtml (When is the MOU Required?)

http://www.dfg.ca.gov/licensing/pdffiles/fg1476.pdf (Scientific Collecting Regulations)

http://www.dfg.ca.gov/licensing/pdffiles/fg1379e.pdf (Scientific Collecting Permit Attachment)

Appendix A-3
Swainson's Hawk

Swainson's Hawk Technical Advisory Committee, May 31, 2000

RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY

Swainson's Hawk Technical Advisory Committee

May 31, 2000

This set of survey recommendations was developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reducing the potential for nest failures as a result of project activities/disturbances. The combination of appropriate surveys, risk analysis, and monitoring has been determined to be very effective in reducing the potential for project-induced nest failures. As with most species, when the surveyor is in the right place at the right time, Swainson's hawks may be easy to observe; but some nest sites may be very difficult to locate, and even the most experienced surveyors have missed nests, nesting pairs, mis-identified a hawk in a nest, or believed incorrectly that a nest had failed. There is no substitute for specific Swainson's hawk survey experience and acquiring the correct search image.

METHODOLOGY

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's (CDFG) recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a ½ mile radius around all project activities, and if active nesting is identified within the ½ mile radius, consultation is required. In general, the TAC recommends this approach as well.

Minimum Equipment

Minimum survey equipment includes a high-quality pair of binoculars and a high quality spotting scope. Surveying even the smallest project area will take hours, and poor optics often result in eye-strain and difficulty distinguishing details in vegetation and subject birds. Other equipment includes good maps, GPS units, flagging, and notebooks.

Walking vs Driving

Driving (car or boat) or "windshield surveys" are usually preferred to walking if an adequate roadway is available through or around the project site. While driving, the observer can typically approach much closer to a hawk without causing it to fly. Although it might appear that a flying bird is more visible, they often fly away from the observer using trees as screens; and it is difficult to determine from where a flying bird came. Walking surveys are useful in locating a nest after a nest territory is identified, or when driving is not an option.

Angle and Distance to the Tree

Surveying subject trees from multiple angles will greatly increase the observer's chance of detecting a nest or hawk, especially after trees are fully leafed and when surveying multiple trees

in close proximity. When surveying from an access road, survey in both directions. Maintaining a distance of 50 meters to 200 meters from subject trees is optimal for observing perched and flying hawks without greatly reducing the chance of detecting a nest/young: Once a nesting territory is identified, a closer inspection may be required to locate the nest.

Speed
Travel at a speed that allows for a thorough inspection of a potential nest site. Survey speeds should not exceed 5 miles per hour to the greatest extent possible. If the surveyor must travel faster than 5 miles per hour, stop frequently to scan subject trees.

Visual and Aural Ques
Surveys will be focused on both observations and vocalizations. Observations of nests, perched adults, displaying adults, and chicks during the nesting season are all indicators of nesting Swainson's hawks. In addition, vocalizations are extremely helpful in locating nesting territories. Vocal communication between. hawks is frequent during territorial displays; during courtship and mating; through the nesting period as mates notify each other that food is available or that a threat exists; and as older chicks and fledglings beg for food.

Distractions
Minimize distractions while surveying. Although two pairs of eyes may be better than one pair at times, conversation may limit focus. Radios should be off, not only are they distracting, they may cover a hawk's call.

Notes and Species Observed
Take thorough field notes. Detailed notes and maps of the location of observed Swainson's hawk nests are essential for filling gaps in the Natural Diversity Data Base; please report all observed nest sites. Also document the occurrence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species. These species will infrequently nest within 100 yards of each other, so the presence of one species will not necessarily exclude another.

TIMING

To meet **the minimum level** of protection for the species, surveys should be completed for **at least** the two survey periods immediately prior to a project's initiation. For example, if a project is scheduled to begin on June 20, you should complete 3 surveys in Period III and 3 surveys in Period V. However, it is always recommended that surveys be completed in Periods II, III and V. **Surveys should not be conducted in Period IV.**

The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawks from San Joaquin County to Northern Yolo County. Dates should be adjusted in consideration of early and late nesting seasons, and geographic differences (northern nesters tend to nest slightly later, etc). If you are not sure, contact a TAC member or CDFG biologist.

Survey dates **Justification and search image**	**Survey time**	**Number of Surveys**
I. *January-March 20 (recommended optional)*	*All day*	*1*

Prior to Swainson's hawks returning, it may be helpful to survey the project site to determine potential nest locations. Most nests are easily observed from relatively long distances, giving the surveyor the opportunity to identify potential nest sites, as well as becoming familiar with the project area. It also gives the surveyor the opportunity to locate and map competing species nest sites such as great homed owls from February on, and red-tailed hawks from March on. After March 1, surveyors are likely to observe Swainson's hawks staging in traditional nest territories.

II. *March 20 to April 5*	*Sunrise to 1000* *1600 to sunset*	*3*

Most Central Valley Swainson's hawks return by April 1, and immediately begin occupying their traditional nest territories. For those few that do not return by April 1, there are often hawks ("floaters") that act as place-holders in traditional nest sites; they are birds that do not have mates, but temporarily attach themselves to traditional territories and/or one of the site's "owners." Floaters are usually displaced by the territories' owner(s) if the owner returns.

Most trees are leafless and are relatively transparent; it is easy to observe old nests, staging birds, and competing species. The hawks are usually in their territories during the survey hours, but typically soaring and foraging in the mid-day hours. Swainson's hawks may often be observed involved in territorial and courtship displays, and circling the nest territory. Potential nest sites identified by the observation of staging Swainson's hawks will usually be active territories during that season, although the pair may not successfully nest/reproduce that year.

III. *April 5 to April 20*	*Sunrise to 1200* *1630 to Sunset*	***3***

Although trees are much less transparent at this time, 'activity at the nest site increases significantly. Both males and females are actively nest building, visiting their selected site frequently. Territorial and courtship displays are increased, as is copulation. The birds tend to vocalize often, and nest locations are most easily identified. This period may require a great deal of "sit and watch" surveying.

IV. *April 21 to June 10*	*Monitoring known nest sites only* ***Initiating Surveys is not recommended***	

Nests are extremely difficult to locate this time of year, and even the most experienced surveyor will miss them, especially if the previous surveys have not been done. During this phase of nesting, the female Swainson's hawk is in brood position, very low in the nest, laying eggs, incubating, or protecting the newly hatched and vulnerable chicks; her head may or may not be visible. Nests are often well-hidden, built into heavily vegetated sections of trees or in clumps of mistletoe, making them all but invisible. Trees are usually not viewable from all angles, which may make nest observation impossible.

Following the male to the nest may be the only method to locate it, and the male will spend hours away from the nest foraging, soaring, and will generally avoid drawing attention to the nest site. Even if the observer is fortunate enough to see a male returning with food for the female, if the female determines it is not safe she will not call the male in, and he will not approach the nest; this may happen if the observer, or others, are too close to the nest or if other threats, such as rival hawks, are apparent to the female or male.

V. ***June 10 to JuIy 30 (post-fledging)*** ***Sunrise to 1200*** ***3***
1600 to sunset

Young are active and visible, and relatively safe without parental protection. Both adults make numerous trips to the nest and are often soaring above, or perched near or on the nest tree. The location and construction of the nest may still limit visibility of the nest, young, ‘and adults.

DETERMINING A PROJECT'S POTENTIAL
FOR IMPACTING SWAINSON'S HAWKS

LEVEL OF RISK	REPRODUCTIVE SUCCESS (Individuals)	LONGTERM SURVIVABILITY (Population)	NORMAL SITE CHARACTERISTICS (Daily Average)	NEST MONI-TORING
HIGH	Direct physical contact with the nest tree while the birds are on eggs or protecting young. (Helicopters in close proximity)	Loss of available foraging area.	Little human-created noise, little human use: nest is well away from dwellings, equipment yards, human access areas, etc. *Do not include general cultivation practices in evaluation.*	**MORE**
		Loss of nest trees.		
	Loss of nest tree after nest building is begun prior to laying eggs.	Loss of potential nest trees.		
	Personnel within 50 yards of nest tree (out of vehicles) for extended periods while birds are on eggs or protecting young that are < 10 days old.	Cumulative: Multi-year, multi-site projects with substantial noise/personnel disturbance.		
	Initiating construction activities (machinery and personnel) within 200 yards of the nest after eggs are laid and before young are > 10 days old.	Cumulative: Single-season projects with substantial noise/personnel disturbance that is greater than or significantly different from the daily norm.		
	Heavy machinery only working within 50 yards of nest.		Substantial human-created noise and occurrence: nest is near roadways, well-used waterways, active airstrips, areas that have high human use. *Do not include general cultivation practices in evaluation.*	
	Initiating construction activities within 200 yards of nest before nest building begins or after young > 10 days old.	Cumulative: Single-season projects with activities that "blend" well with site's "normal' activities.		
LOW	All project activities (personnel and machinery) greater than 200 yards from nest.			**LESS**

Appendix A-4
Western Burrowing Owl

California Department of Fish and Game, March 7, 2012

Staff Report on Burrowing Owl Mitigation

State of California

Natural Resources Agency

Department of Fish and Game

March 7, 2012[1]

[1] This document replaces the Department of Fish and Game 1995 Staff Report On Burrowing Owl Mitigation.

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INTRODUCTION AND PURPOSE

Maintaining California's rich biological diversity is dependent on the conservation of species and their habitats. The California Department of Fish and Game (Department) has designated certain species as "species of special concern" when their population viability and survival is adversely affected by risk factors such as precipitous declines or other vulnerability factors (Shuford and Gardali 2008). Preliminary analyses of regional patterns for breeding populations of burrowing owls (*Athene cunicularia*) have detected declines both locally in their central and southern coastal breeding areas, and statewide where the species has experienced modest breeding range retraction (Gervais et al. 2008). In California, threat factors affecting burrowing owl populations include habitat loss, degradation and modification, and eradication of ground squirrels resulting in a loss of suitable burrows required by burrowing owls for nesting, protection from predators, and shelter (See Appendix A).

The Department recognized the need for a comprehensive conservation and mitigation strategy for burrowing owls, and in 1995 directed staff to prepare a report describing mitigation and survey recommendations. This report, "1995 Staff Report on Burrowing Owl Mitigation," (Staff Report) (CDFG 1995), contained Department-recommended burrowing owl and burrow survey techniques and mitigation measures intended to offset the loss of habitat and slow or reverse further decline of this species. Notwithstanding these measures, over the past 15+ years, burrowing owls have continued to decline in portions of their range (DeSante et al. 2007, Wilkerson and Siegel, 2010). The Department has determined that reversing declining population and range trends for burrowing owls will require implementation of more effective conservation actions, and evaluating the efficacy of the Department's existing recommended avoidance, minimization and mitigation approaches for burrowing owls.

