West of Devers Upgrade Project
California Public Utilities Commission

Nesting Bird Management Plan

Prepared in collaboration with the following Technical Working Group members:

Kim Marsden, U.S. DOI, Bureau of Land Management
Thomas Dietsch, Ph.D., U.S. Fish and Wildlife Service
Felicia M. Sirchia, U.S. Fish and Wildlife Service
Heather Pert, California Department of Fish and Wildlife
Magdalena Rodriguez, California Department of Fish and Wildlife
Kim Freeburn, California Department of Fish and Wildlife
Paul Yamazaki, Southern California Edison
Gary Busteed, Southern California Edison
Roger Overstreet, Southern California Edison
Patty Nevins, Southern California Edison
Sylvia Granados, Southern California Edison
Kara Donohue, Southern California Edison
Marcus Obregon, Southern California Edison
Scott White, Aspen Environmental Group
Vida Strong, Aspen Environmental Group
Chris Huntley, Aspen Environmental Group
Jenny Slaughter, Aspen Environmental Group

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Note: The California Public Utilities Commission (CPUC) convened a series of meetings with the technical working group (TWG) to prepare a Nesting Bird Management Plan (NBMP) for the West of Devers Project. The TWG held four in-person meetings and two conference call meetings between October 2014 and July 2015 to discuss the format and content of a NBMP that could be applied to the West of Devers Project. This plan reflects the input and discussion of the TWG, and includes a few additional text changes that were made to address final agency comments. With these additional changes, this document is the final product of the TWG.

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Acronyms and Abbreviations

APM	Applicant Proposed Measure
BGEPA	Bald and Golden Eagle Protection Act
BIO	Biology
BLM	Bureau of Land Management
BMP	Best Management Practice
BSA	Biological Survey Area
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
COI	Certificate of Inclusion
CPUC	California Public Utilities Commission
CSS	California Species of Special Concern
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
FRED	Field Reporting Environmental Database
GPS	Geographical Positioning System
ID	identification
kV	kilovolt(s)
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
mph	Miles per Hour
MSHCP	Multiple Species Habitat Conservation Plan
NA	Not Applicable
NEPA	National Environmental Policy Act
Plan	Nesting Bird Management Plan
QA	Quality Assurance
QC	Quality Control
ROW	Right-of-Way
SCE	Southern California Edison
SME	subject matter expert
SPUT	USFWS Special Purpose Utility (permit)
SR	State Route
TWG	The Working Group
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator
WOD	West of Devers Upgrade Project
WRMSHCP	Western Riverside Multiple Species Habitat Conservation Plan

1. Introduction

The purpose of this Nesting Bird Management Plan (Plan or NBMP) is to specify the Southern California Edison (SCE) strategy and specific procedures to comply with applicable federal and state regulations and permits as well as to identify specific mitigation measures (MMs) pertaining to nesting birds encountered during construction of the West of Devers Upgrade Project (WOD or Project), and to obtain agency concurrence on the strategy and procedures. The relevant project-specific measures are included herein as they are prescribed in the *West of Devers Upgrade Project Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* prepared for this project by the *California Public Utilities Commission (CPUC) and the U.S. Department of Interior, Bureau of Land Management (BLM).*

This is an adaptive management plan that may be revised or modified in consultation with *the CPUC, BLM,* the *California Department of Fish and Wildlife (CDFW), and the U.S. Fish and Wildlife Service (USFWS)* to address field conditions, to improve the avoidance, mitigation, and minimization measures outlined in this plan, or to address changes in local, state, and federal regulations. The amendment process is described in Section 4.

This Plan includes the following:

- The definition of active and inactive nests
- Establishing species-specific default buffers1 for construction activities
- Establishing procedures for implementing species-specific default buffers
- Establishing communication protocol for proposed reduction in established species-specific default buffers
- Survey methodology and monitoring procedures,
- Reporting contents, format, and schedule

1.1 Project Description

1.1.1 Project Purpose Statement

SCE proposes to construct the Project to increase the power transfer capability of the WOD 220 kilovolt (kV) transmission lines between Devers, El Casco, Vista, and San Bernardino substations. The Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator for planning purposes as the Blythe and Desert Center areas. The Project, planned to be operational by 2020, would be constructed primarily within disturbed rights-of-way (ROW), although limited new ROW would be required. SCE needs to acquire upgraded rights in the reservation trust land (the "Reservation") of the Morongo Band of Mission Indians ("Morongo" or Tribe).

1.1.2 Project Overview

The Project would upgrade the existing WOD transmission line system by replacing the existing WOD 220 kV transmission lines and associated structures with new, higher-capacity transmission lines and

[1] A buffer is a defined area surrounding the nest where most project work activities will not be permitted, to minimize project-related disturbance to nesting. Buffer distances vary according to bird species and other factors, and distances may be adjusted on a case-by-case basis, as described in this Plan.

structures; installing new and/or upgraded substation facilities; and making telecommunication improvements (see Section B, Project Description, of the EIR/EIS for a complete description of the Project). In particular, the Project would:

- Upgrade substation equipment within SCE's existing Devers, El Casco, Etiwanda, San Bernardino, and Vista substations in order to accommodate increased power transfer on the upgraded WOD 220 kV transmission lines. Upgrade SCE's existing Timoteo and Tennessee 66/12 kV substations to accommodate 66 kV subtransmission line relocations.
- Remove and upgrade the following existing 220 kV transmission lines and structures with new transmission lines and structures utilizing double-bundled 1590 kcmil aluminum conductor steel-reinforced (also referred to as the 2B-1590 ACSR) conductor:
  - Devers–El Casco (approximately 30 miles);
  - El Casco–San Bernardino (approximately 14 miles);
  - Devers–San Bernardino (approximately 43 miles);
  - Devers-Vista No. 1 and No. 2 (approximately 45 miles each);
  - Etiwanda–San Bernardino (approximately 3.5 miles); and
  - San Bernardino–Vista (approximately 3.5 miles).
- Remove and relocate approximately 2 miles of two existing 66 kV subtransmission lines.
- Remove and relocate approximately 4 miles of existing 12 kV distribution lines.
- Install telecommunication lines and equipment for the protection, monitoring, and control of transmission lines and substation equipment.

1.1.3 Project Location

The Project is located in the Coachella Valley and western portions of Riverside County, and in southwestern San Bernardino County, California. The Project traverses the cities of Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, Palm Springs, Redlands, San Bernardino, and Yucaipa, and unincorporated areas of Riverside and San Bernardino counties. The transmission corridor passes over Interstate 215 in San Bernardino County, as well as State Route (SR)-60, SR-79, SR-243, and SR-62 in Riverside County, and runs approximately parallel to the majority of the Interstate 10 corridor in both San Bernardino and Riverside counties.

The Project is located largely within an existing utility corridor in incorporated and unincorporated areas of Riverside and San Bernardino counties, within the San Bernardino Valley. The San Bernardino Valley region is bounded by the San Gabriel and San Bernardino Mountains to the north, the San Jacinto Mountains to the east, and the Santa Ana Mountains and Pomona Valley on the south and west, respectively. The terrain of the project area varies between gently sloping plains to steep ridges and drainages in the foothills. Elevations within the project area range from approximately 1,050 to 3,000 feet above mean sea level with mountainous topography, lowlands and foothills, and relatively flat urban areas.

The Project is divided into six segments for ease of discussion. Segment 1, Segment 2, and the western portion of Segment 3 are located in incorporated and unincorporated portions of San Bernardino County. The eastern portion of Segment 3, all of Segment 4, and very small areas of Segment 5 are located in the Western Riverside County Multiple Species Habitat Conservation Plan (WRMSHCP) area. Portions of Segment 5, excluding the Morongo Reservation, and most of Segment 6, excluding small parcels of lands administrated by the BLM, are located in the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) area.

1.1.4 Project Activities and Disturbance Levels

Table 1, below, provides a list of typical project activities and their corresponding disturbance level for nesting birds. The disturbance levels in Table 1 were categorized based upon the activities' disturbance to nesting birds observed on previous similar projects and analysis of the following factors. The disturbance level category for any construction activity may be revised by SCE and the agencies on a case-by-case basis to account for site-specific conditions or unforeseen circumstances (e.g., contractors may use equipment or techniques not anticipated here).

- Duration of activity
- Type of equipment used
- Noise Level associated
- Number of personnel needed
- Position of equipment used to complete activity
- Types of helicopters used

Low disturbance level activities generally produce little to no noise, utilize no machinery, create minimal fugitive dust, are short in duration, and cause minimal to no ground or vegetation disturbance. Examples of low disturbance activities are Vegetation Clearing (Hand Tools) and Bird Deterrent Installation. Some low disturbance level activities such as surveys, staking and flagging, and best management practice (BMP) installation and repairs generate very minimal levels of disturbance compared to other construction activities. These activities are classified in Table 1 as minimal disturbance level activities and do not require the typical buffers that other construction activities necessitate. Minimal disturbance level activities and their applicable buffers are described in greater detail in Section 2.4.2 and Section 2.4.4.

Medium disturbance level activities generally produce some noise, create minimal fugitive dust, utilize light machinery that may cause noise and vibrations, and cause medium ground and vegetation disturbance; however, the activities are relatively stationary and shorter in duration than high disturbance level activities. Light construction machinery is considered to be equipment such as or similar to: power tools, small Bobcats, Ditch Witch, small skid steers, small backhoes, small excavators, boom trucks, and small bulldozers. Vegetation clearing (light machinery), foundation drilling, and grading (hand tools/light machinery) are examples of medium disturbance level activities.

High disturbance level activities generally produce high levels of noise, create fugitive dust, utilize heavy machinery that create noise and vibrations, and cause ground and vegetation disturbance. Heavy machinery is considered to be equipment such as or similar to: cranes, large Bobcats, large bulldozers, large excavators, large skid steers, and motor graders. Vegetation clearing (heavy machinery), tower erection, and tower demolition are examples of high disturbance activities. These high disturbance level activities usually take place over larger areas and for longer durations. Construction activities and typical equipment used are classified in Table 1 and are categorized as a Minimal, Low, Medium, and High.

Table 1. Typical Project Activities and Their Disturbance Levels

Construction Activity Category	Construction Activity	Disturbance Level
Preconstruction	Environmental Resource Surveys*	Minimal
	Civil Survey*	Minimal
	Construction Staking and Re-staking*	Minimal
	ESA Staking and Re-staking*	Minimal
	Site Visits*	Minimal
	Utility Potholing	Medium
	Bird Deterrent Installation*	Low
Site Preparation	Vegetation Clearing (Hand Tools))	Low
	Vegetation Clearing (Light Machinery)	Medium
	Vegetation Clearing (Heavy Machinery)	High
	Grading (Hand Tools/Light Machinery)	Medium
	Grading (Heavy Machinery)	High
	BMP Installation (Hand Tools)*	Minimal
	BMP Maintenance (Hand Tools)*	Minimal
	BMP Installation (Light Machinery)	Medium
	Fence Installation	Medium
Foundation Construction	Casing/Steel Preparation	Low
	Drilling	High
	Casing/Steel Installation	Medium
	Concrete Pouring	High
	Concrete Finishing/Cleanup (Excluding Grinding)	Low
	Concrete Finishing (Grinding)	Medium
Tower Assembly	Steel Delivery (Truck)	Medium
	Steel Delivery (Helicopter)	Helicopter Buffer
	Assembly (Crane)	Medium
	Assembly (Helicopter)	Helicopter Buffer
Tower Erection	Tower Erection (Crane/Ground)	High
	Tower Erection (Helicopter)	Helicopter Buffer
	Tower Erection (Bolting Only)	Low
	QA/QC Inspection*	Minimal
Wire Stringing	Traveler Installation	Helicopter Buffer
	Remove/Install Insulators	Helicopter Buffer
	Wire Stringing (Ground Equipment)	Medium
	Wire Stringing (Helicopter)	Helicopter Buffer
	Spacer Installation	Helicopter Buffer
	Helicopter Transport	Helicopter Buffer
	Clipping	Medium
	Guard Structure Placement (Truck)	Low
	Guard Structure Installation	Medium
	Guard Structure Removal	Medium

Table 1. Typical Project Activities and Their Disturbance Levels

Construction Activity Category	Construction Activity	Disturbance Level
Telecommunications Activities	Pole Removal	Medium
	Pole Installation	Medium
	Installation of Cross Arms	Low
	Insulator Removal/Installation	Low
	Traveler Installation/Removal	Low
	Wire Stringing	Medium
	Fiber Optic Splicing*	Low
	Resistance Testing	Low
Construction Yards	Personnel Meeting	Minimal
	Material Storage	Minimal
	Deliveries	Minimal
Tower Deconstruction	Deconstruction (Crane)	High
	Deconstruction (Helicopter)	Helicopter Buffer
	Steel Salvage	High
	Foundation Removal	High
Restoration	Site Re-contouring (Grading)	High
	Topsoil Replacement	Medium
	Hydraulic BMP/seed application	Low
	Seeding (Hand)	Low
	Seeding (Machinery)	Medium
	Watering	Low
	Herbicide Application	Low
	Weed Removal (Hand)	Low
	Weed Removal (Machinery)	Medium
Substations	(Assume activities will take place within existing disturbance limits, but see Tower Assembly, Tower Erection, Wire Stringing for activities that may occur at locations just within the substation fence.	Low-High
General	Existing Access Road Grading	Medium

* See Section 2.4.2 and Section 2.4.4

Note:

ESA = Environmentally Sensitive Area

1.2 Agency Roles and Responsibilities

The following sections summarize the roles and responsibilities of the lead and cooperating agencies for the Project.