The Department has identified three main actions that together will facilitate a more viable, coordinated, and concerted approach to conservation and mitigation for burrowing owls in California. These include:

1. Incorporating burrowing owl comprehensive conservation strategies into landscape-based planning efforts such as Natural Community Conservation Plans (NCCPs) and multi-species Habitat Conservation Plans (HCPs) that specifically address burrowing owls.
2. Developing and implementing a statewide conservation strategy (Burkett and Johnson, 2007) and local or regional conservation strategies for burrowing owls, including the development and implementation of a statewide burrowing owl survey and monitoring plan.
3. Developing more rigorous burrowing owl survey methods, working to improve the adequacy of impacts assessments; developing clear and effective avoidance and minimization measures; and developing mitigation measures to ensure impacts to the species are effectively addressed at the project, local, and/or regional level (the focus of this document).

This Report sets forth the Department's recommendations for implementing the third approach identified above by revising the 1995 Staff Report, drawing from the most relevant and current knowledge and expertise, and incorporating the best scientific information

available pertaining to the species. It is designed to provide a compilation of the best available science for Department staff, biologists, planners, land managers, California Environmental Quality Act (CEQA) lead agencies, and the public to consider when assessing impacts of projects or other activities on burrowing owls.

This revised Staff Report takes into account the California Burrowing Owl Consortium's Survey Protocol and Mitigation Guidelines (CBOC 1993, 1997) and supersedes the survey, avoidance, minimization and mitigation recommendations in the 1995 Staff Report. Based on experiences gained from implementing the 1995 Staff Report, the Department believes revising that report is warranted. This document also includes general conservation goals and principles for developing mitigation measures for burrowing owls.

DEPARTMENT ROLE AND LEGAL AUTHORITIES

The mission of the Department is to manage California's diverse fish, wildlife and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitats necessary to maintain biologically sustainable populations of those species (Fish and Game Code (FGC) §1802). The Department, as trustee agency pursuant to CEQA (See CEQA Guidelines, §15386), has jurisdiction by law over natural resources, including fish and wildlife, affected by a project, as that term is defined in Section 21065 of the Public Resources Code. The Department exercises this authority by reviewing and commenting on environmental documents and making recommendations to avoid, minimize, and mitigate potential negative impacts to those resources held in trust for the people of California.

Field surveys designed to detect the presence of a particular species, habitat element, or natural community are one of the tools that can assist biologists in determining whether a species or habitat may be significantly impacted by land use changes or disturbance. The Department reviews field survey data as well as site-specific and regional information to evaluate whether a project's impacts may be significant. This document compiles the best available science for conducting habitat assessments and surveys, and includes considerations for developing measures to avoid impacts or mitigate unavoidable impacts.

CEQA

CEQA requires public agencies in California to analyze and disclose potential environmental impacts associated with a project that the agency will carry out, fund, or approve. Any potentially significant impact must be mitigated to the extent feasible. Project-specific CEQA mitigation is important for burrowing owls because most populations exist on privately owned parcels that, when proposed for development or other types of modification, may be subject to the environmental review requirements of CEQA.

Take

Take of individual burrowing owls and their nests is defined by FGC section 86, and prohibited by sections 3503, 3503.5 and 3513. Take is defined in FGC Section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill."

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and Russia for the protection of migratory birds, including the burrowing owl (50 C.F.R. § 10). The MBTA protects migratory bird nests from possession, sale, purchase, barter, transport, import and export, and collection. The other prohibitions of the MBTA - capture, pursue, hunt, and kill - are inapplicable to nests. The regulatory definition of take, as defined in Title 50 C.F.R. part 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect. Only the verb "collect" applies to nests. It is illegal to collect, possess, and by any means transfer possession of any migratory bird nest. The MBTA prohibits the destruction of a nest when it contains birds or eggs, and no possession shall occur during the destruction (see Fish and Wildlife Service, Migratory Bird Permit Memorandum, April 15, 2003). Certain exceptions to this prohibition are included in 50 C.F.R. section 21. Pursuant to Fish & Game Code section 3513, the Department enforces the Migratory Bird Treaty Act consistent with rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

Regional Conservation Plans

Regional multiple species conservation plans offer long-term assurances for conservation of covered species at a landscape scale, in exchange for biologically appropriate levels of incidental take and/or habitat loss as defined in the approved plan. California's NCCP Act (FGC §2800 et seq.) governs such plans at the state level, and was designed to conserve species, natural communities, ecosystems, and ecological processes across a jurisdiction or a collection of jurisdictions. Complementary federal HCPs are governed by the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C.§ 1531 et seq.) (ESA). Regional conservation plans (and certain other landscape-level conservation and management plans), may provide conservation for unlisted as well as listed species. Because the geographic scope of NCCPs and HCPs may span many hundreds of thousands of acres, these planning tools have the potential to play a significant role in conservation of burrowing owls, and grasslands and other habitats.

Fish and Game Commission Policies

There are a number of Fish and Game Commission policies (see FGC §2008) that can be applied to burrowing owl conservation. These include policies on: Raptors, Cooperation, Endangered and Threatened Species, Land Use Planning, Management and Utilization of Fish and Wildlife on Federal Lands, Management and Utilization of Fish and Wildlife on Private Lands, and Research.

GUIDING PRINCIPLES FOR CONSERVATION

Unless otherwise provided in a statewide, local, or regional conservation strategy, surveying and evaluating impacts to burrowing owls, as well as developing and implementing avoidance, minimization, and mitigation and conservation measures incorporate the following principles. These principles are a summary of Department staff expert opinion and were used to guide the preparation of this document.

1. Use the Precautionary Principle (Noss et al.1997), by which the alternative of increased conservation is deliberately chosen in order to buffer against incomplete knowledge of burrowing owl ecology and uncertainty about the consequences to burrowing owls of potential impacts, including those that are cumulative.
2. Employ basic conservation biology tenets and population-level approaches when determining what constitutes appropriate avoidance, minimization, and mitigation for impacts. Include mitigation effectiveness monitoring and reporting, and use an adaptive management loop to modify measures based on results.
3. Protect and conserve owls in wild, semi-natural, and agricultural habitats (conserve is defined at FGC §1802).
4. Protect and conserve natural nest burrows (or burrow surrogates) previously used by burrowing owls and sufficient foraging habitat and protect auxiliary "satellite" burrows that contribute to burrowing owl survivorship and natural behavior of owls.

CONSERVATION GOALS FOR THE BURROWING OWL IN CALIFORNIA

It is Department staff expert opinion that the following goals guide and contribute to the short and long-term conservation of burrowing owls in California:

1. Maintain size and distribution of extant burrowing owl populations (allowing for natural population fluctuations).
2. Increase geographic distribution of burrowing owls into formerly occupied historical range where burrowing owl habitat still exists, or where it can be created or enhanced, and where the reason for its local disappearance is no longer of concern.
3. Increase size of existing populations where possible and appropriate (for example, considering basic ecological principles such as carrying capacity, predator-prey relationships, and inter-specific relationships with other species at risk).
4. Protect and restore self-sustaining ecosystems or natural communities which can support burrowing owls at a landscape scale, and which will require minimal long-term management.
5. Minimize or prevent unnatural causes of burrowing owl population declines (e.g., nest burrow destruction, chemical control of rodent hosts and prey).
6. Augment/restore natural dynamics of burrowing owl populations including movement and genetic exchange among populations, such that the species does not require future listing and protection under the California Endangered Species Act (CESA) and/or the federal Endangered Species Act (ESA).
7. Engage stakeholders, including ranchers; farmers; military; tribes; local, state, and federal agencies; non-governmental organizations; and scientific research and education communities involved in burrowing owl protection and habitat management.

ACTIVITIES WITH THE POTENTIAL TO TAKE OR IMPACT BURROWING OWLS

The following activities are examples of activities that have the potential to take burrowing owls, their nests or eggs, or destroy or degrade burrowing owl habitat: grading, disking, cultivation, earthmoving, burrow blockage, heavy equipment compacting and crushing burrow tunnels, levee maintenance, flooding, burning and mowing (if burrows are impacted), and operating wind turbine collisions (collectively hereafter referred to as "projects" or "activities"

whether carried out pursuant to CEQA or not). In addition, the following activities may have impacts to burrowing owl populations: eradication of host burrowers; changes in vegetation management (i.e. grazing); use of pesticides and rodenticides; destruction, conversion or degradation of nesting, foraging, over-wintering or other habitats; destruction of natural burrows and burrow surrogates; and disturbance which may result in harassment of owls at occupied burrows.

PROJECT IMPACT EVALUATIONS

The following three progressive steps are effective in evaluating whether projects will result in impacts to burrowing owls. The information gained from these steps will inform any subsequent avoidance, minimization and mitigation measures. The steps for project impact evaluations are: 1) habitat assessment, 2) surveys, and 3) impact assessment. Habitat assessments are conducted to evaluate the likelihood that a site supports burrowing owl. Burrowing owl surveys provide information needed to determine the potential effects of proposed projects and activities on burrowing owls, and to avoid take in accordance with FGC sections 86, 3503, and 3503.5. Impact assessments evaluate the extent to which burrowing owls and their habitat may be impacted, directly or indirectly, on and within a reasonable distance of a proposed CEQA project activity or non-CEQA project. These three site evaluation steps are discussed in detail below.

Biologist Qualifications

The current scientific literature indicates that only individuals meeting the following minimum qualifications should perform burrowing owl habitat assessments, surveys, and impact assessments:

1. Familiarity with the species and its local ecology;
2. Experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor;
3. Familiarity with the appropriate state and federal statutes related to burrowing owls, scientific research, and conservation;
4. Experience with analyzing impacts of development on burrowing owls and their habitat.

Habitat Assessment Data Collection and Reporting

A habitat assessment is the first step in the evaluation process and will assist investigators in determining whether or not occupancy surveys are needed. Refer to Appendix B for a definition of burrowing owl habitat. Compile the detailed information described in Appendix C when conducting project scoping, conducting a habitat assessment site visit and preparing a habitat assessment report.

Surveys

Burrowing owl surveys are the second step of the evaluation process and the best available scientific literature recommends that they be conducted whenever burrowing owl habitat or sign (see Appendix B) is encountered on or adjacent to (within 150 meters) a project site

(Thomsen 1971, Martin 1973). Occupancy of burrowing owl habitat is confirmed at a site when at least one burrowing owl, or its sign at or near a burrow entrance, is observed within the last three years (Rich 1984). Burrowing owls are more detectable during the breeding season with detection probabilities being highest during the nestling stage (Conway et al. 2008). In California, the burrowing owl breeding season extends from 1 February to 31 August (Haug et al. 1993, Thompsen 1971) with some variances by geographic location and climatic conditions. Several researchers suggest three or more survey visits during daylight hours (Haug and Diduik 1993, CBOC 1997, Conway and Simon 2003) and recommend each visit occur at least three weeks apart during the peak of the breeding season, commonly accepted in California as between 15 April and 15 July (CBOC 1997). Conway and Simon (2003) and Conway et al. (2008) recommended conducting surveys during the day when most burrowing owls in a local area are in the laying and incubation period (so as not to miss early breeding attempts), during the nesting period, and in the late nestling period when most owls are spending time above ground.