1.2.1 CPUC

CPUC is the state lead agency responsible for California Environmental Quality Act (CEQA) review and compliance. Under CEQA, both lead agencies must address the Project as a whole. CPUC staff have participated in development of the Plan and have recommended its adoption as a condition of the CPUC's decision on the Project. In addition, CPUC will review any proposed amendments to the Plan to evaluate

their consistency with the Project's Final EIR/EIS. CPUC staff reviews and approves biologists that will work on the Project. CPUC-designated avian consultant reviews nest buffer reduction notifications and requests, and may confer directly with the SCE Biologist, SCE Avian Protection Specialist, Avian Biologists, and Biological Monitors for information on bird behavior at specific nests. In addition, the CPUC Environmental Monitors may confer with designated SCE construction representatives, in coordination with the SCE Biologist, for information about project activities.

1.2.2 BLM

BLM is the federal lead agency responsible for National Environmental Policy Act (NEPA) review and compliance. Under NEPA, both lead agencies must address the Project as a whole. BLM staff provided feedback on drafts of the Plan and concurrence on the final version of the Plan. In addition, BLM will review any proposed amendments to the Plan and evaluate its consistency with the Project's Final EIR/EIS and Biological Opinion. BLM staff may confer directly with the SCE Biologist, SCE Avian Protection Specialist, Avian Biologists, and Biological Monitors for information on bird behavior at specific nests.

1.2.3 CDFW

CDFW is a Trustee Agency for fish and wildlife resources (California Fish and Game Code [CFGC] Sections 711.7 and 1802; and CEQA Guidelines Section 15386), and a Responsible Agency regarding any discretionary actions taken by CDFW (CEQA Guidelines Section 15381). CDFW is a permitting agency for the WRMSHCP and the CVMSHCP. CDFW provided feedback on drafts and concurrence on the original approved version of the Plan and provided input on the revisions. Buffer reduction notifications for special-status species are submitted to CDFW staff for review. WOD defines a special-status species to be any state or federally listed (threatened, endangered, or candidate) species under the California Endangered Species Act (CESA) or federal Endangered Species Act (FESA), California species of special concern (CSS), California "fully protected" species under the CFGC, California "special animals" and "watch list" species (non-listed special-status species).

1.2.4 USFWS

USFWS is responsible for consistency with the FESA, Migratory Bird Treaty Act (MBTA), and Bald and Golden Eagle Protection Act (BGEPA) and is a permitting agency for the WRMSHCP and the CVMSHCP. USFWS provided feedback on drafts of the Plan and concurrence on the original approved version of the Plan and provided input on the revisions.

1.2.5 Morongo Band of Mission Indians and Bureau of Indian Affairs

The Morongo and Bureau of Indian Affairs (BIA) are consulting agencies that have requested notifications for the management of biological resources on the Morongo Reservation.

1.3 Regulatory Setting

There are a number of federal and state laws that protect birds and their nesting activities. The applicable regulations and permits are summarized below along with the applicable Final EIR/EIS Applicant Proposed Measures (APMs) and MMs, which together provide the regulatory framework within which WOD must comply. In the event regulations impacting nesting birds are revised prior to or during implementation of WOD, the Plan may be modified to reflect these revisions. Proposed revisions to this Plan will be provided to the reviewing agencies as described in Section 4.

1.3.1 Federal Regulations

1.3.1.1 Federal Endangered Species Act

The FESA and its subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. FESA Section 9 lists activities that are prohibited by the act. For example, unauthorized "take" of any listed species is prohibited. FESA defines take as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. No take of federally listed endangered or threatened species is proposed in this plan. See applicable permits and consultation documents for direction on these species.

1.3.1.2 Migratory Bird Treaty Act

The federal MBTA makes it unlawful, except as formally permitted, to take (pursue, hunt, take, capture, or kill) migratory birds except under permits for special situations such as imminent threat to human safety or scientific research. The law currently applies to more than 1,000 species, including most native birds, and covers the destruction or removal of active nests of those species.

1.3.1.3 Bald and Golden Eagle Protection Act

Bald and golden eagles, their eggs, and their nests receive additional protection under the BGEPA (16 United States Code 668-668d, 54 Stat. 250 and Amendments). The BGEPA states "no person shall take, possess, sell, purchase, barter, offer for sale, transport, export, or import any bald or golden eagle alive or dead, or any part, nests or eggs, thereof without a valid permit to do so."

1.3.2 State of California Regulations

1.3.2.1 California Fish and Game Code[2]

Section 2050 et seq. – California Endangered Species Act. The CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA is administered by the CDFW and prohibits the take of any species that the California Fish and Game Commission determines to be a threatened or endangered species. The CESA also mandates that, "state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species," if reasonable and prudent alternatives are available that would avoid jeopardy. The CDFW administers the act and authorizes take through CFGC Section 2081 Incidental Take Permits or through Section 2080.1 (for species also listed under FESA, consistency determination with Biological Opinion). No take of state listed endangered or threatened species is proposed in this Plan. See the applicable permits and consultation documents for management direction on these species.

Section 3511 – Fully Protected Species. The legislature of the State of California designated certain species as "fully protected" prior to the creation of CESA. Section 3511 states that "fully protected" birds or parts thereof may not be taken or possessed at any time. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, mammals, amphibians and reptiles, and birds. Most fully protected species have since been listed as

[2] The discussion of regulations presented herein is consistent with regulations current at the time of publication, and future versions of the Plan should consider the amended regulations adopted by the CDFW.

threatened or endangered under CESA and/or FESA. The "fully protected" designation applies to several non-listed species in the WOD project vicinity, including golden eagle and white-tailed kite.

Sections 3503, 3503.5, 3505, 3513 — Birds. These CFGC sections protect all birds, birds of prey, and all nongame birds, as well as their eggs and nests, for species that are not already listed as fully protected and that occur naturally within the state. Sections 3503 and 3503.5 of the CFGC stipulate the following regarding eggs and nests: Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by CFGC or any regulation made pursuant thereto; and Section 3503.5 states that is it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by CFGC or any regulation adopted pursuant thereto. Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

CDFW Special Animals List. "Special Animals" is a broad term used to refer to all the animal taxa tracked by the CDFW's California Natural Diversity Database, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special-status species." CDFW considers the taxa on this list to be those of greatest conservation need. The "special-status species" designation applies to several non-listed bird species in the WOD project vicinity, such as loggerhead shrikes and yellow warblers.

In most cases, issues that will arise during construction will be associated with species protection under the MBTA and the CFGC sections pertaining to native birds. Therefore, the management strategies presented in this Plan focus on those species protected under these regulations.

1.3.3 Local Regulations and Policies

The Project route crosses two Multiple Species Habitat Conservation Plan (MSHCP) areas. In Riverside County, 18.4 linear miles of the route (Segment 4 and portions of Segments 3 and 5) are within the WRMSHCP area, and 22 linear miles (Segment 6 and portions of Segment 5) are within the CVMSHCP area.

This NBMP does not address nest management for state or federally listed Threatened or Endangered species, or for burrowing owl. Nest management for listed species is prescribed in the USFWS Biological Opinion (USFWS, 2016) and/or CDFW Incidental Take Permit (CDFW, 2017), as well as the conditions included in the Certificate of Inclusion (COI) for the WRMSHCP and CVMSHCP. Nest management for burrowing owl is prescribed in a separate Burrowing Owl Management Plan (Appendix H of this Plan). Nest management for all other non-listed special-status species covered under one or both MSHCPs will be carried out as described in this NBMP. For those species, the provisions of this NBMP will apply throughout the Project route, including both MSHCP areas, San Bernardino County, and the Morongo Reservation.

1.4 Measures and Conditions from Environmental Documents

This Plan is required by MM Wildlife (WIL)-1c from the Final EIR and Final EIS for the Project. MM WIL-1c supersedes APM Biology (BIO)-03 from the *Proponent's Environmental Assessment* (SCE, 2013); however, each measure is listed in Table 2.

Table 2. Applicable Mitigation Measures

Measure	Text of Measure
MM WIL-1c	**Prepare and Implement a Nesting Bird Management Plan.** [Supersedes APM BIO-3] SCE shall prepare a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS. The NBMP shall describe methods to minimize potential project effects to nesting birds, and avoid any potential for unauthorized take. Project-related disturbance including construction and pre-construction activities shall not proceed within 300 feet of active nests of common bird species or 500 feet of active nests of raptors or special-status bird species (except for golden eagle as described in Mitigation Measure WIL-2f) until approval of the NBMP by CPUC and BLM in consultation with CDFW and USFWS. **NBMP Content.** The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (4) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds will be minimized; and (5) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests. The paragraphs below describe the NBMP requirements in further detail. **Background.** The NBMP shall include the following: • A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law. • A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations or as necessary for adaptive management upon approval by CDFW, USFWS, CPUC, and BLM. • A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section will also note any species that do not require avoidance measures (e.g., rock pigeons). • A list of the types of project activities (construction, operations, and maintenance) that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity. • Clearing of any vegetation, site preparation in open or barren areas, or other project- related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible. **Pre-construction nest surveys.** Pre-construction nest surveys will be conducted prior to any construction activities scheduled during the breeding period. For this project, the breeding period will be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. Field biologist qualifications will be subject to review by CPUC and BLM. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys will focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines. • Surveys shall cover all potential nesting habitat within the ROW or other work areas and within 500 feet of these areas for raptors and 300 feet for non-raptors. • Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist will perform a pre-construction "sweep" to identify any bird nests or other resources that may have appeared since the 10-day survey. • SCE shall provide the CPUC and BLM a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic data set will be updated following each pre-construction nest survey throughout the nesting season. The

Table 2. Applicable Mitigation Measures

Measure	Text of Measure
	format and contents of this report will be described in the draft NBMP and will be subject to review and approval by CPUC and BLM.
	Nest Buffers and Acceptable Activities
	The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor, and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer.
	The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors.
	The NBMP will identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and special-status species. Nest management for listed threatened or endangered species will be prescribed in a USFWS Biological Opinion, CDFW Incidental Take Permit, or both. All applicable avoidance measures, including buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active.
	For each special-status species potentially nesting within or near project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed.
	The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers.
	Nest Buffer Modification or Reduction
	At times, SCE or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist who has been approved by CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures will be provided for special-status birds. The NBMP will list the information to be included in buffer reduction notifications in a standardized format.
	Nest deterrents. The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on project facilities, materials or equipment, SCE will avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.
	Communication. The NBMP shall specify the responsibilities of construction monitors in regards to nests and nest issues, and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately.

Table 2. Applicable Mitigation Measures

Measure	Text of Measure
	The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP will specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval process. **Monitoring.** SCE shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to project work areas, bird nesting activity, project-related disturbance, and outcome of each nest. For nests with reduced buffers, SCE shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring once construction work is completed in the area. New nests discovered after work completion in an area would not require monitoring. In addition, monitoring shall include pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the project's construction activities. **Reporting.** Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to CPUC monitors. The draft NBMP shall include a proposed format for daily and weekly reporting (e.g., spreadsheet available online, tracking each nest). In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, SCE will submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS. Specific contents and format of the annual report will be reviewed and approved by the CPUC and BLM in consultation with CDFW and USFWS. **Implementation locations:** San Bernardino County (all); WR-MSHCP (all, regardless of SCE's PSE status); CV-MSHCP (all, regardless of SCE's PSE status); BLM (all); reservation (recommended for all Morongo Tribal Lands).
APM BIO-03	**Nesting Birds.** SCE would prepare and implement a Nesting Bird Management Plan to address nesting birds undertaken in collaboration with the CDFW, USFWS, and BLM. The Plan would focus on an adaptive management approach that may be updated as needed if changes to the plan are identified or conditions in the field change. The Plan would include the following: nest management and avoidance, field approach (survey methodology, reporting, and monitoring), and the Project avian biologist qualifications. The avian biologist would be responsible for oversight of the avian protection activities including the activities of biological monitors. In order to minimize impacts to nesting birds during nesting season, pre-construction surveys and regular sweep surveys of active construction areas by a qualified biologist would focus on breeding behavior and a search for active nests within 500 feet of the project disturbance areas where survey access is not limited. (a) For vegetation clearing that needs to occur during the typical nesting bird season (February 1 to August 31; as early as January 1 for raptors) qualified biologists would conduct nesting bird surveys. If an active nest (e.g., nests with eggs or chicks) is located, the appropriate avoidance and minimization measures from the management plan would be implemented. If it is determined that removal of an active nest is required, the project avian biologist will evaluate the appropriate level of consultation with CDFW, USFWS, and BLM; (b) During the typical nesting bird season, SCE would conduct preconstruction clearance surveys no more than 14 days prior to initial start of construction in accordance with the adaptive management plan, to determine the location of nesting birds and territories; (c) Nest monitoring would be conducted by Project biological monitors with knowledge of bird behavior under the direction of a BLM and/or CDFW approved avian biologist; (d) Nesting deterrents (e.g. mooring balls, netting, etc.) could be used for inactive nests where appropriate at the direction of the Project avian biologist;

Table 2. Applicable Mitigation Measures

Measure	Text of Measure
	(e) A Project avian biologist would determine the appropriate buffer area around active nest(s) and provisions for buffer exclusion areas (e.g. highways, public access roads, etc.) along with construction activity limits... Unless restricted by the Project avian biologist, construction vehicles would be allowed to move through a buffer area with no stopping or idling. The Project avian biologist would determine, evaluate, and modify buffers as appropriate based on species tolerance and behavior, the potential disruptiveness of construction activities, and existing conditions; and
	(f) The Project biological monitor(s) would observe and document established buffer areas around active nest(s) during project activities. The active nest site and applicable buffer would remain in place until nesting activity concluded. Nesting bird status reports would be submitted according to the management plan.