Non-breeding season (1 September to 31 January) surveys may provide information on burrowing owl occupancy, but do not substitute for breeding season surveys because results are typically inconclusive. Burrowing owls are more difficult to detect during the non-breeding season and their seasonal residency status is difficult to ascertain. Burrowing owls detected during non-breeding season surveys may be year-round residents, young from the previous breeding season, pre-breeding territorial adults, winter residents, dispersing juveniles, migrants, transients or new colonizers. In addition, the numbers of owls and their pattern of distribution may differ during winter and breeding seasons. However, on rare occasions, non-breeding season surveys may be warranted (i.e., if the site is believed to be a wintering site only based on negative breeding season results). Refer to Appendix D for information on breeding season and non-breeding season survey methodologies.

Survey Reports

Adequate information about burrowing owls present in and adjacent to an area that will be disturbed by a project or activity will enable the Department, reviewing agencies and the public to effectively assess potential impacts and will guide the development of avoidance, minimization, and mitigation measures. The survey report includes but is not limited to a description of the proposed project or proposed activity, including the proposed project start and end dates, as well as a description of disturbances or other activities occurring on-site or nearby. Refer to Appendix D for details included in a survey report.

Impact Assessment

The third step in the evaluation process is the impact assessment. When surveys confirm occupied burrowing owl habitat in or adjoining the project area, there are a number of ways to assess a project's potential significant impacts to burrowing owls and their habitat. Richardson and Miller (1997) recommended monitoring raptor behavior prior to developing management recommendations and buffers to determine the extent to which individuals have been sensitized to human disturbance. Monitoring results will also provide detail necessary for developing site-specific measures. Postovit and Postovit (1987) recommended an analytical approach to mitigation planning: define the problem (impact), set goals (to guide mitigation development), evaluate and select mitigation methods, and monitor the results.

Define the problem. The impact assessment evaluates all factors that could affect burrowing owls. Postovit and Postovit (1987) recommend evaluating the following in assessing impacts to raptors and planning mitigation: type and extent of disturbance, duration and timing of disturbance, visibility of disturbance, sensitivity and ability to habituate, and influence of environmental factors. They suggest identifying and addressing all potential direct and indirect impacts to burrowing owls, regardless of whether or not the impacts will occur during the breeding season. Several examples are given for each impact category below; however, examples are not intended to be used exclusively.

Type and extent of the disturbance. The impact assessment describes the nature (source) and extent (scale) of potential project impacts on occupied, satellite and unoccupied burrows including acreage to be lost (temporary or permanent), fragmentation/edge being created, increased distance to other nesting and foraging habitat, and habitat degradation. Discuss any project activities that impact either breeding and/or non-breeding habitat which could affect owl home range size and spatial configuration, negatively affect onsite and offsite burrowing owl presence, increase energetic costs, lower reproductive success, increase vulnerability to predation, and/or decrease the chance of procuring a mate.

Duration and timing of the impact. The impact assessment describes the amount of time the burrowing owl habitat will be unavailable to burrowing owls (temporary or permanent) on the site and the effect of that loss on essential behaviors or life history requirements of burrowing owls, the overlap of project activities with breeding and/or non-breeding seasons (timing of nesting and/or non-breeding activities may vary with latitude and climatic conditions, which should be considered with the timeline of the project or activity), and any variance of the project activities in intensity, scale and proximity relative to burrowing owl occurrences.

Visibility and sensitivity. Some individual burrowing owls or pairs are more sensitive than others to specific stimuli and may habituate to ongoing visual or audible disturbance. Site-specific monitoring may provide clues to the burrowing owl's sensitivities. This type of assessment addresses the sensitivity of burrowing owls within their nesting area to humans on foot, and vehicular traffic. Other variables are whether the site is primarily in a rural versus urban setting, and whether any prior disturbance (e.g., human development or recreation) is known at the site.

Environmental factors. The impact assessment discusses any environmental factors that could be influenced or changed by the proposed activities including nest site availability, predators, prey availability, burrowing mammal presence and abundance, and threats from other extrinsic factors such as human disturbance, urban interface, feral animals, invasive species, disease or pesticides.

Significance of impacts. The impact assessment evaluates the potential loss of nesting burrows, satellite burrows, foraging habitat, dispersal and migration habitat, wintering habitat, and habitat linkages, including habitat supporting prey and host burrowers and other essential habitat attributes. This assessment determines if impacts to the species will result in significant impacts to the species locally, regionally and range-wide per CEQA Guidelines §15382 and Appendix G. The significance of the impact to habitat depends on the extent of habitat disturbed and length of time the habitat is unavailable (for example: minor – several days, medium – several weeks to months, high - breeding season affecting juvenile survival,

or over winter affecting adult survival).

Cumulative effects. The cumulative effects assessment evaluates two consequences: 1) the project's proportional share of reasonably foreseeable impacts on burrowing owls and habitat caused by the project or in combination with other projects and local influences having impacts on burrowing owls and habitat, and 2) the effects on the regional owl population resulting from the project's impacts to burrowing owls and habitat.

Mitigation goals. Establishing goals will assist in planning mitigation and selecting measures that function at a desired level. Goals also provide a standard by which to measure mitigation success. Unless specifically provided for through other FGC Sections or through specific regulations, take, possession or destruction of individual burrowing owls, their nests and eggs is prohibited under FGC sections 3503, 3503.5 and 3513. Therefore, a required goal for all project activities is to avoid take of burrowing owls. Under CEQA, goals would consist of measures that would avoid, minimize and mitigate impacts to a less than significant level. For individual projects, mitigation must be roughly proportional to the level of impacts, including cumulative impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). In order for mitigation measures to be effective, they must be specific, enforceable, and feasible actions that will improve environmental conditions. As set forth in more detail in Appendix A, the current scientific literature supports the conclusion that mitigation for permanent habitat loss necessitates replacement with an equivalent or greater habitat area for breeding, foraging, wintering, dispersal, presence of burrows, burrow surrogates, presence of fossorial mammal dens, well drained soils, and abundant and available prey within close proximity to the burrow.

MITIGATION METHODS

The current scientific literature indicates that any site-specific avoidance or mitigation measures developed should incorporate the best practices presented below or other practices confirmed by experts and the Department. The Department is available to assist in the development of site-specific avoidance and mitigation measures.

Avoiding. A primary goal is to design and implement projects to seasonally and spatially avoid negative impacts and disturbances that could result in take of burrowing owls, nests, or eggs. Other avoidance measures may include but not be limited to:

- Avoid disturbing occupied burrows during the nesting period, from 1 February through 31 August.
- Avoid impacting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls.
- Avoid direct destruction of burrows through chaining (dragging a heavy chain over an area to remove shrubs), disking, cultivation, and urban, industrial, or agricultural development.
- Develop and implement a worker awareness program to increase the on-site worker's recognition of and commitment to burrowing owl protection.
- Place visible markers near burrows to ensure that farm equipment and other machinery does not collapse burrows.
- Do not fumigate, use treated bait or other means of poisoning nuisance animals in areas where burrowing owls are known or suspected to occur (e.g., sites observed with nesting

owls, designated use areas).
- Restrict the use of treated grain to poison mammals to the months of January and February.

Take avoidance (pre-construction) surveys. Take avoidance surveys are intended to detect the presence of burrowing owls on a project site at a fixed period in time and inform necessary take avoidance actions. Take avoidance surveys may detect changes in owl presence such as colonizing owls that have recently moved onto the site, migrating owls, resident burrowing owls changing burrow use, or young of the year that are still present and have not dispersed. Refer to Appendix D for take avoidance survey methodology.

Site surveillance. Burrowing owls may attempt to colonize or re-colonize an area that will be impacted; thus, the current scientific literature indicates a need for ongoing surveillance at the project site during project activities is recommended. The surveillance frequency/effort should be sufficient to detect burrowing owls if they return. Subsequent to their new occupancy or return to the site, take avoidance measures should assure with a high degree of certainty that take of owls will not occur.

Minimizing. If burrowing owls and their habitat can be protected in place on or adjacent to a project site, the use of buffer zones, visual screens or other measures while project activities are occurring can minimize disturbance impacts. Conduct site-specific monitoring to inform development of buffers (see Visibility and sensitivity above). The following general guidelines for implementing buffers should be adjusted to address site-specific conditions using the impact assessment approach described above. The CEQA lead agency and/or project proponent is encouraged to consult with the Department and other burrowing owl experts for assistance in developing site-specific buffer zones and visual screens.

Buffers. Holroyd et al. (2001) identified a need to standardize management and disturbance mitigation guidelines. For instance, guidelines for mitigating impacts by petroleum industries on burrowing owls and other prairie species (Scobie and Faminow, 2000) may be used as a template for future mitigation guidelines (Holroyd et al. 2001). Scobie and Faminow (2000) developed guidelines for activities around occupied burrowing owl nests recommending buffers around low, medium, and high disturbance activities, respectively (see below).

Recommended restricted activity dates and setback distances by level of disturbance for burrowing owls (Scobie and Faminow 2000).

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

Based on existing vegetation, human development, and land uses in an area, resource managers may decide to allow human development or resource extraction closer to these area/sites than recommended above. However, if it is decided to allow activities closer than

the setback distances recommended, a broad-scale, long-term, scientifically-rigorous monitoring program ensures that burrowing owls are not detrimentally affected by alternative approaches.

Other minimization measures include eliminating actions that reduce burrowing owl forage and burrowing surrogates (e.g. ground squirrel), or introduce/facilitate burrowing owl predators. Actions that could influence these factors include reducing livestock grazing rates and/or changing the timing or duration of grazing or vegetation management that could result in less suitable habitat.

Burrow exclusion and closure. Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls, or permanently exclude burrowing owls and close burrows after verifying burrows are empty by site monitoring and scoping. Exclusion in and of itself is not a take avoidance, minimization or mitigation method. Eviction of burrowing owls is a potentially significant impact under CEQA.

The long-term demographic consequences of these techniques have not been thoroughly evaluated, and the fate of evicted or excluded burrowing owls has not been systematically studied. Because burrowing owls are dependent on burrows at all times of the year for survival and/or reproduction, evicting them from nesting, roosting, and satellite burrows may lead to indirect impacts or take. Temporary or permanent closure of burrows may result in significant loss of burrows and habitat for reproduction and other life history requirements. Depending on the proximity and availability of alternate habitat, loss of access to burrows will likely result in varying levels of increased stress on burrowing owls and could depress reproduction, increase predation, increase energetic costs, and introduce risks posed by having to find and compete for available burrows. Therefore, exclusion and burrow closure are not recommended where they can be avoided. The current scientific literature indicates consideration of all possible avoidance and minimization measures before temporary or permanent exclusion and closure of burrows is implemented, in order to avoid take.