Note:
PSE = Participating Special Entity

1.5 Measures/Conditions and Project Phases

The measures described in this Plan are applicable for the following periods of the Project, as shown in Table 3.

Table 3. Timing of Applicant Proposed Measure and Applicability

	Period		
Measure	**Preconstruction (Mobilization)**	**During Construction (Active)**	**Post-construction (Restoration)[a]**
APM BIO-03	☒	☒	☐
Final EIR/Final EIS MM WIL-1c	☒	☒	☒

[a] Operations and Maintenance will be conducted in accordance with all applicable rules and regulations.

2. Management for Nesting Birds

2.1 Management Summary

When practicable, WOD activities will be conducted outside of the nesting season in the project area. However, this Plan focuses on managing nesting birds and nests both outside of and during the nesting season. Management of nesting birds means avoiding or minimizing project activities that have the potential to cause active nest failures as well as to minimize or avoid construction delays. Protecting active nests involves establishing construction disturbance-free buffers within which construction activities are restricted. Establishing and maintaining buffers is designed to prevent take of active nests, eggs, nestlings, or nesting birds as a result of construction activities. Tolerance to disturbance can vary from one bird species to another. Therefore, it is feasible to establish species-specific, or family/group-specific, variances to default buffers that would allow successful nesting of these groups, while reducing constraints on construction activities. This Plan details buffers per species or family/group (see Table 4). Nest buffers for avian species listed under CESA and FESA as specified in the Final EIR/EIS are not addressed in this Plan. Nest management for these listed species will conform to any applicable conditions or requirements adopted by the lead agencies or permitting agencies, including conditions of the CPUC's Decision, BLM's Record of Decision, Biological Opinion, Incidental Take Permit, CVMSHCP COI, and WRMSHCP COI.

This section describes the definition of an active nest, determination, and implementation of reduced species-specific or family/group-specific default buffers, implementation of nest buffers, nesting bird deterrent methodologies, and the removal of inactive nests.

2.1.1 Management Roles and Responsibilities

The following describes the roles and responsibilities of the persons discussed in this Plan in determining active nests and implementing the appropriate default buffers or buffer reductions. Figure 1 presents the flow of information between roles on this Project. SCE's average qualifications for Avian Biologist and Biological Monitor described in this Plan are included in Section 3.1.2, below.

- **SCE Biologist:** The SCE Biologist evaluates and approves Bird Nest Events (i.e., nest records) in the Field Reporting Environmental Database (FRED) and default buffers and contractor-initiated buffer reduction requests to be implemented per this Plan. The SCE Biologist will be the primary point of contact with CDFW, USFWS, CPUC, and BLM regarding active nests, default buffers, and reduced buffers; regularly reviews and critiques the FRED nesting bird database (i.e., Bird Nest Events) and submits reports to CDFW, USFWS, CPUC, and BLM. The SCE Biologist reviews and approves the Avian Biologist's conservation recommendations and directs the contractor to implement them; confers directly with agency staff regarding project activities, bird behavior, and nest locations. The SCE Biologist may be an SCE employee or a contractor who is delegated responsibility by the SCE Environmental Project Manager. For efficiency, the SCE Biologist may delegate duties to the Avian Biologist.
- **Avian Biologist:** *Avian Biologist* may refer to any biologist approved by the appropriate agencies to conduct surveys, monitoring, and other activities related to nest management described in this Plan. The term may also refer to a *Lead* Avian Biologist who shares decision-making and agency coordination responsibilities with the SCE Biologist (see Figure 1).

  The Avian Biologist(s) searches for and identifies active bird nests; documents behavior to evaluate appropriate default buffer (for species such as red-tailed hawk with more than one default buffer);

recommends buffer reduction distances as appropriate and communicates these to the SCE Biologist; recommends indirect impact reductions, such as establishing no parking/stopping/loitering zones or chick fencing for ground-nesting precocial species; approves buffers larger than standard buffers; determines when a nest is active or no longer active based on personal observations or those of the Biological Monitor (including all nests located at any time during project survey efforts); tracks and updates the Bird Nest Events in FRED; and may also erect any required Environmentally Sensitive Area (ESA) staking and fencing around an active nest. The Avian Biologist(s) may confer directly with agency staff regarding bird behavior at specific nest locations.

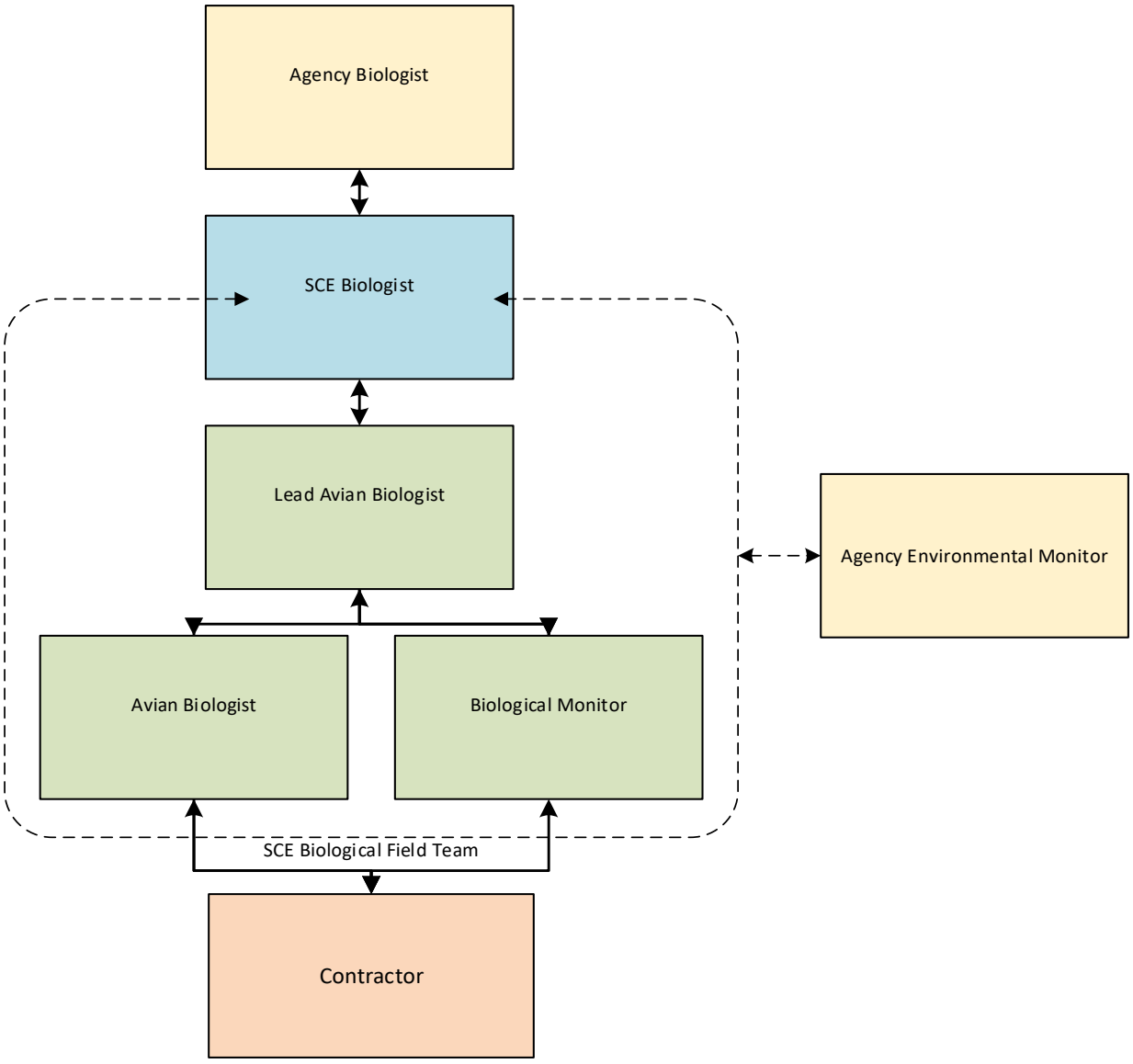


Figure 1. Avian Monitoring Communication Flow

- **Biological Monitor:** Biological Monitors are responsible for monitoring compliance during construction activities, documenting non-compliances and wildlife species observations. Biological Monitors establish any required ESA staking and fencing around an active nest following guidance provided by the Avian Biologist and the SCE Biologist; assist with monitoring nests and adjacent construction activities under supervision of the Avian Biologist; conduct regular sweeps to search for and identify

additional nests; communicate regularly with the Avian Biologist about any nesting bird behaviors observed; report observations and recommendations of nest activity and inactivity; and create new and updates existing Bird Nest Events in the FRED. Biological Monitors may confer directly with agency staff regarding bird behavior at specific nest locations.

2.2 Nest Definitions

2.2.1 Active Nest

Birds and their nests are protected in the state of California by both state and federal law. At the federal level, the MBTA states:

> *It shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof.*

At the state level, CFGC Section 3503 states:[3]

> *It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.*

CFGC Section 3503.5 states:

> *It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

While MBTA does not clearly define what an active (or inactive) nest is, the USFWS (USFWS, 2003) has clarified that the federal regulations do not pertain to the destruction of nests alone (without birds or eggs), provided that possession of the nests does not occur and the activities do not otherwise result in take of migratory birds covered by the MBTA. CDFW has not provided clarification on the regulations pertaining to nesting birds. Therefore, for purposes of this Plan, non-raptor, non-special-status species nests without eggs or chicks are considered inactive. For raptors, a nest is considered active when raptors exhibit nest construction or nest decorating behavior. An Avian Biologist will determine when a nest is active based upon field observations at each nest. For special-status species, a nest is considered active upon initiation of construction of the nest.

Because a moderate number of avian species never "build" nests, special attention will be provided to potential nests, known old nests, and the behavior of adults of any member of the orders Strigiformes (owls), Caprimulgiformes (nightjars), Cathartidae (new world vultures) or families in the order Falconiformes (diurnal birds of prey) including Falconidae (falcons), and Accipitridae (eagles, hawks, and kites), and some ground-nesting species (e.g., killdeer). The determination of an active nest will be made by the Avian Biologist with a minimum observation time as described below.

[3] See footnote 2 for information regarding proposed amendments to the CFGC.

2.2.2 Inactive Nest

For the purpose of implementing this Plan, non-raptor and non-special-status species nests that are under construction will be considered inactive until eggs are present within the nest. Non-listed special-status species nests will be considered active during the nest building phase.

A previously active nest becomes inactive when it no longer contains viable eggs and/or living young and is not being used by a bird as part of the reproductive cycle (eggs, young, fledging young still dependent upon nest). Egg inviability will be inferred if eggs are present or believed present, but the adult birds have stopped brooding the eggs or abandoned the nest, based upon repeated observations of inactivity at the nest location when required. In some cases, a nest can be abandoned by the bird constructing it and become inactive prior to egg laying. In such cases, determination that the nest is inactive is made on a case-by-case basis based on consistent observations and the determination of an Avian Biologist.

2.3 Active Nest Avoidance and Documentation

During construction of the Project, the Avian Biologists, Biological Monitors, and the SCE construction team will work together to avoid or minimize impacts to active nests. The principal means of avoiding or minimizing impacts will be to establish designated areas ("buffers") surrounding each nest, where most project activities will not be authorized. When work activities are required adjacent to an active nest, the SCE construction team will work with the SCE biology team and the agencies to determine whether the following default buffer distances may be modified to minimize impacts to the nest while allowing work to proceed.

2.3.1 Determination of Species-specific or Avian Group/Family Specific Buffers

The recommended default buffers around active nests for the various groups of birds depicted in Table 4 are the recommended distances at which construction activities can occur without disturbing the nest, adults and/or young to the point of potential nest failure. The default buffers established in Table 4 will be applied, unless a specific change is approved by the Avian Biologist to increase or decrease the buffer on a case by case determination based on the behavior of the bird and planned project activities. The procedures for buffer reductions (i.e., decreased distances) are described in this section below and in Section 2.3.3.

It is important to emphasize that species-specific buffers are measured from the nest to the site of the construction activity outwards (horizontally for ground or helicopter activities) or upwards (vertically for helicopter activities), as appropriate, and accounts for the nest's location, including the height of the nest (see Figures 2, 3, 4, and 5). Upon discovery of an active nest the Biological Monitor shall mark the cylinder-shaped buffer area by ESA signage or markings on the work site, based on horizontal distance from the nest location. The buffer distances in the figures are for illustration purposes only; please see Table 4 for species specific default buffers.

2.3.1.1 Ground Based Construction Activities

A cylinder-shaped default buffer (Figures 2 and 3) will be established around active nests prior to the initiation of ground-based construction activities or upon discovery of a new active nest by the Biological Monitor or Avian Biologist. The default buffer distance established around a particular nest will be species-specific, according to the established buffer distances in Table 4.

2.3.1.2 Helicopter Based Construction Activities

Helicopter activities typically include moving crews, moving equipment, moving materials, construction activities, and wire stringing/removal. The duration of helicopter use varies based on activity, type of construction, and terrain.

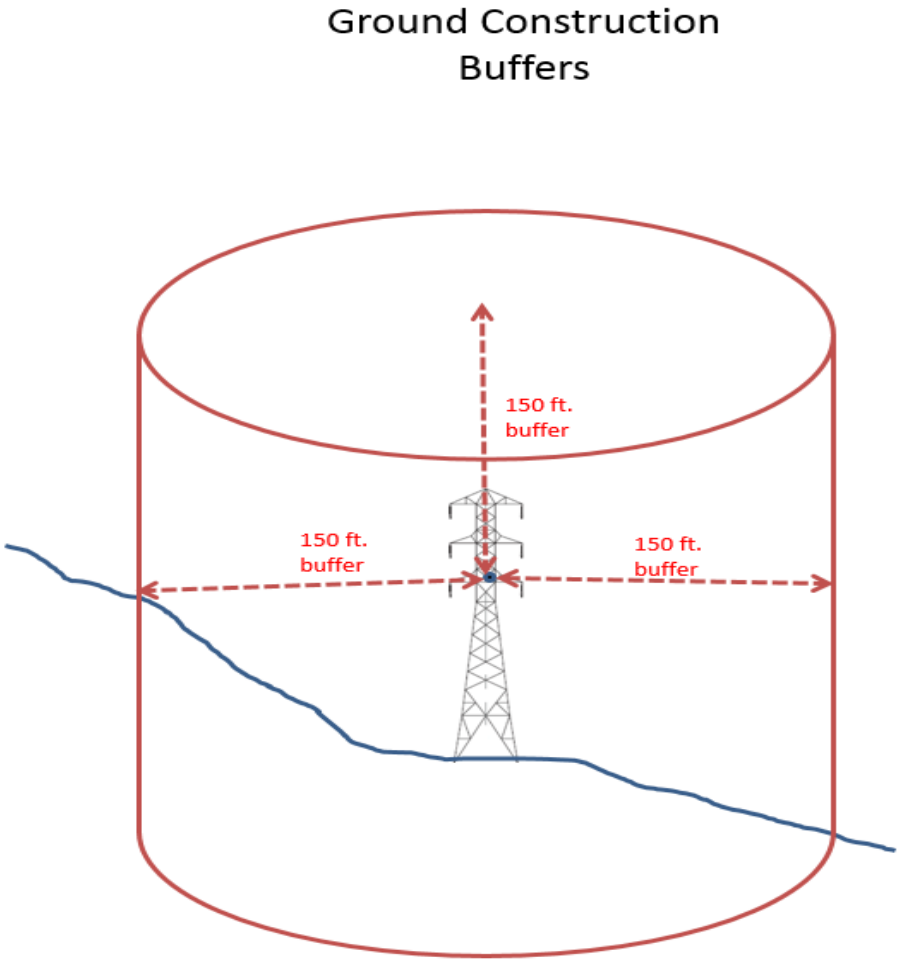


Figure 2. Example of Cylindrical Ground Construction Buffers for Nest in a Structure

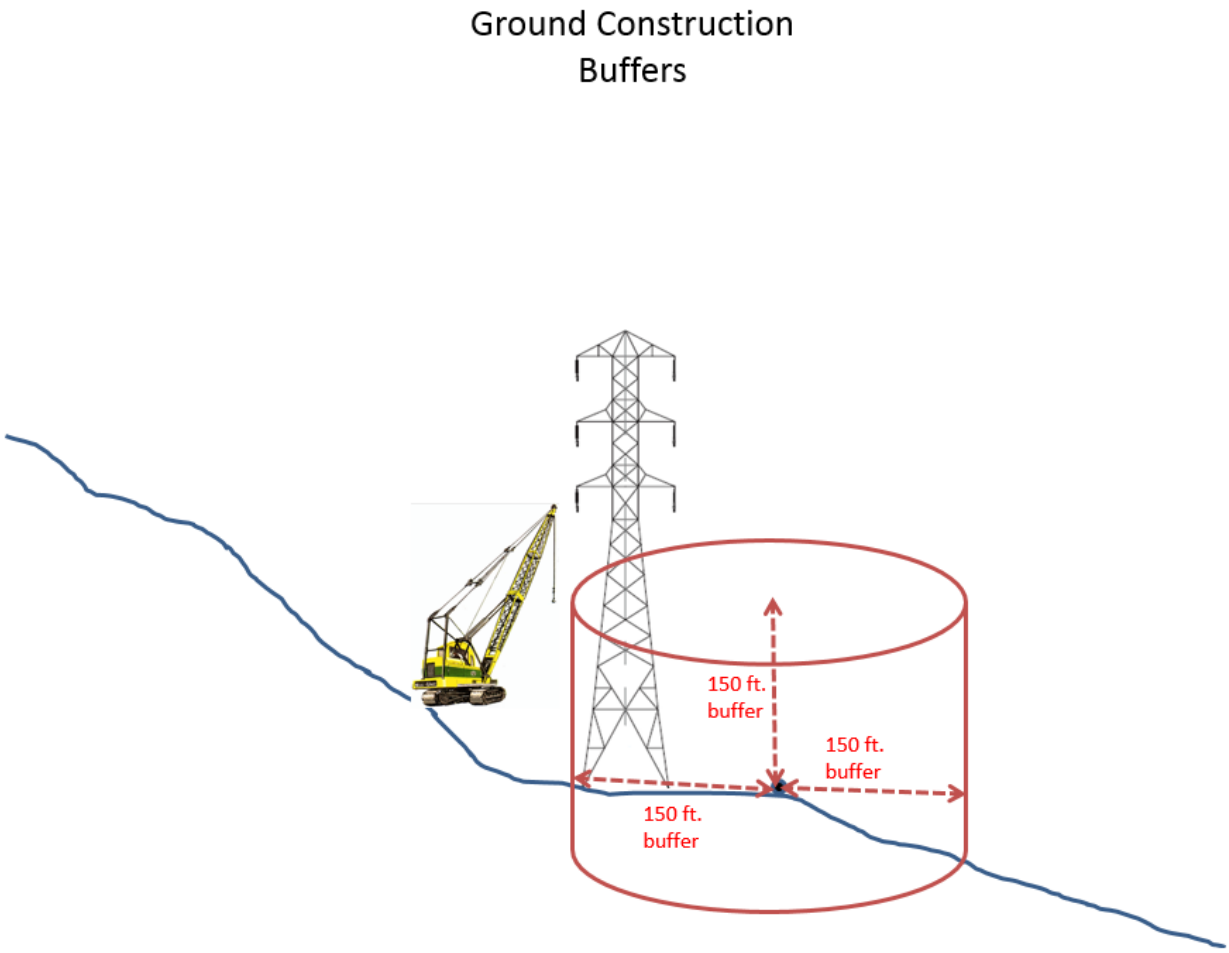


Figure 3. Example of Cylindrical Ground Construction Buffers for a Nest Nearby Construction Activities

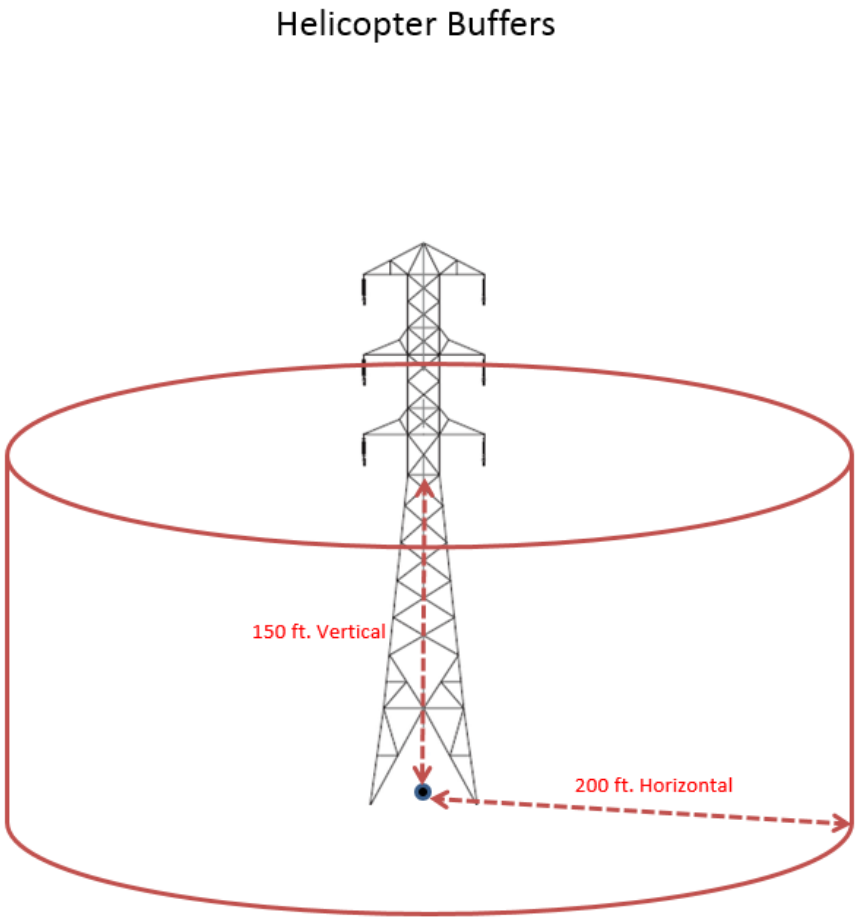


Figure 4. Example of Helicopter Buffer When Nest Is on the Ground

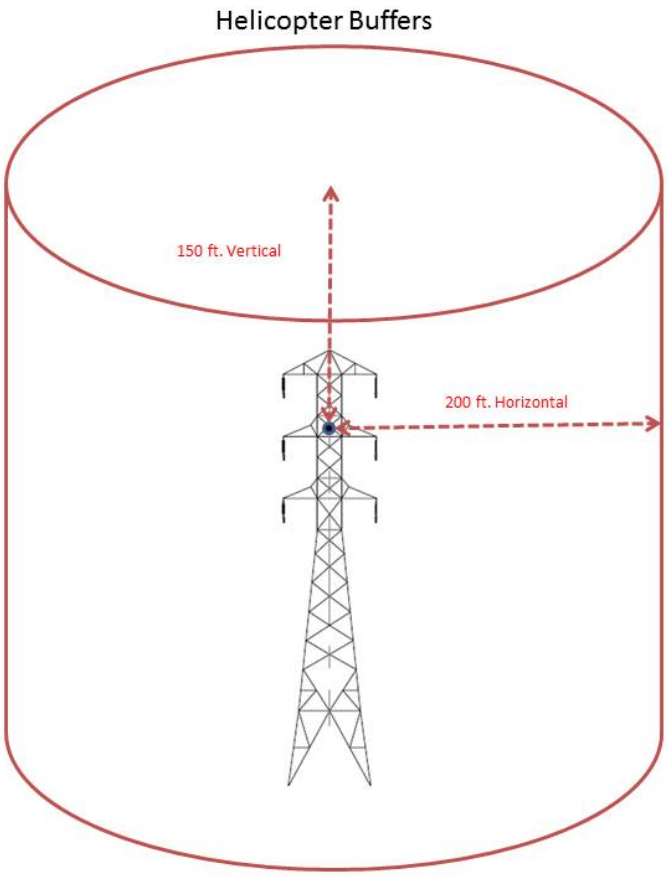


Figure 5. Example of Helicopter Buffers When a Nest Is Located Within the Tower

Cylinder-shaped horizontal and vertical default buffer distances will be established for helicopter construction activities according to the distances established in Table 4 due to the limitations of the Geographical Positioning System (GPS) units on the helicopter. Project Team members shall monitor the helicopter tracks (flight patterns and durations) daily to ensure compliance with established helicopter buffers and document any non-compliances. SCE shall retain helicopter track data and provide the agencies with these tracks when requested.

In many respects, helicopter construction work is similar to heavy ground-based construction activity. Therefore, the horizontal species-specific default buffers established for helicopter construction activity are greater than those for light ground-based construction activity (see Table 4, Column 4). The only exception is for raptors in Category 3, for which a 300-foot species-specific default buffer is adequate under most circumstances for both ground-based and helicopter construction activities.