The results of a study by Trulio (1995) in California showed that burrowing owls passively displaced from their burrows were quickly attracted to adjacent artificial burrows at five of six passive relocation sites. The successful sites were all within 75 meters (m) of the destroyed burrow, a distance generally within a pair's territory. This researcher discouraged using passive relocation to artificial burrows as a mitigation measure for lost burrows without protection of adjacent foraging habitat. The study results indicated artificial burrows were used by evicted burrowing owls when they were approximately 50-100 m from the natural burrow (Thomsen 1971, Haug and Oliphant 1990). Locating artificial or natural burrows more than 100 m from the eviction burrow may greatly reduce the chances that new burrows will be used. Ideally, exclusion and burrow closure is employed only where there are adjacent natural burrows and non-impacted, sufficient habitat for burrowing owls to occupy with permanent protection mechanisms in place. Any new burrowing owl colonizing the project site after the CEQA document has been adopted may constitute changed circumstances that should be addressed in a re-circulated CEQA document.

The current scientific literature indicates that burrow exclusion should only be conducted by qualified biologists (meeting the Biologist's Qualifications above) during the non-breeding

season, before breeding behavior is exhibited and after the burrow is confirmed empty by site surveillance and/or scoping. The literature also indicates that when temporary or permanent burrow exclusion and/or burrow closure is implemented, burrowing owls should not be excluded from burrows unless or until:

- A Burrowing Owl Exclusion Plan (see Appendix E) is developed and approved by the applicable local DFG office;
- Permanent loss of occupied burrow(s) and habitat is mitigated in accordance with the Mitigating Impacts sections below. Temporary exclusion is mitigated in accordance with the item #1 under Mitigating Impacts below.
- Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows sufficient to ensure take is avoided. Conduct daily monitoring for one week to confirm young of the year have fledged if the exclusion will occur immediately after the end of the breeding season.
- Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band re-sight).

Translocation (Active relocation offsite >100 meters). At this time, there is little published information regarding the efficacy of translocating burrowing owls, and additional research is needed to determine subsequent survival and breeding success (Klute et al. 2003, Holroyd et al. 2001). Study results for translocation in Florida implied that hatching success may be decreased for populations of burrowing owls that undergo translocation (Nixon 2006). At this time, the Department is unable to authorize the capture and relocation of burrowing owls except within the context of scientific research (FGC §1002) or a NCCP conservation strategy.

Mitigating impacts. Habitat loss and degradation from rapid urbanization of farmland in the core areas of the Central and Imperial valleys is the greatest of many threats to burrowing owls in California (Shuford and Gardali, 2008). At a minimum, if burrowing owls have been documented to occupy burrows (see Definitions, Appendix B) at the project site in recent years, the current scientific literature supports the conclusion that the site should be considered occupied and mitigation should be required by the CEQA lead agency to address project-specific significant and cumulative impacts. Other site-specific and regionally significant and cumulative impacts may warrant mitigation. The current scientific literature indicates the following to be best practices. If these best practices cannot be implemented, the lead agency or lead investigator may consult with the Department to develop effective mitigation alternatives. The Department is also available to assist in the identification of suitable mitigation lands.

1. Where habitat will be temporarily disturbed, restore the disturbed area to pre-project condition including decompacting soil and revegetating. Permanent habitat protection may be warranted if there is the potential that the temporary impacts may render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable depending on the time frame, resulting in reduced survival or abandonment. For the latter potential impact, see the permanent impact measures below.
2. Mitigate for permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on the information provided in Appendix A. Note: A

minimum habitat replacement recommendation is not provided here as it has been shown to serve as a default, replacing any site-specific analysis and discounting the wide variation in natal area, home range, foraging area, and other factors influencing burrowing owls and burrowing owl population persistence in a particular area.

3. Mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owl habitat with (a) permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals. The mitigation lands may require habitat enhancements including enhancement or expansion of burrows for breeding, shelter and dispersal opportunity, and removal or control of population stressors. If the mitigation lands are located adjacent to the impacted burrow site, ensure the nearest neighbor artificial or natural burrow clusters are at least within 210 meters (Fisher et al. 2007).
4. Permanently protect mitigation land through a conservation easement deeded to a non-profit conservation organization or public agency with a conservation mission, for the purpose of conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use. If the project is located within the service area of a Department-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits.
5. Develop and implement a mitigation land management plan to address long-term ecological sustainability and maintenance of the site for burrowing owls (see Management Plan and Artificial Burrow sections below, if applicable).
6. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.
7. Habitat should not be altered or destroyed, and burrowing owls should not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to Department-approved management, monitoring and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.
8. Mitigation lands should be on, adjacent or proximate to the impact site where possible and where habitat is sufficient to support burrowing owls present.
9. Where there is insufficient habitat on, adjacent to, or near project sites where burrowing owls will be excluded, acquire mitigation lands with burrowing owl habitat away from the project site. The selection of mitigation lands should then focus on consolidating and enlarging conservation areas located outside of urban and planned growth areas, within foraging distance of other conserved lands. If mitigation lands are not available adjacent to other conserved lands, increase the mitigation land acreage requirement to ensure a selected site is of sufficient size. Offsite mitigation may not adequately offset the biological and habitat values impacted on a one to one basis. Consult with the Department when determining offsite mitigation acreages.
10. Evaluate and select suitable mitigation lands based on a comparison of the habitat attributes of the impacted and conserved lands, including but not limited to: type and structure of habitat being impacted or conserved; density of burrowing owls in impacted and conserved habitat; and significance of impacted or conserved habitat to the species range-wide. Mitigate for the highest quality burrowing owl habitat impacted first and foremost when identifying mitigation lands, even if a mitigation site is located outside of

a lead agency's jurisdictional boundary, particularly if the lead agency is a city or special district.

11. Select mitigation lands taking into account the potential human and wildlife conflicts or incompatibility, including but not limited to, human foot and vehicle traffic, and predation by cats, loose dogs and urban-adapted wildlife, and incompatible species management (i.e., snowy plover).
12. Where a burrowing owl population appears to be highly adapted to heavily altered habitats such as golf courses, airports, athletic fields, and business complexes, permanently protecting the land, augmenting the site with artificial burrows, and enhancing and maintaining those areas may enhance sustainability of the burrowing owl population onsite. Maintenance includes keeping lands grazed or mowed with weed-eaters or push mowers, free from trees and shrubs, and preventing excessive human and human-related disturbance (e.g., walking, jogging, off-road activity, dog-walking) and loose and feral pets (chasing and, presumably, preying upon owls) that make the environment uninhabitable for burrowing owls (Wesemann and Rowe 1985, Millsap and Bear 2000, Lincer and Bloom 2007). Items 4, 5 and 6 also still apply to this mitigation approach.
13. If there are no other feasible mitigation options available and a lead agency is willing to establish and oversee a Burrowing Owl Mitigation and Conservation Fund that funds on a competitive basis acquisition and permanent habitat conservation, the project proponent may participate in the lead agency's program.

Artificial burrows. Artificial burrows have been used to replace natural burrows either temporarily or long-term and their long-term success is unclear. Artificial burrows may be an effective addition to in-perpetuity habitat mitigation if they are augmenting natural burrows, the burrows are regularly maintained (i.e., no less than annual, with biennial maintenance recommended), and surrounding habitat patches are carefully maintained. There may be some circumstances, for example at airports, where squirrels will not be allowed to persist and create a dynamic burrow system, where artificial burrows may provide some support to an owl population.

Many variables may contribute to the successful use of artificial burrows by burrowing owls, including pre-existence of burrowing owls in the area, availability of food, predators, surrounding vegetation and proximity, number of natural burrows in proximity, type of materials used to build the burrow, size of the burrow and entrance, direction in which the burrow entrance is facing, slope of the entrance, number of burrow entrances per burrow, depth of the burrow, type and height of perches, and annual maintenance needs (Belthoff and King 2002, Smith et al. 2005, Barclay et al. 2011). Refer to Barclay (2008) and (2011) and to Johnson et al. 2010 (unpublished report) for guidance on installing artificial burrows including recommendations for placement, installation and maintenance.

Any long-term reliance on artificial burrows as natural burrow replacements must include semi-annual to annual cleaning and maintenance and/or replacement (Barclay et al. 2011, Smith and Conway 2005, Alexander et al. 2005) as an ongoing management practice. Alexander et al. (2005), in a study of the use of artificial burrows found that all of 20 artificial burrows needed some annual cleaning and maintenance. Burrows were either excavated by predators, blocked by soil or vegetation, or experienced substrate erosion forming a space beneath the tubing that prevented nestlings from re-entering the burrow.

Mitigation lands management plan. Develop a Mitigation Lands Management Plan for projects that require off-site or on-site mitigation habitat protection to ensure compliance with and effectiveness of identified management actions for the mitigation lands. A suggested outline and related vegetation management goals and monitoring success criteria can be found in Appendix E.

Mitigation Monitoring and Reporting

Verify the compliance with required mitigation measures, the accuracy of predictions, and ensure the effectiveness of all mitigation measures for burrowing owls by conducting follow-up monitoring, and implementing midcourse corrections, if necessary, to protect burrowing owls. Refer to CEQA Guidelines Section 15097 and the CEQA Guidelines for additional guidance on mitigation, monitoring and reporting. Monitoring is qualitatively different from site surveillance; monitoring normally has a specific purpose and its outputs and outcomes will usually allow a comparison with some baseline condition of the site before the mitigation (including avoidance and minimization) was undertaken. Ideally, monitoring should be based on the Before-After Control-Impact (BACI) principle (McDonald et al. 2000) that requires knowledge of the pre-mitigation state to provide a reference point for the state and change in state after the project and mitigation have been implemented.

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Appendix A. Burrowing Owl Natural History and Threats

Diet

Burrowing owl diet includes arthropods, small rodents, birds, amphibians, reptiles, and carrion (Haug et al. 1993).

Breeding

In California, the breeding season for the burrowing owl typically occurs between 1 February and 31 August although breeding in December has been documented (Thompson 1971, Gervais et al. 2008); breeding behavior includes nest site selection by the male, pair formation, copulation, egg laying, hatching, fledging, and post-fledging care of young by the parents. The peak of the breeding season occurs between 15 April and 15 July and is the period when most burrowing owls have active nests (eggs or young). The incubation period lasts 29 days (Coulombe 1971) and young fledge after 44 days (Haug et al. 1993). Note that the timing of nesting activities may vary with latitude and climatic conditions. Burrowing owls may change burrows several times during the breeding season, starting when nestlings are about three weeks old (Haug et al. 1993).

Dispersal

The following discussion is an excerpt from Gervais et al (2008):

> "The burrowing owl is often considered a sedentary species (e.g., Thomsen 1971). A large proportion of adults show strong fidelity to their nest site from year to year, especially where resident, as in Florida (74% for females, 83% for males; Millsap and Bear 1997). In California, nest-site fidelity rates were 32%–50% in a large grassland and 57% in an agricultural environment (Ronan 2002, Catlin 2004, Catlin et al. 2005). Differences in these rates among sites may reflect differences in nest predation rates (Catlin 2004, Catlin et al. 2005). Despite the high nest fidelity rates, dispersal distances may be considerable for both juveniles (natal dispersal) and adults (postbreeding dispersal), but this also varied with location (Catlin 2004, Rosier et al. 2006). Distances of 53 km to roughly 150 km have been observed in California for adult and natal dispersal, respectively (D. K. Rosenberg and J. A. Gervais, unpublished data), despite the difficulty in detecting movements beyond the immediate study area (Koenig et al. 1996)."