Vertical species-specific default buffers established for helicopter work are also greater than for ground-based construction work in most cases (Table 4), although generally not as great as the horizontal helicopter species-specific default buffers. The species-specific default buffers provided in this Plan may need to be adjusted based on site-specific and nest-specific observations in the field. The vertical species-specific default buffers take into account the effects of rotor wash from the smaller helicopters proposed for use on WOD, which typically cause a down draft of 15 to 18 miles per hour (mph) at up to 150 feet. Larger-sized helicopters with greater rotor wash could require larger buffers. For exposed nests, vertical default buffers will be modified accordingly, based on site-specific conditions recorded in the FRED.

The duration and frequency of activity in the vicinity of a nest should also be taken into consideration when evaluating whether or not the buffer requirement is met. The default buffers were established based on construction activities that are temporary or infrequent in nature. If a construction crew will be working in the vicinity of an active nest for an extended period depending on the nature of the work (an extended period can be defined as a few minutes for heavy construction or helicopter work to an hour or more for light construction), then the Avian biologist may determine that species-specific default buffer is insufficient for the nest and adjust the distance appropriately. The helicopter species-specific buffers assume that the helicopter will only be present in the area for a brief period adjacent to the nest, typically less than a minute, and that it will only visit the site once in a day, or once in the early morning and again in the late afternoon. This time frame is consistent with most types of anticipated helicopter use on the project. Helicopter flight track data will be reviewed by project team members as described above, to confirm helicopter activity periods near nests.

The vertical helicopter buffers are projected on the GPS displays in all helicopters based upon the elevation from sea level. The elevation of each nest is taken during the initial determination of "active nest." The location of the nest in relation to the biologist taking the GPS coordinates is also added to the buffer prior to the nesting data being pushed to the helicopters daily. For example, to maintain a vertical species-specific default buffer of 100 ft. for a nest that is 100 ft. off the ground in a tower arm will appear in the GPS as a 200 ft. buffer from the ground elevation.

In Table 4, some species fall into more than one category and may therefore have more than one species-specific buffer associated with it. A blue-gray gnatcatcher (*Polioptila caerulea*), for example, nesting in a thicket or understory is less likely to be disturbed than one nesting in a more exposed location in a shrub or small tree even though both nests are the same distance from the construction activity. Likewise, a red-tailed hawk (*Buteo jamaicensis*) that has acclimated to human activities is less likely to be disturbed at its nest (and thus placed in Birds of Prey Category 2) than one that is not accustomed to human activity (placed in Birds of Prey Category 3). The category for each nest will be determined by the Avian Biologist based upon location of the nest relative to surrounding commercial, residential areas, or other activities, as well as, the bird's documented tolerance to human activity observed during field observations. For specific construction activities, sound monitoring information may be used during analysis of potential impacts from construction-related activity. For similar reasons, birds assigned to a category based on their nesting habits are not all likely to have similar thresholds of disturbance. In these instances, a range of species-specific buffers is indicated in Table 4.

Default buffers consider species tolerances for disturbance, if known. Larger default buffers are used for large avian species and for species that are not tolerant of disturbance. Smaller default buffers are generally used for smaller avian species and also species that have a high tolerance for disturbance, such as those that are commonly found nesting close to development. Several species have been identified as common species that use the electric power transmission structures (Lattice Steel Towers) or build nests in or on equipment that is stored at a site. These include some red-tailed hawks, common ravens, western kingbirds, Cassin's kingbirds, and house finches.

Appendix A[4] provides relevant natural history information for species with the potential to nest in the project area. Appendix B provides additional information on special-status species and their sensitivity to

[4] Appendices will include supporting information to this Plan. Reference to appendices were maintained in the Plan to illustrate the type of information that could be included such as forms, species accounts/lists, netting/spike specification sheets, nest platform, Burrowing Owl Management Plan, location of Wildlife rehabilitation, bird nest data summary, and other information.

construction. Biological Monitors will have this Plan in their possession to refer to individual species to assist in determining appropriate buffers in the field for specific construction activities. There may be instances where a bird may be showing signs of agitation and the buffer may need to be increased. The Avian Biologist will approve increases to buffer sizes as needed.

Table 4. Buffers for Horizontal and Vertical Ground and Helicopter Construction

Avian Group (nest type /location)	Species Potentially Nesting within WOD Limits and Survey Area[a]	Minimum Buffers for Ground Construction Per Disturbance Level (feet)	Horizontal Buffer for Helicopter Construction (feet)	Vertical Buffer for Helicopter Construction (feet)[b]
Waterfowl and rails	Canada goose, wood duck, mallard, cinnamon teal, ruddy duck, Virginia rail, sora, American coot, pied-billed grebe	150	300	150
Quail	California quail, Gambel's quail	150	200	150
Herons	Great blue heron, great egret, snowy egret, cattle egret, black-crowned night-heron	250	500	300
Birds of prey (Category 1)	American kestrel, barn owl, western screech-owl	300	200	150
Birds of prey (Category 2)	Osprey, Cooper's hawk, red-tailed hawk (2); some urban/suburban), red-shouldered hawk, great horned owl, burrowing owl[c]	300	300	200
Birds of prey (Category 3)	Turkey vulture, red-tailed hawk (2; some rural/remote), white-tailed kite, northern harrier, long-eared owl	500	500	300
	Peregrine falcon, prairie falcon,	Consult CDFW and USFWS	Consult CDFW and USFWS	Consult CDFW and USFWS
Eagles	Golden eagle	1 mi line of site 0.5 mi no line of site	1 mi line of site 0.5 mi no line of site	1 mi line of site 0.5 mi no line of site
Shorebirds	Killdeer	200	200	200
Pigeons	Band-tailed pigeon	150	200	200
Doves	Mourning dove, white-winged dove, common ground-dove	150	200	150
Roadrunners	Greater roadrunner	300	200	150
Nightjars	Lesser nighthawk, common poorwill	150	200	150
Swifts	White-throated swift	200	200	150
Hummingbirds	Black-chinned hummingbird, Anna's hummingbird, Costa's hummingbird, Allen's hummingbird	100	200	150
Woodpeckers	Acorn woodpecker, ladder-backed woodpecker, Nuttall's woodpecker, downy woodpecker, northern flicker	150	200	150
Passerines (cavity and crevice nesters)	Say's phoebe, ash-throated flycatcher, brown-crested flycatcher, tree swallow, rock wren, canyon wren, house wren, Bewick's wren (2), mountain chickadee, oak titmouse, western bluebird	100	150	100
Passerines (bridge, culvert,	Black phoebe, Say's phoebe, northern rough-winged swallow, cliff swallow, barn swallow, house finch (3)	100	150	100

Table 4. Buffers for Horizontal and Vertical Ground and Helicopter Construction

Avian Group (nest type /location)	Species Potentially Nesting within WOD Limits and Survey Area[a]	Minimum Buffers for Ground Construction Per Disturbance Level (feet)	Horizontal Buffer for Helicopter Construction (feet)	Vertical Buffer for Helicopter Construction (feet)[b]
and building nesters)				
Passerines (ground nesters, open habitats)	Horned lark, rock wren, western meadowlark, orange-crowned warbler, lark sparrow, grasshopper sparrow	150	200	150
Passerines (understory and thicket nesters)	Bushtit, Bewick's wren (2), blue-gray gnatcatcher (2), black-throated gray warbler, yellow-breasted chat, spotted towhee, black-chinned sparrow, sage sparrow, song sparrow, black-headed grosbeak, blue grosbeak, lazuli bunting, American goldfinch	150	200	150
Passerines (shrub and tree nesters)	Pacific-slope flycatcher, Cassin's kingbird, western kingbird (2), loggerhead shrike (2),* Hutton's vireo, western scrub-jay, American crow, common raven, verdin, bushtit, black-tailed gnatcatcher, blue-gray gnatcatcher (2), cactus wren (2),* American robin, northern mockingbird, Le Conte's thrasher, phainopepla, yellow warbler, black-throated gray warbler, yellow-breasted chat, California towhee, black-throated sparrow, song sparrow, summer tanager, great-tailed grackle, hooded oriole, Bullock's oriole, house finch (3), Lawrence's goldfinch, lesser goldfinch	150 (300 for species marked with an *)	200	150
Passerines (open scrub nesters)	Loggerhead shrike (2),* verdin, cactus wren (2),* black-tailed gnatcatcher, wren tit, northern mockingbird, California thrasher, Le Conte's thrasher, Phainopepla, orange-crowned warbler, southern rufous-crowned sparrow, California towhee, black-throated sparrow, Brewer's blackbird, lesser goldfinch	150 (300 for species marked with an *)	200	150
Passerines (tower nesters)	Western kingbird (2), common raven, house finch (3)	150	200	150
Passerines (marsh nesters)	Common yellowthroat, red-winged blackbird, tricolored blackbird,* great-tailed grackle	150 (300 for species marked with an *)	200	150
Species not covered under MBTA.	Domestic waterfowl, including domesticated mallards, feral (rock) pigeon, ring-necked pheasant, chukar, Eurasian collared-dove, spotted dove, parrots, parakeets, European starling, house sparrow	NA	NA	NA

1. For species listed under two or more categories, the number of categories is indicated in parentheses, e.g., "red-tailed hawk (2)."
2. Standard distances applicable only to small helicopters, which typically cause a down draft of 15 to 18 mph at up to 150 feet, operating in nest vicinity for up to 3 minutes once or twice per day, with a minimum of 4 hours between helicopter activities. Larger helicopters or longer work periods will require additional agency review.
3. Burrowing owl buffers will be specified in a separate Burrowing Owl Management Plan.

Notes:
mi = mile(s)
NA = not applicable

2.3.2 Implementation of Species-Specific Buffers

This section describes the process of implementing species-specific default buffers for active nests. Species-specific nesting buffer implementation during construction will be designed to avoid take of an active nest. Buffers implemented for each particular nest may be greater than the buffers detailed in this Plan (Table 4) if deemed necessary by the Avian Biologist. Implemented buffers for non-special-status species may be reduced to smaller buffers than detailed in the Plan (Table 4), on a case by case basis as determined by an Avian Biologist as described in Section 2.3.3.1, below. The Avian Biologist will monitor the nest long enough to determine how the nesting pair is responding to the disturbance activity and will adjust the buffer accordingly to minimize disturbance at the nest.

When an active nest is discovered during a preconstruction survey, a Biological Monitor will delineate the buffer area and restrict construction as necessary per the species-specific default buffer (Table 4). A Biological Monitor will document the individual behavior of the bird; the stage of the reproductive cycle; and the site conditions. Section 3 provides survey methods for identifying nests within the Project area.

In the event an active nest is detected by a Biological Monitor during construction activities at a specific work site during a work day, construction activities will be suspended, and the species-specific default disturbance-free buffer will be established around the active nests. Demobilization activities, for work that was occurring inside the disturbance free buffer prior to the identification of the active nest, will be allowed within the buffer in order for field personnel and equipment to vacate the affected work site utilizing approved access roads and maintain vehicle speeds under 15 miles per hour, in a timely manner once the site has been secured and can be left safely. Monitoring of the nest will continue to track the status and stage of the nest site. The Avian Monitor or Biological Monitor will observe and record the work suspension and demobilization activities.

For ground-based construction activities, vertical separation of the nest from the construction area may be considered when selecting the appropriate horizontal buffer. Some species build their nests very high in trees and structures. For example, a common raven nest located 150 feet off the ground in an existing structure is less likely to be affected by ground work occurring directly below than a nest located 50 feet off the ground. The horizontal and vertical buffers will be implemented using the guidelines as described in Section 2.3 of this Plan.

For species such as red-tailed hawk with two or more default buffer distances, the default distance will be determined by site-specific conditions. For these species, the habitat and infrastructure surrounding a nest location will be evaluated for its ability to provide a visual and/or acoustic barrier to construction. This information will be used to help determine the appropriate avian group from Table 4 for implementation of the default buffer.

The observed behavior of an individual bird during the nest search process and consequent nest monitoring will help determine the appropriate buffer distance. For example, an incubating adult that appears more skittish and is readily disturbed could receive a larger buffer than an incubating adult that sits tight and appears more acclimated to disturbance.

Generally, nesting birds are most susceptible to failure early in the nesting cycle when fewer resources have been invested towards the nest. Therefore, it is more important to reduce disturbances during egg laying rather than later in the nesting cycle, which could result in the determination of a larger buffer being necessary early on, then reducing its size later in the nesting season.

Extreme weather events may produce conditions that would increase the likelihood of nest failure. Combined with the stress of nearby construction activity, a nest might fail that would otherwise succeed. On unseasonably hot, cold, or windy days, species-specific buffers ***may*** need to be temporarily increased.

Information will be maintained in the FRED for all nests identified within active WOD construction areas. At a minimum, for each nest, the following information will be documented:

- Status (active or inactive)
- Species
- Nest location including nest height
- Behavioral observations; Site conditions
- Nest exposure
- Estimated date of nest establishment
- Estimated fledge date
- Buffer size implemented

To avoid take of active nests whose buffer areas overlap active construction areas or access roads, an Avian Biologist or Biological Monitor will implement and maintain the established default ESA buffer, monitor adjacent construction activities, and document the nesting birds' behavior observations and active nest status. SCE will ensure that the construction contractor is made aware of the ESA buffers through the use of construction maps outlining environmental and biological constraint areas, flagging, staking and signage, and direct communication in the field. Nest Monitoring will be discussed in more detail in Section 3.3 below.