Habitat

The burrowing owl is a small, long-legged, ground-dwelling bird species, well-adapted to open, relatively flat expanses. In California, preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography and well-drained soils (Haug et al. 1993). Grassland, shrub steppe, and desert are naturally occurring habitat types used by the species. In addition, burrowing owls may occur in some agricultural areas, ruderal grassy fields, vacant lots and pastures if the vegetation structure is suitable and there are useable burrows and foraging habitat in proximity (Gervais et al 2008). Unique amongst North

American raptors, the burrowing owl requires underground burrows or other cavities for nesting during the breeding season and for roosting and cover, year round. Burrows used by the owls are usually dug by other species termed host burrowers. In California, California ground squirrel (*Spermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) burrows are frequently used by burrowing owls but they may use dens or holes dug by other fossorial species including badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (e.g., San Joaquin kit fox, *Vulpes macrotis mutica*; Ronan 2002). In some instances, owls have been known to excavate their own burrows (Thompson 1971, Barclay 2007). Natural rock cavities, debris piles, culverts, and pipes also are used for nesting and roosting (Rosenberg et al. 1998). Burrowing owls have been documented using artificial burrows for nesting and cover (Smith and Belthoff, 2003).

Foraging habitat. Foraging habitat is essential to burrowing owls. The following discussion is an excerpt from Gervais et al. (2008):

> "Useful as a rough guide to evaluating project impacts and appropriate mitigation for burrowing owls, adult male burrowing owls home ranges have been documented (calculated by minimum convex polygon) to comprise anywhere from 280 acres in intensively irrigated agroecosystems in Imperial Valley (Rosenberg and Haley 2004) to 450 acres in mixed agricultural lands at Lemoore Naval Air Station, CA (Gervais et al. 2003), to 600 acres in pasture in Saskatchewan, Canada (Haug and Oliphant 1990). But owl home ranges may be much larger, perhaps by an order of magnitude, in non-irrigated grasslands such as at Carrizo Plain, California (Gervais et al. 2008), based on telemetry studies and distribution of nests. Foraging occurs primarily within 600 m of their nests (within approximately 300 acres, based on a circle with a 600 m radius) during the breeding season."

Importance of burrows and adjacent habitat. Burrows and the associated surrounding habitat are essential ecological requisites for burrowing owls throughout the year and especially during the breeding season. During the non-breeding season, burrowing owls remain closely associated with burrows, as they continue to use them as refuge from predators, shelter from weather and roost sites. Resident populations will remain near the previous season's nest burrow at least some of the time (Coulombe 1971, Thomsen 1971, Botelho 1996, LaFever et al. 2008).

In a study by Lutz and Plumpton (1999) adult males and females nested in formerly used sites at similar rates (75% and 63%, respectively) (Lutz and Plumpton 1999). Burrow fidelity has been reported in some areas; however, more frequently, burrowing owls reuse traditional nesting areas without necessarily using the same burrow (Haug et al. 1993, Dechant et al. 1999). Burrow and nest sites are re-used at a higher rate if the burrowing owl has reproduced successfully during the previous year (Haug et al. 1993) and if the number of burrows isn't limiting nesting opportunity.

Burrowing owls may use "satellite" or non-nesting burrows, moving young at 10-14 days, presumably to reduce risk of predation (Desmond and Savidge 1998) and possibly to avoid nest parasites (Dechant et al. 1999). Successful nests in Nebraska had more active satellite burrows within 75 m of the nest burrow than unsuccessful nests (Desmond and Savidge

1999). Several studies have documented the number of satellite burrows used by young and adult burrowing owls during the breeding season as between one and 11 burrows with an average use of approximately five burrows (Thompsen 1984, Haug 1985, Haug and Oliphant 1990). Supporting the notion of selecting for nest sites near potential satellite burrows, Ronan (2002) found burrowing owl families would move away from a nest site if their satellite burrows were experimentally removed through blocking their entrance.

Habitat adjacent to burrows has been documented to be important to burrowing owls. Gervais et al. (2003) found that home range sizes of male burrowing owls during the nesting season were highly variable within but not between years. Their results also suggested that owls concentrate foraging efforts within 600 meters of the nest burrow, as was observed in Canada (Haug and Oliphant 1990) and southern California (Rosenberg and Haley 2004). James et al. (1997), reported habitat modification factors causing local burrowing owl declines included habitat fragmentation and loss of connectivity.

In conclusion, the best available science indicates that essential habitat for the burrowing owl in California must include suitable year-round habitat, primarily for breeding, foraging, wintering and dispersal habitat consisting of short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey within close proximity to the burrow.

Threats to Burrowing Owls in California

Habitat loss. Habitat loss, degradation, and fragmentation are the greatest threats to burrowing owls in California. According to DeSante et al. (2007), "the vast majority of burrowing owls [now] occur in the wide, flat lowland valleys and basins of the Imperial Valley and Great Central Valley [where] for the most part,...the highest rates of residential and commercial development in California are occurring." Habitat loss from the State's long history of urbanization in coastal counties has already resulted in either extirpation or drastic reduction of burrowing owl populations there (Gervais et al. 2008). Further, loss of agricultural and other open lands (such as grazed landscapes) also negatively affect owl populations. Because of their need for open habitat with low vegetation, burrowing owls are unlikely to persist in agricultural lands dominated by vineyards and orchards (Gervais et al. 2008).

Control of burrowing rodents. According to Klute et al. (2003), the elimination of burrowing rodents through control programs is a primary factor in the recent and historical decline of burrowing owl populations nationwide. In California, ground squirrel burrows are most often used by burrowing owls for nesting and cover; thus, ground squirrel control programs may affect owl numbers in local areas by eliminating a necessary resource.

Direct mortality. Burrowing owls suffer direct losses from a number of sources. Vehicle collisions are a significant source of mortality especially in the urban interface and where owls nest alongside roads (Haug et al. 1993, Gervais et al. 2008). Road and ditch maintenance, modification of water conveyance structures (Imperial Valley) and discing to control weeds in fallow fields may destroy burrows (Rosenberg and Haley 2004, Catlin and Rosenberg 2006) which may trap or crush owls. Wind turbines at Altamont Pass Wind Resource Area are known to cause direct burrowing owl mortality (Thelander et al. 2003). Exposure to

pesticides may pose a threat to the species but is poorly understood (Klute et al. 2003, Gervais et al. 2008).

Appendix B. Definitions

Some key terms that appear in this document are defined below.

Adjacent habitat means burrowing owl habitat that abuts the area where habitat and burrows will be impacted and rendered non-suitable for occupancy.

Breeding (nesting) season begins as early as 1 February and continues through 31 August (Thomsen 1971, Zarn 1974). The timing of breeding activities may vary with latitude and climatic conditions. The breeding season includes pairing, egg-laying and incubation, and nestling and fledging stages.

Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owls or permanently exclude burrowing owls and excavate and close burrows after confirming burrows are empty.

Burrowing owl habitat generally includes, but is not limited to, short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey.

Burrow surrogates include culverts, piles of concrete rubble, piles of soil, burrows created along soft banks of ditches and canals, pipes, and similar structures.

Civil twilight - Morning civil twilight begins when the geometric center of the sun is 6 degrees below the horizon (civil dawn) and ends at sunrise. Evening civil twilight begins at sunset and ends when the geometric center of the sun reaches 6 degrees below the horizon (civil dusk). During this period there is enough light from the sun that artificial sources of light may not be needed to carry on outdoor activities. This concept is sometimes enshrined in laws, for example, when drivers of automobiles must turn on their headlights (called lighting-up time in the UK); when pilots may exercise the rights to fly aircraft. Civil twilight can also be described as the limit at which twilight illumination is sufficient, under clear weather conditions, for terrestrial objects to be clearly distinguished; at the beginning of morning civil twilight, or end of evening civil twilight, the horizon is clearly defined and the brightest stars are visible under clear atmospheric conditions.

Conservation for burrowing owls may include but may not be limited to protecting remaining breeding pairs or providing for population expansion, protecting and enhancing breeding and essential habitat, and amending or augmenting land use plans to stabilize populations and other specific actions to avoid the need to list the species pursuant to California or federal Endangered Species Acts.

Contiguous means connected together so as to form an uninterrupted expanse in space.

Essential habitat includes nesting, foraging, wintering, and dispersal habitat.

Foraging habitat is habitat within the estimated home range of an occupied burrow, supports suitable prey base, and allows for effective hunting.

Host burrowers include ground squirrels, badgers, foxes, coyotes, gophers etc.

Locally significant species is a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or occurring in a unique habitat type.

Non-breeding season is the period of time when nesting activity is not occurring, generally September 1 through January 31, but may vary with latitude and climatic conditions.

Occupied site or occupancy means a site that is assumed occupied if at least one burrowing owl has been observed occupying a burrow within the last three years (Rich 1984). Occupancy of suitable burrowing owl habitat may also be indicated by owl sign including its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance or perch site.

Other impacting activities may include but may not be limited to agricultural practices, vegetation management and fire control, pest management, conversion of habitat from rangeland or natural lands to more intensive agricultural uses that could result in “take”. These impacting activities may not meet the definition of a project under CEQA.

Passive relocation is a technique of installing one-way doors in burrow openings to temporarily or permanently evict burrowing owls and prevent burrow re-occupation.

Peak of the breeding season is between 15 April and 15 July.

Sign includes its tracks, molted feathers, cast pellets (defined as 1-2” long brown to black regurgitated pellets consisting of non-digestible portions of the owls’ diet, such as fur, bones, claws, beetle elytra, or feathers), prey remains, egg shell fragments, owl white wash, nest burrow decoration materials (e.g., paper, foil, plastic items, livestock or other animal manure, etc.), possible owl perches, or other items.