2.3.3 Buffer Reductions

For project activities of any disturbance level that are inconsistent with established buffer distances, the SCE Biologist and Avian Biologists will evaluate the proposed activity on a case by case basis. Where appropriate, they may work with the construction team to revise a buffer reduction request to minimize potential impacts to nesting birds. A reduced buffer distance, as outlined below, may be implemented if recommended by the Avian Biologist and approved by the SCE Biologist. For common species, SCE will notify the agencies of each buffer reduction. For special-status species, SCE will submit a request for agency review of any proposed buffer reduction. This Plan does not include a buffer reduction procedure for listed threatened or endangered species. Project activities that may affect listed species will be addressed according to the Project's Biological Opinion, Incidental Take Permit, or applicable MSHCP COI(s).

For each proposed buffer reduction, an Avian Biologist will be consulted and will determine whether the default species-specific buffers (Table 4) may be reduced for the specific activity and duration associated with the active nest. An Avian Biologist will make this determination based on the information provided by a Biological Monitor, the species' natural history, and its known tolerances including those observed during SCE nesting bird management on WOD. If a reduced species-specific buffer can be implemented, the SCE biologist will be consulted prior to the reduction of the default buffer. Buffer reductions will take place only after consideration of site-specific conditions such as distance to construction, type of disturbance activity, anticipated duration of the disturbance, microhabitat at the location of the nest that may provide visual and acoustic barriers, behavior of the pair, and its reproductive stage

2.3.3.1 Common Species Buffer Reductions

For common species, buffers listed in Table 4 may be reduced to smaller buffers through the following notification process:

1. The Construction Contractor will file a buffer reduction request to the SCE biologist, describing the proposed work activity within the default buffer area, reason the activity must be completed while the nest remains active, and total period of proposed buffer reduction.

2. Once a request for a buffer reduction is received from the Construction Contractor, the SCE Biologist will review the nest status and the need for the reductions with the contractor or construction manager. Potential avoidance of the buffer reduction will be evaluated (e.g., by staging equipment in a different location). Wherever feasible, proposed work activities and locations will be adjusted to avoid or minimize incursion into the buffer area.

3. The SCE Biologist, SCE Construction team, and Avian Biologist will evaluate the request and determine whether a reduced buffer can be applied. The decision will be based on the documented nest information and site-specific conditions such as distance to construction, type of disturbance activity, anticipated duration of disturbance, microhabitat at the nest location that may provide visual and acoustic barriers, behavior of the pair, its reproductive stage, the species' natural history, species' known tolerances to human presence and activities, proposed buffer reduction distance and start and end dates, and anticipated work activities and durations. If determined to be acceptable by the SCE team, the SCE Biologist will submit a buffer reduction notification to the CPUC, BLM, USFWS, and CDFW. For nests on the Morongo Reservation, the notification will also be provided to the Tribe and BIA. The following will be included in the notification:

    - Complete description of activities proposed within the reduced buffer, including types of equipment, duration, and start date
    - Description of project activity in the vicinity of the nest within the last 30 days
    - Identification of the current and reduced buffers
    - Map showing current and reduced buffers
    - Nest activity, location, topography or other features that may shield the nest from the work area,[5] the pair's response to the biologist, and photos
    - Assessment made by the Avian Biologist
    - Description of monitoring if different from the monitoring protocol described within the Plan
    - Statement regarding returning to the established default buffer after work has been completed in the reduced buffer area.

4. The SCE Biologist will notify the Avian Biologist and the Biological Monitor. The Biological Monitor will modify the ESA markers to the new buffer distance. The SCE Biologist will modify the buffer distance, upload the notification information, document the notification and concurrence (if applicable) dates in the FRED.

[5] Throughout this NBMP, "work area," "active work area," "construction area," or "active construction area" refer to the construction work limits as approved by the CPUC and BLM.

5. As the work activity is initiated, the Avian Biologist will monitor the nest long enough to determine how the nesting pair is responding to the disturbance activity. If necessary, the avian biologist will adjust the buffer accordingly to minimize disturbance at the nest.

6. If the activities described in the notification do not begin within seven calendar days or if project activities change to a higher level of disturbance, the nest will be reevaluated and an updated buffer reduction notification will be submitted for the proposed activities.

Once the project activity is complete, the buffer will revert back to the original established buffer. The Biological Monitor will adjust the ESA markers and the SCE Biologist will update the nest record in the FRED.

2.3.3.2 Special-Status Species Buffer Reductions

Buffers listed in Table 4 for special-status species may be reduced to smaller buffers through consultation with the appropriate resource and land management agencies (refer to Appendix A). This NBMP does not address buffers or buffer reductions for listed threatened or endangered species. Project activities that may affect those species will be regulated according to conditions of the project's Biological Opinion, Incidental Take Permit, CVMSHCP COI, and WRMSHCP COI. If a buffer for a special-status species nest impedes Project activities, a reduced buffer may be implemented according to the following process:

1. The Construction Contractor will file a buffer reduction request to the SCE biologist, describing the proposed work activity within the default buffer area, reason the activity must be completed while the nest remains active, and total period of proposed buffer reduction.

2. Once a request for a buffer reduction is received from the Construction Contractor, the SCE Biologist will review the nest status and the need for the reduction with the contractor or construction manager. Potential avoidance of the buffer reduction will be evaluated (e.g., by staging equipment in a different location). Wherever feasible, proposed work activities and locations will be adjusted to avoid or minimize incursion into the buffer area.

3. The SCE Biologist, SCE Construction team, and Avian Biologist will evaluate the request and determine whether a reduced buffer can be applied. The decision will be based on the documented nest information and site-specific conditions such as distance to construction, type and anticipated duration of construction, microhabitat at the nest location that may provide visual and acoustic barriers, behavior of the pair, its reproductive stage, the species' natural history, species' known tolerances to human presence and activities, proposed buffer reduction distance and start and end dates, and anticipated work activities and durations. If determined to be acceptable, the SCE Biologist will submit a buffer reduction notification to CPUC, CDFW, BLM, and USFWS. For nests located on the Morongo Reservation, notification will also be provided to the Tribe and BIA. Notifications will be provided 24 hours[6] prior to implementation of the reduced buffer.

4. If no objections are received within 24 hours, the buffer reduction may be implemented at the discretion of the SCE Biologist and Avian Biologist. The Biological Monitor will then modify the ESA markers to the new buffer distance. The SCE Biologist will modify the buffer distance, upload the approval information, document the request and approval dates in the FRED. If objections are communicated, the SCE Biologist and Avian Biologist will cooperate with the concerned agency(s) to resolve the issue.

[6] Assumes business days, Monday through Friday. For example, a notification provided at 10:00 a.m. on Friday would be implemented no earlier than 10:00 a.m. the following Monday, national holidays excepted.

5. As the work activity is initiated, the Avian Biologist will monitor the nest long enough to determine how the nesting pair is responding to the disturbance activity. If necessary, the avian biologist will adjust the buffer accordingly to minimize disturbance at the nest.
6. If the activities described in the request do not begin within seven calendar days or if project activities change to a higher level of disturbance, the nest will be reevaluated and an updated buffer reduction request shall be submitted for the proposed activities.

Once the project activity is complete, the buffer will revert back to the original established buffer. The Biological Monitor will adjust the ESA markers and the SCE Biologist will update the nest record in the FRED.

2.3.4 Accidental Disturbance of Active Nests

In the event project activities cause abandonment of a nest with eggs or chicks or damage to eggs, chicks, or the nest resulting in a low chance of survival, the eggs or chicks will be transported by a Biological Monitor to the closest wildlife rehabilitation facility able to accept the eggs or chicks and the CPUC, CDFW, BLM, USFWS, BIA, and/or the Tribe (as appropriate) will be immediately notified (within 24 hours). See Appendix C for a list of permitted wildlife rehabilitation facilities. The final disposition of the eggs or chicks will be reported in the FRED as well as by the SCE Biologist directly to the appropriate agencies via email. SCE will cover the cost of the care by the wildlife rehabilitation facility. When incidents like this occur, they will be documented as non-compliances and provided to the agencies and included within daily incident email summaries and weekly reports.

2.4 Exceptions to Notification Requirements

The following sections describe construction activities that do not follow the buffer implementation and reduction procedures in Sections 2.3.2 and 2.3.3. In each of the scenarios below, every effort will be taken to avoid take of active nests. These activities are not exempt from nest protection but are either necessary to ensure public health and safety or are considered such low impact as to be unlikely to cause nest failures. Crews or personnel performing these activities will be made aware of nest locations to avoid impacting these nests.

2.4.1 Critical Construction Activities

Some critical construction activities must be completed to ensure public health and safety, and structural integrity. When an active nest that had not been documented prior to beginning the activity is identified during performance of a critical construction activity, the construction team may complete the necessary task to ensure public health and safety or structural integrity is not compromised. SCE will provide a valid USFWS Special Purpose Utility (SPUT) permit allowing management of nests in emergency circumstances or, if the permit has expired, will provide the expired SPUT and USFWS confirmation that the expired permit remains valid until issuance of a new or renewed permit. The SCE Biologist will follow the notification of USFWS and CDFW required by the permit as well as CPUC and BLM. The Avian Biologist or Biological Monitor will monitor the nest throughout the continuing activity and will work with the construction crew during the activity and demobilization to take action as feasible to minimize impacts to the nest. These actions may include repositioning equipment to take advantage of visual or sound barriers, shutting down unneeded equipment, or minimizing work activities in some portions of the site. Following completion of the activity, the work area will be promptly demobilized, and the default buffer distance will be put into place. The list of critical construction activities is included in Attachment L. When incidents

like this result in a nest failure, it will be documented as a non-compliance, provided to the agencies, and included within a daily incident email summary, weekly report, and annual report.

2.4.2 Buffer Distances for Access Roads

Substations, material storage yards, helicopter landing zones, assembly and support yards, contractor yards, and construction areas associated with WOD may be accessed by a single ingress/egress point. These access roads into construction areas are frequently located adjacent to vegetation (e.g., shrubs and trees) or other habitat, including vegetation planted to screen substation facilities, which provide suitable nesting habitat for birds. Implementing buffers for active nests that become established along access roads may restrict access to and construction activities within substations and yards.

In the event of an active nest located less than the default buffer distance from the ingress/egress point, ingress/egress to the project work areas will be managed by the SCE Biologist working with the Avian Biologist to avoid take of an active nest while allowing use of these roads for construction activities. Take of an active nest from vehicular travel along project access roads can be avoided through the implementation of the following management practices:

- The areas along access roads will be surveyed up to 100 feet on either side by the Avian Biologist to document locations of active nests and to assess buffers,
- The speed limit on all project access roads will be restricted to 15 mph or less,
- Vehicles will not stop or idle along project access roads within an active nest buffer if an access road gate lies within an active nest buffer then a brief stop will be allowed for gate opening/closing.
- Avian Biologists or Biological Monitors will place no parking/idling/stopping signs and ESA staking along the road at the limits of nest buffers to avoid impacts,
- Construction personnel will not loiter through or within an active nest buffer,
- Watering of access roads for dust control will be limited to prevent direct watering of an active nest within active nest buffers.

2.4.3 Active Substations and Yards

Once construction or clearance of vegetation for a yard or substation is complete and the yard or substation is established and is in active operation, buffers for non-special-status species nests found inside or adjacent to the yard or substation will be determined by an Avian Biologist. The distance will generally be smaller than the default buffer for a given species, in consideration of the project-related disturbance present as the nest was being built. Reduced buffers for nests inside of yards and substations are acceptable for non-special-status species due to acclimation to the regular construction activities. Indirect impacts to the individual nests are not anticipated as work will occur within the yard or substation only. If the activity occurring in the yard may cause accidental nest damage due to the nest location or the nest was built on equipment/materials in the yard, then ESA signage will be erected to restrict workers from accidentally disturbing the nest or causing nest failure. However, if a major change in the activity level or activity type within the yard or substation will occur, there may be situations where appropriate nest buffers will be implemented within the yard or substation specific to that activity. Examples may include helicopter use or mobilization of a large piece of equipment, where the Avian Biologist determines it is not reasonable to assume the individual birds are acclimated to the activity. In these situations, these types of activities may occur within the yard or substation but outside the nest buffer. The CPUC, BLM, CDFW, and USFWS will be notified of planned buffer changes and related activity.

2.4.4 Minimal Disturbance Activities

Certain minimal disturbance construction activities that would not require establishing a staked-off nest buffer (e.g. staking activities) are listed below and in Table 1. During these minimal impact activities, the crews and supplies would be transported to the construction site via pickup truck. Where feasible, the truck will be parked outside the species-specific default buffers in Table 4. However, if necessary crews would access the site on foot. All staking, creation or repair of divots, and removal/replacement of wattles or BMP fencing would be performed by hand using non-power hand tools if necessary; areas will be accessed on foot.