Appendix C. Habitat Assessment and Reporting Details

Habitat Assessment Data Collection and Reporting

Current scientific literature indicates that it would be most effective to gather the data in the manner described below when conducting project scoping, conducting a habitat assessment site visit and preparing a habitat assessment report:

1. Conduct at least one visit covering the entire potential project/activity area including areas that will be directly or indirectly impacted by the project. Survey adjoining areas within 150 m (Thomsen 1971, Martin 1973), or more where direct or indirect effects could potentially extend offsite. If lawful access cannot be achieved to adjacent areas, surveys can be performed with a spotting scope or other methods.
2. Prior to the site visit, compile relevant biological information for the site and surrounding area to provide a local and regional context.
3. Check all available sources for burrowing owl occurrence information regionally prior to a field inspection. The CNDDB and BIOS (see References cited) may be consulted for known occurrences of burrowing owls. Other sources of information include, but are not limited to, the Proceedings of the California Burrowing Owl Symposium (Barclay et al. 2007), county bird atlas projects, Breeding Bird Survey records, eBIRD (http://ebird.org), Gervais et al. (2008), local reports or experts, museum records, and other site-specific relevant information.
4. Identify vegetation and habitat types potentially supporting burrowing owls in the project area and vicinity.
5. Record and report on the following information:
    a. A full description of the proposed project, including but not limited to, expected work periods, daily work schedules, equipment used, activities performed (such as drilling, construction, excavation, etc.) and whether the expected activities will vary in location or intensity over the project's timeline;
    b. A regional setting map, showing the general project location relative to major roads and other recognizable features;
    c. A detailed map (preferably a USGS topo 7.5' quad base map) of the site and proposed project, including the footprint of proposed land and/or vegetation-altering activities, base map source, identifying topography, landscape features, a north arrow, bar scale, and legend;
    d. A written description of the biological setting, including location (Section, Township, Range, baseline and meridian), acreage, topography, soils, geographic and hydrologic characteristics, land use and management history on and adjoining the site (i.e., whether it is urban, semi-urban or rural; whether there is any evidence of past or current livestock grazing, mowing, disking, or other vegetation management activities);
    e. An analysis of any relevant, historical information concerning burrowing owl use or occupancy (breeding, foraging, over-wintering) on site or in the assessment area;
    f. Vegetation type and structure (using Sawyer et al. 2009), vegetation height, habitat types and features in the surrounding area plus a reasonably sized (as supported with logical justification) assessment area; (Note: use caution in discounting habitat based on grass height as it can be a temporary condition variable by season and conditions (such as current grazing regime) or may be distributed as a mosaic).

g. The presence of burrowing owl individuals or pairs or sign (see Appendix B);
h. The presence of suitable burrows and/or burrow surrogates (>11 cm in diameter (height and width) and >150 cm in depth) (Johnson et al. 2010), regardless of a lack of any burrowing owl sign and/or burrow surrogates; and burrowing owls and/or their sign that have recently or historically (within the last 3 years) been identified on or adjacent to the site.

Appendix D. Breeding and Non-breeding Season Surveys and Reports

Current scientific literature indicates that it is most effective to conduct breeding and non-breeding season surveys and report in the manner that follows:

Breeding Season Surveys

Number of visits and timing. Conduct 4 survey visits: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. Note: many burrowing owl migrants are still present in southwestern California during mid-March, therefore, exercise caution in assuming breeding occupancy early in the breeding season.

Survey method. Rosenberg et al. (2007) confirmed walking line transects were most effective in smaller habitat patches. Conduct surveys in all portions of the project site that were identified in the Habitat Assessment and fit the description of habitat in Appendix A. Conduct surveys by walking straight-line transects spaced 7 m to 20 m apart, adjusting for vegetation height and density (Rosenberg et al. 2007). At the start of each transect and, at least, every 100 m, scan the entire visible project area for burrowing owls using binoculars. During walking surveys, record all potential burrows used by burrowing owls as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Some burrowing owls may be detected by their calls, so observers should also listen for burrowing owls while conducting the survey.

Care should be taken to minimize disturbance near occupied burrows during all seasons and not to "flush" burrowing owls especially if predators are present to reduce any potential for needless energy expenditure or burrowing owl mortality. Burrowing owls may flush if approached by pedestrians within 50 m (Conway et al. 2003). If raptors or other predators are present that may suppress burrowing owl activity, return at another time or later date for a follow-up survey.

Check all burrowing owls detected for bands and/or color bands and report band combinations to the Bird Banding Laboratory (BBL). Some site-specific variations to survey methods discussed below may be developed in coordination with species experts and Department staff.

Weather conditions. Poor weather may affect the surveyor's ability to detect burrowing owls, therefore, avoid conducting surveys when wind speed is >20 km/hr, and there is precipitation or dense fog. Surveys have greater detection probability if conducted when ambient temperatures are >20º C, <12 km/hr winds, and cloud cover is <75% (Conway et al. 2008).

Time of day. Daily timing of surveys varies according to the literature, latitude, and survey method. However, surveys between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight provide the highest detection probabilities (Barclay pers. comm. 2012, Conway et al. 2008).

Alternate methods. If the project site is large enough to warrant an alternate method, consult current literature for generally accepted survey methods and consult with the Department on the proposed survey approach.

Additional breeding season site visits. Additional breeding season site visits may be necessary, especially if non-breeding season exclusion methods are contemplated. Detailed information, such as approximate home ranges of each individual or of family units, as well as foraging areas as related to the proposed project, will be important to document for evaluating impacts, planning avoidance measure implementation and for mitigation measure performance monitoring.

Adverse conditions may prevent investigators from determining presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owls in any given year. Any such conditions should be identified and discussed in the survey report. Visits to the site in more than one year may increase the likelihood of detection. Also, visits to adjacent known occupied habitat may help determine appropriate survey timing.

Given the high site fidelity shown by burrowing owls (see Appendix A, Importance of burrows), conducting surveys over several years may be necessary when project activities are ongoing, occur annually, or start and stop seasonally. (See Negative surveys).

Non-breeding Season Surveys

If conducting non-breeding season surveys, follow the methods described above for breeding season surveys, but conduct at least four (4) visits, spread evenly, throughout the non-breeding season. Burrowing owl experts and local Department staff are available to assist with interpreting results.

Negative Surveys

Adverse conditions may prevent investigators from documenting presence or occupancy. Disease, predation, drought, high rainfall or site disturbance may preclude presence of burrowing owl in any given year. Discuss such conditions in the Survey Report. Visits to the site in more than one year increase the likelihood of detection and failure to locate burrowing owls during one field season does not constitute evidence that the site is no longer occupied, particularly if adverse conditions influenced the survey results. Visits to other nearby known occupied sites can affirm whether the survey timing is appropriate.

Take Avoidance Surveys

Field experience from 1995 to present supports the conclusion that it would be effective to complete an initial take avoidance survey no less than 14 days prior to initiating ground disturbance activities using the recommended methods described in the Detection Surveys section above. Implementation of avoidance and minimization measures would be triggered by positive owl presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls.

Burrowing owls may re-colonize a site after only a few days. Time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance.

Survey Reports

Report on the survey methods used and results including the information described in the Summary Report and include the reports within the CEQA documentation:

1. Date, start and end time of surveys including weather conditions (ambient temperature, wind speed, percent cloud cover, precipitation and visibility);
2. Name(s) of surveyor(s) and qualifications;
3. A discussion of how the timing of the survey affected the comprehensiveness and detection probability;
4. A description of survey methods used including transect spacing, point count dispersal and duration, and any calls used;
5. A description and justification of the area surveyed relative to the project area;
6. A description that includes: number of owls or nesting pairs at each location (by nestlings, juveniles, adults, and those of an unknown age), number of burrows being used by owls, and burrowing owl sign at burrows. Include a description of individual markers, such as bands (numbers and colors), transmitters, or unique natural identifying features. If any owls are banded, request documentation from the BBL and bander to report on the details regarding the known history of the banded burrowing owl(s) (age, sex, origins, whether it was previously relocated) and provide with the report if available;
7. A description of the behavior of burrowing owls during the surveys, including feeding, resting, courtship, alarm, territorial defense, and those indicative of parents or juveniles;
8. A list of possible burrowing owl predators present and documentation of any evidence of predation of owls;
9. A detailed map (1:24,000 or closer to show details) showing locations of all burrowing owls, potential burrows, occupied burrows, areas of concentrated burrows, and burrowing owl sign. Locations documented by use of global positioning system (GPS) coordinates must include the datum in which they were collected. The map should include a title, north arrow, bar scale and legend;
10. Signed field forms, photos, etc., as appendices to the field survey report;
11. Recent color photographs of the proposed project or activity site; and
12. Original CNDDB Field Survey Forms should be sent directly to the Department's CNDDB office, and copies should be included in the environmental document as an appendix. (http://www.dfg.ca.gov/bdb/html/cnddb.html).

Appendix E. Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans

Whereas the Department does not recommend exclusion and burrow closure, current scientific literature and experience from 1995 to present, indicate that the following example components for burrowing owl artificial burrow and exclusion plans, combined with consultation with the Department to further develop these plans, would be effective.

Artificial Burrow Location

If a burrow is confirmed occupied on-site, artificial burrow locations should be appropriately located and their use should be documented taking into consideration:

1. A brief description of the project and project site pre-construction;
2. The mitigation measures that will be implemented;
3. Potential conflicting site uses or encumbrances;
4. A comparison of the occupied burrow site(s) and the artificial burrow site(s) (e.g., vegetation, habitat types, fossorial species use in the area, and other features);
5. Artificial burrow(s) proximity to the project activities, roads and drainages;
6. Artificial burrow(s) proximity to other burrows and entrance exposure;
7. Photographs of the site of the occupied burrow(s) and the artificial burrows;
8. Map of the project area that identifies the burrow(s) to be excluded as well as the proposed sites for the artificial burrows;
9. A brief description of the artificial burrow design;
10. Description of the monitoring that will take place during and after project implementation including information that will be provided in a monitoring report.
11. A description of the frequency and type of burrow maintenance.

Exclusion Plan

An Exclusion Plan addresses the following including but not limited to:

1. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
2. Type of scope and appropriate timing of scoping to avoid impacts;
3. Occupancy factors to look for and what will guide determination of vacancy and excavation timing (one-way doors should be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily and monitored for evidence that owls are inside and can't escape i.e., look for sign immediately inside the door).
4. How the burrow(s) will be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);
5. Removal of other potential owl burrow surrogates or refugia on site;
6. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;

7. Monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take;
8. How the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.

Appendix F. Mitigation Management Plan and Vegetation Management Goals

Mitigation Management Plan

A mitigation site management plan will help ensure the appropriate implementation and maintenance for the mitigation site and persistence of the burrowing owls on the site. For an example to review, refer to Rosenberg et al. (2009). The current scientific literature and field experience from 1995 to present indicate that an effective management plan includes the following:

1. Mitigation objectives;
2. Site selection factors (including a comparison of the attributes of the impacted and conserved lands) and baseline assessment;
3. Enhancement of the conserved lands (enhancement of reproductive capacity, enhancement of breeding areas and dispersal opportunities, and removal or control of population stressors);
4. Site protection method and prohibited uses;
5. Site manager roles and responsibilities;
6. Habitat management goals and objectives:
    a. Vegetation management goals,
        i. Vegetation management tools:
            1. Grazing
            2. Mowing
            3. Burning
            4. Other
    b. Management of ground squirrels and other fossorial mammals,
    c. Semi-annual and annual artificial burrow cleaning and maintenance,
    d. Non-natives control – weeds and wildlife,
    e. Trash removal;
7. Financial assurances:
    a. Property analysis record or other financial analysis to determine long-term management funding,
    b. Funding schedule;
8. Performance standards and success criteria;
9. Monitoring, surveys and adaptive management;
10. Maps;
11. Annual reports.