In some cases, these activities include some level of habitat disturbance (e.g., hand vegetation clearing). For those activities, an Avian Biologist will be present and record observations in the monitoring log. These activities include: installation or Repair of Water Quality BMPs, Tower Quality Assurance (QA)/Quality Control (QC) Site Finalization Activities, Fiber Optic Splicing at Tower Splice Boxes, and Resistance Testing. Other activities have no ground disturbance or vegetation disturbance. For those activities, a Biological Monitor will be present and record observations in the monitoring log. These activities include: Environmental Resource Studies, Civil Engineering Surveys, Site Visits, Site Staking/Flagging and Restaking/Re-flagging. For all minimal disturbance activities, ongoing nest surveys would occur to update nests and identify new nests within and adjacent to these construction areas (see Section 3.3).

Environmental Resource Surveys

Environmental resource surveys include biologists walking transects in the field to collect biological resource information such as special-status plant and wildlife species, vegetation mapping, jurisdictional water mapping and surveys for other environmental resources within the project area.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.

Civil Engineering Surveys

Civil Engineering Surveys include marking engineering features in the field by a civil surveying crew. Crews may use GPS devices to mark out these features will wooden stakes.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.
- The work will be performed using non-power hand tools.

Site Visits

Site visits from SCE and agency personnel may occur for various reasons.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.

Site Staking/Flagging and Re-staking/Re-flagging

Site staking and re-staking consist of marking with wooden stakes the limits of an area and maintaining this staking over time. This includes staking of approved work sites, ESAs, and other areas where staking is required. In addition to stakes, this activity may consist of placing or replacing flags, signs, and rope as needed to indicate the boundary of an area that is not to be entered.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) buffer.
- The work will be performed using non-power hand tools.

Installation and Repair of Damaged Straw Wattles and BMP Fencing

Following installation, straw wattles (or similar product) and BMP fencing (e.g., slit fencing) around construction sites may require repair or replacement from time to time. This activity consists of installing, realigning, replacing, or re-staking wattles or BMP fencing as necessary.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of any established buffers.
- Installation, staking, creating or repairing divots, and removal/replacement of wattles or BMP fencing will be performed using non-power hand tools.

Tower Nesting Deterrent/Mooring Ball (Marine Buoy) Installation in Inactive Nests

Mooring balls will be installed in transmission towers to discourage or preclude bird nesting in potential nesting locations or in existing inactive stick nests. Mooring balls will only be installed inside the cup of an inactive nest after it is confirmed to be inactive by the Avian Biologist (See Section 3.3.1) or at locations on the tower where there are no nests but have the potential to support nests. In some cases, the inactive nests or potential nest sites may be within the default buffer distance of a different, active nest. In these cases, nesting deterrent installation will be monitored by an Avian Biologist.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.
- A crew member will climb the tower and install the buoy(s).
- Photographs will be taken of inactive nest status prior to and after buoy installation.

Tower QA/QC site finalization activities

For purposes of this Plan, tower QA/QC consists of visually inspecting towers, installing missing tower leg steps bolts, installing missing signs on towers, and fastening brass tags to the concrete foundations. Replacement of missing or damaged steel or reinstallation of improperly installed steel shall occur only where there are no active bird nests on a tower or within default buffer distance of the tower; otherwise a nest buffer reduction notification for the specific situation will be made.

- A pick-up truck will deliver supplies and the crew to the site, or access will be by foot.
- Where feasible, the truck will be parked outside of the species-specific default (Table 4) nest buffer.
- The work will be performed using manually or battery-operated hand tools; electric or pneumatic tools requiring a generator or compressor will not be used.

Resistance Testing

Following tower assembly and erection but prior to conductor installation, each tower requires resistance testing. Resistance testing involves the use of a low-voltage hand held resistance tester to measure a towers resistance given the underlying soil conditions. Two small wires are spread out by a 2-man team on foot to a distance of 150 feet and 105 feet from each tower leg (Legs A,B,C,D), staying inside the approved work limits. Each wire is then attached to grounding probes that are inserted into the ground

by hand using a hammer. Following the test, crews will remove the probe and wire and leave the site. This activity will take one hour or less per tower site. The test will determine the need for counterpoise installation, which requires the use of a skid steer with a trenching device or a mini excavator. A separate buffer reduction notification will be submitted for counterpoise installation where needed.

- Typical personnel/equipment include:
  - A 2-person crew
  - Pick-up truck for transport
  - A low-voltage hand held resistance tester to measure soil resistance. Thin probes are driven into the ground using a hammer and removed after the test is complete.
- Activity Duration: Typically, 30 minutes at the base of a tower.

The activities described above are intended to capture typical, representative activities to be performed in areas near active nests. In the event a BMP repair/installation activity requiring significantly different methods (e.g., power tools) or greater work duration within an active buffer, a normal nest buffer reduction notification would be submitted.

2.5 Nesting Bird Deterrent Methods

This Plan includes methods that may deter nesting within and adjacent to (i.e., within 300 feet; only for mooring balls or similar rubber or plastic balls) active construction areas, including substations and yards. Implementation of deterrent methods within and adjacent (in the case of mooring balls on adjacent structures) to active construction areas may reduce the potential for an active nest to restrict WOD construction activities. Effective nesting bird deterrent methods within active construction areas will reduce the likelihood that construction will result in take of an active nest. The following sections describe the nesting bird deterrent methods that can be used for the Project. Installation and maintenance of exclusionary devices by the construction team will be conducted following approval by SCE in accordance with this Plan. Use of these nesting deterrent methods will be limited to the construction phase of the project. The Avian Biologist(s) will take into consideration the potential temporal loss of breeding opportunities for species whose nesting is deterred by these methods.

SCE will implement the following types of nesting bird deterrents, as needed:

- Removal of vegetation from areas that would be directly disturbed by construction prior to the nesting season;
- Create disturbance by removing or moving equipment, vehicles, and materials on a daily basis within an active construction area;
- Use of mooring balls placed in inactive nests, directly on structures, or in other potential nest locations;
- Installation of appropriate-sized mesh netting on construction equipment and materials in staging areas, helicopter assembly and support areas, and construction yards, or other project facilities or work areas;
- Use of wire spikes placed on towers, substations, or other facilities to discourage birds from perching and nesting on these structures;
- Installation of visual deterrents such as tangle guard bird repellent ribbon in active construction areas, yards, substations, and on materials and equipment;

- Covering straw wattle and other potential nesting materials in active construction areas, yards, and substations;
- Wrapping, stuffing, or covering ends of pipes or other materials within which birds could nest;
- Use of colored gravel, such as red or white, in active construction areas, yards, and substations; and/or
- Managing construction yard trash in a manner to reduce potential point food sources in active construction areas, yards, and substations.
- Construction of alternate nest substrates, such as nest platforms.

Specific locations for the use of exclusionary or deterrent devices will be determined in coordination with the SCE biologist and the construction team. The construction manager is responsible to furnish labor and materials for bird exclusion or deterrent devices unless otherwise directed by SCE. Bird exclusion or deterrent devices shall be installed, maintained, and removed according to product specifications by the construction contractor as directed by an SCE biologist, and included in the weekly report.

Nesting Habitat Reduction. Removing potential nesting habitat within approved work areas is the first component to effectively exclude nesting birds within a construction area. To the extent feasible, prior to the onset of the nesting bird season, construction areas may be cleared of vegetation and grubbed, as appropriate to reduce potential conflicts between construction activities and nesting birds during the nesting season. Where possible, vegetation will be trimmed rather than removed or cut at ground level in lieu of grubbing. Vegetation removal will typically include removal of trees, shrubs, and herbaceous species. Prior to vegetation clearance, an Avian Biologist will conduct a preconstruction survey to confirm the absence of nesting birds, including raptors, and year-round residents, such as burrowing owl (see Chapter 3) in the area planned for vegetation removal.

Mooring Ball (Marine Buoy). Mooring balls, or similar sized rubber or plastic balls, have been utilized as nesting deterrents in transmission towers either inside the cup of an existing stick nest, or at locations in the tower where red-tailed hawks or ravens have a potential to nest, to preclude nest construction. An Avian Biologist will confirm that there are no active nests on a tower (See Section 3.3.1) before mooring balls are installed either in an inactive nest or on a portion of the tower without nests but have the potential to support nests. SCE will develop and implement a strategy to avoid or minimize the need for installing deterrents during the nesting season, recognizing that in some cases, the need for this activity may be unavoidable. To the extent feasible, mooring balls will be installed in known vacant nests prior to the onset of nesting bird season. However, there may be scenarios that SCE will install mooring balls during nesting seasons. For example, if an active nest becomes inactive in an area that construction would like to access, there may be a need to install a mooring ball before another nesting pair can utilize the nest. Following installation, the Avian Biologist and Biological Monitors will periodically inspect towers with buoys to confirm there are no negative affects to nesting as a result of mooring ball installation. Mooring balls will be installed in towers within the WOD corridor as a tool to preclude nesting during the construction phase of the project and removed at the conclusion of construction activity in a given area.

Mesh Netting. Use of mesh netting to cover equipment, stored materials and equipment, and partially constructed facilities can be a very effective means to exclude birds from suitable nesting sites within construction areas. Netting may be left in place year-around on facilities or equipment where it poses no undue hazard to wildlife. Netting will not be used outside of the nesting season in areas supporting special-status species. When not in use, netting will be stored where it is inaccessible to birds or other wildlife. By preventing birds from accessing potential nesting sites within the construction areas, conflicts between nesting activities and construction and yard operations can be reduced. Netting of vegetation would only be used under consultation with CPUC, CDFW, and USFWS.

Netting can be specially ordered for this purpose from a number of companies including: USA Bird Control (http://www.usabirdcontrol.com/), Nylon Net Co. (http://www.nylonnet.com/), and Nixalite http://www.nixalite.com/birdnetting.aspx). An example of a specification sheet for such netting (PollyNet) is included as Appendix D.

The size of the mesh grid can vary depending on the size of birds that are being excluded. Given the diversity of birds that could nest within construction areas throughout the WOD, a 0.75-inch sized mesh may be suitable for excluding most birds, including small birds such as house finches and swallows. Selection of mesh size will be coordinated with the CDFW and USFWS.

Mesh netting, if employed, must be installed and maintained according to manufacturer specifications to be provided by SCE for agency review prior to its use of any mesh netting. To increase the effectiveness of the mesh netting as a bird exclusion device, equipment or other objects should be completely covered leaving no gaps in the netting through which birds could enter and build a nest under the netting. Mesh netting shall also be inspected daily by the Biological Monitors to detect, document, and remove any trapped wildlife, and to identify and notify the construction contractor of any rips or gaps in the netting that could permit birds to pass through and to look for wildlife that have become trapped in the netting. Lizards and snakes are especially prone to becoming entangled in excessive netting draped along the ground. Therefore, installed mesh netting should not drape on the ground. Netting shall be monitored twice daily where netting is installed on vegetation. If the Construction Contractor observes wildlife inside or trapped in the mesh netting, the Biological Monitor will be contacted immediately. Any wildlife found trapped or entangled will be documented through FRED and reported through the FRED daily and weekly monitoring reports. SCE will document and correct any non-compliance related to mesh netting. Additional measures such as personnel training or changes to netting use will be taken if re-occurrence is a problem. If properly installed netting results in recurring entrapment, alternative methods will be implemented.

Bird Spikes. Use of plastic or stainless steel spikes can be effective in discouraging birds from landing on structures and to deter nest establishment. Bird spikes typically consist of groupings of stainless steel or ultraviolet-resistant polycarbonate spikes that are spaced in such a way as to prevent birds from landing and gaining a foothold on the surface to which the spikes are adhered. As birds cannot comfortably land on surfaces covered with the spikes, the likelihood that birds will attempt to build nests in these areas is low.

Bird spikes can be specially ordered for this purpose from a number of companies including: USA Bird Control (http://www.usabirdcontrol.com/) and Bird-B-Gone (http://birdbgone.com/). An example of a specification sheet for such bird spikes (Bird-B-Gone) is included as Appendix E. Bird spikes, if employed, must be installed and maintained by the Construction Contractor according to manufacturer specifications.

Bird spikes are designed to be affixed to structures to provide longer-term deterrents to birds. Therefore, use of bird spikes may be more practical to deter nesting on structures like towers and substations. Such devices are not likely practical for use on equipment, material storage areas, or contractor yards. Installation of bird spikes on tower structures concurrent with structure construction may discourage birds from nesting on tower structures during construction. Because they are affixed to structures, maintenance of bird spikes is low; however, these devices must be replaced periodically per the product specifications to maintain effectiveness.

Visual Deterrents. There are a wide range of visual deterrents that can be used to discourage birds from nesting. These range from predator decoys (e.g., plastic owls) to reflective ribbon that provides visual and

auditory discomfort to birds. Reflective ribbon such as Tangle Guard Bird Repeller Ribbon (http://www.nixalite.com/tangleguard.aspx, Appendix F) is a Mylar reflective ribbon that can be affixed to construction equipment, around the perimeter of storage yards, or on towers or other facilities, as appropriate, to scare birds from the area, thereby reducing the likelihood of nesting. Movement from wind action produces a metallic rattling sound and its holographic surface may be construed as menacing to birds. Use of reflective ribbons can be particularly effective in material storage yards and contractor yards that may be used for a long period of time. Holographic reflective ribbons can be specially ordered from a number of companies including USA Bird Control.