Vegetation Management Goals

- Manage vegetation height and density (especially in immediate proximity to burrows). Suitable vegetation structure varies across sites and vegetation types, but should generally be at the average effective vegetation height of 4.7 cm (Green and Anthony 1989) and <13 cm average effective vegetation height (MacCracken et al. 1985*a)*.
- Employ experimental prescribed fires (controlled, at a small scale) to manage vegetation structure;

- Vegetation reduction or ground disturbance timing, extent, and configuration should avoid take. While local ordinances may require fire prevention through vegetation management, activities like disking, mowing, and grading during the breeding season can result in take of burrowing owls and collapse of burrows, causing nest destruction. Consult the take avoidance surveys section above for pre-management avoidance survey recommendations;
- Promote natural prey distribution and abundance, especially in proximity to occupied burrows; and
- Promote self-sustaining populations of host burrowers by limiting or prohibiting lethal rodent control measures and by ensuring food availability for host burrowers through vegetation management.

Refer to Rosenberg et al. (2009) for a good discussion of managing grasslands for burrowing owls.

Mitigation Site Success Criteria

In order to evaluate the success of mitigation and management strategies for burrowing owls, monitoring is required that is specific to the burrowing owl management plan. Given limited resources, Barclay et al. (2011) suggests managers focus on accurately estimating annual adult owl populations rather than devoting time to estimating reproduction, which shows high annual variation and is difficult to accurately estimate. Therefore, the key objective will be to determine accurately the number of adult burrowing owls and pairs, and if the numbers are maintained. A frequency of 5-10 years for surveys to estimate population size may suffice if there are no changes in the management of the nesting and foraging habitat of the owls.

Effective monitoring and evaluation of off-site and on-site mitigation management success for burrowing owls includes (Barclay, pers. comm.):

- Site tenacity;
- Number of adult owls present and reproducing;
- Colonization by burrowing owls from elsewhere (by band re-sight);
- Evidence and causes of mortality;
- Changes in distribution; and
- Trends in stressors.

Appendix A-5
Least Bell's Vireo

U.S. Fish and Wildlife Service, January 19, 2001

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, California 92008

LEAST BELL'S VIREO SURVEY GUIDELINES

JAN 1 9 2001

The following suggested guidelines are provided to facilitate accurate assessments of the presence/absence of the State and federally endangered least Bell's vireo (*Vireo bellii pusillus*, vireo), to provide the Fish and Wildlife Service with sufficient information to adequately respond to requests for applicable Federal permits and licenses, and to fulfill our mandate to conserve and recover the species. Currently, a recovery permit pursuant to section 10(a)(1)(A) of the Endangered Species Act is not required to conduct presence/absence surveys for the vireo, as long as this protocol is utilized and vocalization tapes are not used. These guidelines include minor modifications to our February 1992 guidelines and provide clarification of what we have been verbally recommending.

1. Under normal circumstances, all riparian areas and any other potential vireo habitats should be surveyed at least eight (8) times during the period from April 10 to July 31. However, we may concur, on a case by case basis, with a reduced effort if unusual circumstances dictate that this is a prudent course of action. For instance, intensive surveys of small, marginal or extralimital habitats by experienced personnel may well result in defensible conclusions that eight (or more) individual survey are unnecessary. Under such unusual circumstances, we will consider requests for reductions in the prescribed number of individual surveys. In any case, site visits should be conducted at least 10 days apart to maximize the detection of, for instance, late and early arrivals, females, particularly "non vocal" birds of both sexes, and nesting pairs.

2. Although the period from April 10 to July 31 encompasses the period during which most vireo nesting activity occurs, eight surveys are generally sufficient to detect most (if not all) vireo adults in occupied habitats. Precise vireo censuses and estimations of home range likely will not be possible unless surveys are conducted outside of this time window. Although focused surveys conducted in accordance with these guidelines substantially reduce the risk of an unauthorized take* that could potentially occur as a result of land development or other projects, individual project proponents may wish to conduct surveys that are more rigorous than those that would otherwise result from strict adherence to these survey guidelines. If additional information (e.g., extent of occupied habitat, total numbers of adult and juvenile vireos in study area) is desired or necessary, surveys should be extended to August 31 and conducted in such a manner as to collect the data necessary to prepare reports that reflect the methods and standards established in the current scientific literature on this subject. In particular, information collected after July

15 will reflect a broader extent to the riparian habitat and other adjacent habitat types that the vireo typically utilizes during the latter phase of the breeding season, especially when the young become independent of the adults.

3. Surveys should be conducted by a qualified biologist familiar with the songs, whisper songs, calls, scolds, and plumage characteristics of adult and juvenile vireos. These skills are essential to maximize the probability of detecting vireos and to avoid potentially harassing the species in occupied habitats.

4. Surveys should be conducted between dawn and 11:00 a.m. Surveys should not be conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather that individually or collectively may reduce the likelihood of detection.

5. Surveyors should not survey more than 3 linear kilometers or more than 50 hectares of habitat on any given survey day. Although surveyors should generally station themselves in the best possible locations to hear or see vireos, care should be taken not to disturb potential or actual vireo habitats and nests or the habitat of any sensitive or listed riparian species.

6. All vireo detections (e.g., vocalization points, areas used for foraging, etc.) should be recorded and subsequently plotted to estimate the location and extent of habitats utilized. These data should be mapped on the appropriate USGS quadrangle map.

7. Data pertaining to vireo status and distribution (e.g., numbers and locations of paired or unpaired territorial males, ages and sexes of all birds encountered) should be noted and recorded during each survey. In addition, surveyors should look for leg bands on vireo adults and juveniles if, in fact, it is possible to do so without disturbing or harassing the birds. If leg bands or other markers are observed, then surveyors should record and report the detection and associated circumstances to us by telephone, facsimile, or electronic mail as soon as possible. Reports should include the colors and relative locations of any and all bands detected, the age and sex of the marked bird, and the precise location of the detection.

8. The numbers and locations of all brown-headed cowbirds (*Molothrus ater*) detected within vireo territories should be recorded during each survey and subsequently reported to us. In addition, all detections of the State and federally endangered southwestern willow flycatcher (*Empidonax trallii extimus*, flycatcher) and State endangered yellow-billed cuckoo (*Coccyzus americanus*, cuckoo) should be recorded and reported. Any and all cuckoo and flycatcher adults, young, or nests should not be approached, and taped vocalizations of these species should not be used unless authorized in advance by scientific permits to take* issued by us (if appropriate) and the California Department of Fish and Game. Flycatcher presence/absence surveys require a recovery permit issued by us per section 10(a)(1)(A) of the Endangered Species Act.

9. To avoid the potential harassment of vireos, flycatchers, and cuckoos resulting from vireo surveys, other riparian species survey efforts, or multiple surveys within a given riparian habitat patch, detections of these three species should be reported to us as soon possible by telephone, facsimile, or electronic mail.

10. A final report (including maps) should be prepared that depicts survey dates and times and includes descriptions or accounts of the methods, locations, data and information identified in preceding sections.

11. This final report should be provided to us (at the letterhead address) and to the local office of the Department of Fish and Game within 45 calendar days following the completion of the survey effort. Additionally, a summary of all vireo survey efforts conducted during the calendar year should be submitted to each of the above offices by January 31 of the following year.

Should you have data or information to report, or have any questions regarding these survey guidelines, please contact Christine Moen (christine_moen@fws.gov), or Loren Hays (loren_hays@fws.gov) of my staff at (760) 431-9440 (facsimile 760-431-9624), or John Gustafson (jgustafs@hq.dfg.ca.gov) with the Department of Fish and Game at (916) 654-4260 (facsimile 916-653-1019).

Sincerely,

Ken S. Berg
Acting Field Supervisor

* The term "take," as defined in Section 3, paragraph 18 of the Endangered Species Act of 1973 as amended (Act), means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. "Take" (specifically "harass") is further defined to mean "an act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding, and sheltering" "Take" (specifically "harm") is further defined as an "act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding feeding or sheltering" (50 CFR 17.3). Please be advised that the take of the vireo and other listed species is prohibited by section 9 of the Act unless authorized by permits issued pursuant to section 7 or section 10 to the Act.

Appendix A-6
Tricolored Blackbird Nests

Kelsey, R., September 11, 2008

From Kelsey, Rodd. (2008). Results of the Tricolored Blackbird 2008 Census.

Appendices

Appendix 1. Survey Protocol provided to volunteers

2008 Tricolored Blackbird Survey Protocol

Thank you for volunteering to participate in the 2008 Tricolored Blackbird Survey. This survey is conduc
three years in order to estimate population size and track changes in the status of the Tricolored Blackbir
This information is critical for guiding our conservation efforts and could not be accomplished without y
the extensive efforts of other citizen scientists across the state. The following protocol outlines the metho
used during the survey and how to report your observations.

Our goal is to develop the best estimate of the statewide population as possible. The more areas that are s
where the presence and number (or absence) of Tricolored Blackbirds is recorded, the better the estimate

I. Scouting

It is very useful to check on nearby sites and search the surroundings before the dates of the official surv
streamline the survey and allow you to spend more time at the colonies that require the most effort to obs
count. By April 1 most colonies will be active for their first round of breeding. In the more southerly col
nests will already have hatched young. It appears that 2008 is an 'early' year for Tricolors. Estimating t
and observing the behavior and habits of the Tricolored Blackbirds at this point is interesting and good p

II. Timing

The 2008 survey window is April 25th to 27th. All observations that will be reported as part of the 2008 sur
be carried out on one or more days between April 25 and 27. Tricolored Blackbirds and colonies can shif
over relatively short periods of time during the breeding season. Making sure that a comprehensive coun
narrow time window helps ensure we are not counting the same birds more than once.

Subsequent observations at any future date should also be noted and can be submitted via the Tricolored
Portal (http://tricolor.ice.ucdavis.edu).

III. Survey Locations and Priorities

Breeding colony locations are on maps provided to you were all discovered on previous censuses dating
early 1990's, or incidentally discovered and documented at other times. Some sites were found during th
statewide census in 2005. Each volunteer team has been asked to survey a specific area within their cou
most cases, to visit specific colony sites that were reported in 2005. The following are the areas that shou
surveyed in priority order:

> Priority One: visit and document the number (or absence) of Tricolored Blackbirds at assigned c
> in the immediate vicinity of those colonies. These are those 2005 colony sites that you have beer
> asked to survey and are labeled with the colony name on the maps that have been provided.
>
> Priority Two: survey suitable habitat in areas around assigned colonies and in areas where Tricol
> Blackbirds have been reported or seen before, as indicated by the unlabeled points on the maps p
> and/or based on observations by you and/or other local experts.

Priority Three: survey other areas in the county where there is suitable habitat.

Ideally you are already familiar with these former colony locations, but if not, the locations of 2005 colo reported sites should be easy to find from the maps we provide.

IV. Survey Protocol

Viewing the colony

In general, it is best to avoid any disturbance of nesting birds, as the disturbance can cause nest failure. T especially true for Tricolored Blackbirds and other colony nesting species, since pairs are in close proxin other, and single disturbance can cause the failure of many nests. Under no circumstances should volunt colony. Colonies should be surveyed from a distance at which the birds are unaffected by the surveyor's Since colonies may be located in a variety of contexts, it is up to the observer to determine how close is t Under most circumstances, colonies can be surveyed from just outside the boundaries of the vegetation i birds are nesting. The majority of sites will be readily viewable from public roads and allow close and th Sometimes roadsides provide an elevated view of a colony, and thus a better perspective from which to e colony dimensions and numbers of birds.

Private property should also be respected. Do not enter private property unless you have received permis Sheet about the survey has been prepared and is available for you to give interested landowners (or other them about the survey.

Duration

Be sure to record the amount of time you spend at each colony site (including those where there are no T Blackbirds this year). Spend as much time at each colony as you need to get your best estimate of the nu If after 10 to 15 minutes at a known colony site you have not seen any Tricolored Blackbirds, move on to sites or areas. If Tricolored Blackbirds are present, use your own judgment about how much time to spen colony. In general, prolonged viewing of a colony will improve your estimate and the larger the colony t should be spent. This is particularly true for very large colonies (> 10,000) where it may take some time number of birds. With such large colonies, the more time you spend at the colony, the more the apparent give way to a semblance of order, enabling you to better estimate the size of the colony and gather obser singing males, nest-building females, adults feeding chicks, or fledglings.

However, the time spent at one colony is at the expense of visiting more areas and documenting addition Do not spend too much time at small colonies where you can estimate the number of birds quickly. In thi finding and counting new birds will be more valuable for the statewide estimate.

Colony Size

A Tricolored Blackbird colony can range from 20 birds to 100,000 or more birds. For this survey, all esti

based on visual counts of the birds at a colony. For small colonies, precise counts can be made, but in lar
a visual estimate will be necessary. The method used should be indicated on the data sheet.

Precise Counts

For small colonies (approximately less than 200 birds), a precise count of the number of birds will usuall
With care, this should provide a very precise estimate of the number of birds present.

Scanning Surveys

When large numbers of birds are streaming by, dropping into vegetation, and are otherwise extremely ac
counts will be impossible.

To estimate the number of birds in large groups during this survey there are two ways to estimate numbe
on whether birds are flying by or within the colony.

1) Within the colony: for birds that are perched or flying around within the colony, it is effective to
number of birds that fill a specific, repeatable field of view, such as the field of view in your binc
Within this field of view, either count precisely or by fives or tens for more dense concentrations
reasonable estimate of the number of birds within that view. Then, multiply that number by the n
fields of view that comprise the entire flock or colony.

2) Flying in Transit: Depending on the time of day and colony status, there may be streams of birds
between the colony and an off-colony food or water source. In this case, the number of birds in t
paths can be estimated by counting the number of birds that move by in a given amount of time a
multiplying this by the total time it takes for the flock to pass.

In many cases observers will need to employ both strategies. Position yourself somewhere with good vis
a timed count of the flying birds as they leave the colony. Once the flow of leaving birds has dropped off
conduct a scanning count of the visible birds remaining within the colony itself. The scanning count of th
should be repeated a few times to improve the estimate. Add the estimate of birds flying away from the c
count of birds within the colony. There is space on the data sheet to record your best estimate of birds, as
what you think the minimum and maximum number of birds are at the colony. These minimum and max
estimates will give us some sense of how accurate you feel your best estimate is.

Estimating the size of large colonies can be very challenging, and for some, frustrating. Remember that
providing us with an approximation of colony size and not an exact count. All large colonies that you fi
revisited by one or more experts, regardless.

Sex Ratio

The accuracy of the count will also depend on the sex ratio of birds observed and this depends on activity

colony. Some colonies that are just forming will have both males and females active so that most individ

colony. Some colonies that are just forming will have both males and females active so that most individ
seen. Once incubation begins however, it will be mostly males that are seen. This information is critical t
sheet includes space for specifying the ratio of males to females seen and whether the colony is active bu
(indicating incubation may have begun). Tricolored Blackbird flocks often separate into groups of males
A quick estimation of the numbers in each sub-flock can be used to determine an overall sex ratio. Estim
of males to females in several sub-flocks or fields of view and average them to come up with an estimate

Colony Observations

Locating new colonies and estimating colony sizes are the primary goals of the survey; however, the cha
colonies, the surrounding environment, and the behavior of the birds are all valuable for assessing the sta
health of colonies.

Nest Substrate

Observers should record the nesting substrate of observed colonies. There is space on the data sheet to re
primary (dominant) and secondary substrates. Tricolored Blackbird native habitat consists of young, fres
dominated by tules or cattails, but they also nest in a variety of other vegetation types that provide enoug
and cover to build nests. In addition, they also now regularly nest in grain crops, particularly triticale fiel
association with dairy farms. Likely substrate plants are: bulrush/tule, cattails, blackberry, milk thistle, n
grains like triticale, wheat and barley. Other substrates include: willows, cottonwood, Arundo, desert oliv
prickly lettuce, mule fat, coyote brush, raspberry, rice, tamarisk, and poison hemlock.

Colony Surroundings

In addition to locating and viewing the colony, it is useful to describe the surroundings. In addition to nes
substrate, Tricolored Blackbirds also require a source of open water and suitable foraging areas (e.g. upla
grassland, and alfalfa). They can fly several miles to sources of abundant food (like farms with stored gra
about these locations will assist in future surveys and may help observers find additional breeding coloni
move between various nesting sites and a centralized food source. Any stream of blackbirds is worth foll
On the data sheet, if source of water or stored grains are identified, please record the presence of stored g
and the distance to water. Also, note the dominant land use surrounding the colony (type of agricultural c
vegetation type, etc).

Colony Area

Observers should try to record the approximate length and width of the breeding substrate within the col
measures will be used to calculate the total area of the colony. Since breeding substrate often occurs in pa
larger area, size estimation is approximate. Colony area will be used with what is known about the avera
within Tricolored Blackbird colonies to develop a secondary estimate of the number of birds in the colon

- Measuring Width and Length: Where possible, observers should pace out two sides of the colon
  that approximate one meter. Record the number of meters for these two sides on the data sheet.

- Aerial Photos: Using satellite photos that are provided, observers can highlight the boundaries o being used. These marked-up photos should be sent in with paper copies of datasheets following These will provide a means for mapping the extent and calculating the total area of colonies obse

Behavior and Colony Status

Behavior of birds at a colony and the current activity at the colony are also important sources of informa understanding the seasonal timing of breeding and success of particular colonies. Important observations the datasheet include:

- Singing: pronounced chorus of males heard singing at a colony
- Carrying Nest Material: females observed carrying nest material (e.g. grass)
- Carrying Food: adults observed carrying food (usually insects protruding from bill)
- Colony Quiet: if the colony is relatively quiet (no singing or large groups of males and females and primarily males are visible, this may indicate that incubation has begun and females are on n
- Fledglings: observed young birds in association with adults.

Mapping New Colonies

In order to better ensure that we record the location of new colonies accurately, please use the street and provided (or another map you have available and can copy) to mark the location of new colonies you fin These will be stored and used later for data quality checking.

Survey Routes

Using the maps provided or other maps you have available to indicate the routes taken during the survey highlighting the roads and areas surveyed. These should be sent in with the datasheets and aerial photos f survey.

Appendix 2. 2008 Tricolored Blackbird Survey Report Form and Instructions

Visit Information

Date: Time on Site:

Observer Name:

Telephone Email:

Colony Information

Colony Name:

County Name: Landowner/Contact:

Directions:

Latitude Longitude Datum

Colony Size

Minimum # Birds Type of Estimate: Visual

Best Estimate # Birds Precision of Estimate: Scanning / Precise Count (circ

Maximum # Birds Approximate Sex Ratio (Males/Females):

Colony Observations

Primary Nest Substrate: Secondary Nest Substrate:

Nearby Stored Grains: Yes / No Dominant Surrounding Landuse:

Distance to water: meters / feet (or N/A) Type of water:

Colony Width: meters / feet Colony Length: meters / feet

Carrying nest material Yes / No Singing Yes / No

Carrying Food Yes / No Colony Quiet Yes / No

Fledglings Yes / No

Notes

Date Entered in Tricolored Data Portal: Yes / No

2008 Tricolored Blackbird Survey Datasheet Instructions

One datasheet should be completed for each colony site visited, including if no birds were observed at a colony (rec

observed). Fill out each section as completely as possible.

Visit Information - Please provide the date, names of observers, contact information for one observer, and total time colony

Colony Information – Provide the accepted colony name, if known, or a descriptive name based on the location for where the name is not known or it is a new colony. Provide the county where the colony is located and a detailed de where the colony is located using cross streets, landmarks, and/or approximate mileage (e.g. 1.2 miles SE of interse 26 and Avenue 88). Record the latitude and longitude if possible. This can be done using a GPS in the field. Alterna coordinates can be obtained using a mapping program like Google Earth or when entering data in the Tricolored Bl after the survey (see the survey protocol).

Colony Size – Provide your best estimate of the number of adults at the colony, as well as the minimum and maxim birds (as described in the survey protocol). Be sure to specify the precision of your estimate (precise count or a scar Also, record an estimate the sex ratio (males/females) observed at the colony.

Colony Observations – Tell us whether there was a pronounced song chorus (most males singing), whether you saw carrying nest materials into the colony, whether you saw adults bringing food for nestlings into the colony, and whe observed fledglings. Please tell us in what substrate(s) the nests are constructed, and estimate the total length and w substrate available. Areas will be automatically calculated. Please estimate the distance to nearest water and the typ marsh, stock pond, drainage ditch) and tell us whether you saw the breeding birds utilizing stored grains (e.g., cattle Lastly, describe the surrounding land uses, including the kinds of crops, where possible and appropriate. Place any notes in the Notes field.

Maps – Use the street and colony location maps provided to highlight areas/roads surveyed and the location of any located. These should be sent in with the datasheets.

Aerial Photos – If you were provided with aerial photos of specific colonies, please highlight the colony boundaries used) on those photos and also send those in with the datasheets.

Data Submittal

1) Review datasheets to ensure all required information is recorded.
2) Enter these data into the Tricolored Blackbird Portal (http://tricolor.ice.ucdavis.edu). This has been develo online clearinghouse for data entry and information exchange about Tricolored Blackbirds. Instructions fo should have been provided; if needed they can be downloaded from the website. Be sure to indicate on the that the observation has been entered online.
    a. If you cannot enter your survey data online, skip to step 3.
3) Make copies of your datasheets and maps (this is not required, but will be very valuable if the datasheets a mail).
4) Mail the paper datasheets, maps with new colonies marked on them, and aerial photos with colony bounda marked to the coordinator:

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