Material and Pipe Covers. Sheltered spaces such as pipes or stacks of stored materials provide potential nesting sites for some birds. To reduce the likelihood that birds will build nests in these areas and therefore constrain the use of construction areas, substations and yards, such materials can be covered with mesh netting (discussed above) or other materials. Routinely covering equipment and stored materials will be used as a standard management practice to deter birds from nesting in these areas.

Yards often contain suitable nesting materials or opportunities for birds, especially for cavity nesting. For example, straw wattles can be attractive to birds as they provide excellent nesting material for a wide range of species. Birds attracted to this nest material may be more likely to build a nest in close proximity to these stored materials (e.g., within a yard), which can constrain work activities. To reduce the likelihood for nesting with yards where wattles are stored, such materials should be covered so birds cannot access the wattle material to use as nesting.

Colored Gravel. Use of colored gravel in graveled construction and facility areas can be effective in discouraging ground nesting birds. The eggs of ground nesting birds are colored in a manner to be camouflaged against naturally colored substrates such as soil or pebbles. By covering the ground surface with colored gravel that contrasts sharply with the color of the birds' eggs, ground nesting birds can be effectively discouraged from nesting in such locations. Colored gravel installation will be consistent with any EIR/EIS visual resource MMs and will be removed, where required, following the completion of the project.

Trash Management. Although not a specific deterrent, management of trash on and around construction areas is important to reduce the potential for construction activities to attract birds. Trash from food waste can provide an attractive food source for birds thereby increasing the likelihood of them nesting within construction areas. Effective management of food waste and other trash will be important to avoid attracting birds to construction areas. Such management measures will include daily removal of trash from the site as well as covering trash bins with wildlife-proof lids.

These methods, either on their own or in combination with other measures discussed above, can be effectively employed to potentially discourage birds from nesting within and immediately adjacent to construction areas. However, there is no single practical method to permanently exclude birds from construction yards, staging areas, or transmission structures. Knowledge of bird behavior and interactions and adaptive management in collaboration with the Construction Contractor is essential in understanding the implementation and effectiveness of deterrents.

Nest Platforms. To deter nesting in existing or partially constructed structures (e.g., poles, lattice steel towers) in critical construction areas, SCE may elect to install constructed nest platforms in the vicinity. This methodology would prove most useful where historical data suggests it is likely that tower-nesting species such as red-tailed hawks are likely to nest in a structure (i.e., evidence of site fidelity from previous years). Typically, other deterrent methods (e.g., marine buoys, bird spikes) would be installed in the existing or partially built structure to deter nesting at that location, while an artificial nest stand is installed

nearby to offer a more enticing nest site. Nest platforms will be constructed according to SCE-provided guidelines or equivalent (see Appendix G). Nest platforms will be located within the existing SCE right-of-way (ROW) or where SCE obtains case-by-case permission from the landowner to construct the platform. Ideally, nest platforms would be located at least 500 feet from construction areas. If not feasible, the platform will be located the maximum distance possible to prevent future conflicts. If needed, buffer reductions will be implemented according to the procedure in Section 2.3.3.1.

2.6 Nest Management

The Project involves upgrading existing facilities by replacing existing transmission structures with new structures. Essentially, the lines will be deconstructed and reconstructed simultaneously. Many work locations are part of "moves" associated with single-line outages allowed for very short time periods to accommodate this deconstruction/reconstruction process without compromising system reliability. Constraints such as active bird nests that prohibit the start or continuation of construction activities during these critical outaages could have a significant effect on the Project schedule. Schedule delays may significantly affect system reliability and increase Project costs, which ultimately affects the public, and a prolongs the construction period. Delays have the potential to increase the probability of environmental impacts at other locations or to other resources.

This section of the Plan discusses the protocol to remove inactive nests in and within 300 feet of active construction areas, including yards, substations, and materials and equipment to minimize opportunities for nesting birds. Based on the Migratory Bird Permit Memorandum (USFWS, 2003), unoccupied nests (without birds or eggs) may be destroyed. This protocol does not cover listed species or bald or golden eagles. The purpose of inactive nest removal is to prevent or reduce the potential reuse of a currently inactive nest (e.g., return of a pair to the specific site) in a high-risk location. Nest removal as described in this Plan will only be applicable to removal for project construction and post-construction site restoration or remediation. Nest removal for non-project activities, including routine operation and maintenance, would be conducted pursuant to existing permits or agreements with the resource agencies. At the end of each yearly nesting season, SCE will inventory all nests proposed for mooring ball installation prior to the beginning of the following nesting season and prepare an installation schedule. To the extent feasible, inactive nest removal will take place prior to the onset of nesting bird season. However, there may be scenarios where SCE will need to remove inactive nests during nesting seasons.

The following sections describe inactive nest removal procedures for raptors, colonial bird species, and other non-listed, non-game native birds. All inactive nest removals for WOD will be documented in the FRED. Deviation from these procedures requires coordination with the CDFW.

2.6.1 Raptors

Raptors have additional protection under the CFGC. Since raptors exhibit nest site fidelity, inactive raptor nests may be protected even though no eggs or young are present. Inactive or partially built raptor nests will be mapped and documented by the Biological Monitor/Avian Biologist. Inactive raptor nests that will be impacted by WOD construction activities will be removed according to the following protocol.

1. An email notification will be sent to CDFW, CPUC, and BLM (for nests on BLM lands), or the Tribe, BIA, and USFWS for nests on the Morongo Reservation, providing details of the nest location, reason for nest removal, nest identification (ID) number, and nest removal schedule 24 hours prior to nest removal.

2. An Avian Biologist or Biological Monitor under the direction of an Avian Biologist will observe the nest for four hours (breeding season) or one-hour (non-breeding season), during favorable field conditions (good visibility, low wind) to determine whether there is any activity at the nest site;
3. If an Avian Biologist determines that the nest is unlikely to be active based on these observations (e.g. absence from the nest site and no "nest decorating" observed), the construction team will provide personnel to inspect the nest if it is not accessible by a Biological Monitor or Avian Biologist due to safety concerns. Nest removals will occur on the day that the observations were made to determine the nest is inactive.
4. For inaccessible nests (e.g., on transmission towers and poles), the construction team will take a photo of the nest contents and provide the photograph to a Biological Monitor/Avian Biologist;
5. Once a Biological Monitor or Avian Biologist has confirmed from the photo that the nest is inactive, the construction contractor will remove the nest immediately following confirmation that it is inactive.

The agencies will receive notification of the nest removal through FRED and the weekly report. Nests will not be collected or taken off site.

If necessary and feasible, nest platforms may be constructed according to SCE-provided guidelines, or equivalent (see Appendix G).

Removal of all inactive raptor nests will be documented on a daily basis through a FRED daily monitoring report and summarized in weekly FRED monitoring reports.

Burrowing Owl

Burrowing owls nest in burrows in the ground and are mostly non-migratory, meaning that burrows may be utilized (i.e., occupied) year-round as escape burrows. Additionally, because they nest in burrows in the ground, further surveys may be required (per the Staff Report on Burrowing Owl Mitigation; CDFW, 2012) to determine whether or not their nest burrows are active or their escape burrows are being used

As described in the Final EIR/EIS, preconstruction surveys will determine the presence/absence of suitable habitat (i.e., burrows) for burrowing owl occupation and/or nesting. Management of active burrowing owl nests are addressed in the species-specific Burrowing Owl Management Plan (Appendix H).

2.6.2 Colonial Birds

Based on the Migratory Bird Permit Memorandum (USFWS, 2003), colonial nesting birds (which include swifts and swallows) are highly vulnerable to disturbance. These birds may re-use nests in successive years. Destruction of unoccupied nests during or near the nesting season could result in take. Outside the species-specific nesting season, CDFW and USFWS, and the Tribe, BIA, and USFWS for nests on the Morongo Reservation, will be consulted regarding removal of colonial bird species' inactive and partially built nests. Inactive nests of colonial bird species will be removed or collapsed only after review by CDFW and USFWS, and the Tribe, BIA, and USFWS for nests on the Morongo Reservation. Currently, there are no known colonial nest within or near the ROW.

Colonial bird nests that would be impacted directly by WOD construction activities will be removed according to the following protocol:

1. A Biological Monitor/Avian Biologist will determine whether the nests are active through observation of bird sign and behavior, as described in Section 3.2. The Construction Contractor will provide the

means to inspect the nests and take a photograph of the contents if they are not accessible by the Biological Monitor/Avian Biologist.

2. If the Biological Monitor/Avian Biologist determines the nests are not active, CDFW, and USFWS, and the Tribe and BIA for nests on the Morongo Reservation, will be consulted regarding removal of colonial bird species nests. Nests will be removed or collapsed immediately after they are confirmed to be inactive and only after consultation from CDFW and USFWS, and the Tribe and BIA for nests on the Morongo Reservation. CPUC and BLM will be copied on any correspondence when CDFW and USFWS are consulted.

Nest removals will be documented in the FRED and summarized in the weekly reports. Nests will not be collected or taken off site by biologists.

2.6.3 Non-listed Special-Status, Non-Special-Status, Non-Game Bird Species Nest Removal

Removal/deterrence of non-special-status, non-game bird inactive nests, for species other than raptors, burrowing owl and colonial bird species will be completed as discussed below. For these species, nests being constructed, but not containing eggs or chicks, are considered inactive (see Section 2.2). For non-listed special-status species, nests are considered active during nest building; therefore, removal of non-listed special-status nests will only occur once the nest is confirmed inactive by this definition.

Inactive nests found within construction areas, including substations, yards, materials, and equipment, may either be removed and dropped to the ground, or have an in-nest deterrent (i.e., mooring ball, see Section 2.5) Mesh netting will not be installed in nests. The Construction Contractor will provide the means to inspect the nest and take a photograph of the contents if it is not accessible by a Biological Monitor/Avian Biologist. Nests will not be collected or taken off site.

When construction takes place during the nesting season, inactive nests will be identified during pre-construction surveys and during construction monitoring, if not previously identified during earlier project or non-project SCE surveys or monitoring.

Non-listed special-status, non-special-status, non-game bird nests that would be impacted directly by WOD construction activities will be removed according to the following protocol:

1. To determine whether a nest is inactive, a minimum of one uninterrupted, consecutive hour of monitoring in suitable conditions for detecting nesting activity is required prior to removal, as described in Section 3.2.

2. The construction contractor will provide the means to inspect the nest and take a photograph of the contents if it is not accessible by a Biological Monitor/Avian Biologist. Nest removals will occur on the day that the observations were made to determine the nest is inactive.

3. After the Biological Monitor/Avian Biologist confirms that the nest is inactive and that it does not belong to a listed species, the nest will be removed and left on site.

No nests will be taken off site or collected. The nest location will be subsequently monitored to detect any re-nesting attempts. Initial re-nesting attempts on project elements or equipment will be deterred until the bird selects an alternative nest site.

3. Field Approach

Nesting bird surveys will be carried out in several stages during the nesting season (typically January 1 through August 31, but will be based on seasonal variation). An Avian Biologist will conduct a preconstruction nest survey within ten days prior to the start of work at any given site. Preconstruction survey results are submitted to CPUC to obtain approval prior to beginning work at the site. The CPUC designated avian consultant will review the preconstruction nest surveys reports within two business days of submittal or may request additional information, as necessary. On the first day of construction at any given site, a qualified Avian Biologist will perform a pre-construction "sweep" to identify any bird nests or other resources that may have appeared since the 10-day survey. On each subsequent day of construction during the nesting season, the Biological Monitor will first perform daily sweeps at each work site to look for resources, including nesting birds. The daily sweeps will be conducted to identify new nests (partially built, active, or inactive) not detected during the preconstruction survey or clearance sweep and to also document the status (active or inactive) of known nests in a construction area. The preconstruction nest survey, and daily sweeps will be conducted within suitable habitat for nesting birds within the construction areas and include a 300-foot survey area for non-raptors and 500-foot survey area for raptors, collectively referred to as the Biological Survey Area (BSA). Prior to scheduling a survey or determining a change in status of a nest, adverse weather conditions and time of day (surveys typically should be conducted in the early morning) will be considered because these conditions reduce the likelihood of detecting nesting birds and associated nesting behavior. Care will be taken to avoid potential take of a nest due to surveying and monitoring efforts. The status of all active nests within the BSA will be documented and summarized in weekly reports and the weekly nesting bird table. This information will be provided weekly to the CPUC, CDFW, the USFWS, and the BLM via e email summary reports (see Section 3.4, Reporting).

3.1 Survey Requirements

3.1.1 Survey Experience and Training

Avian Biologists and Biological Monitors, hereafter collectively referred to as surveyors, will meet the qualifications described below. As different species have different nesting niches and different breeding strategies, surveyors must be able to readily distinguish species that may breed locally from those that do not; they must have knowledge of habitat contexts and types of behaviors to look for when evaluating nesting potential. Appendix A contains a list of the potential nesting bird species and relevant information on their nesting behaviors. This list draws on information presented in Baicich and Harrison (1997), Kiff and Irwin (1987), and the online *Birds of North America* (http://bna.birds.cornell.edu/BNA), as well as SCE's Biological Consultants' extensive experience surveying for and studying nesting birds in Southern California. All surveyors will receive training on the information and procedures detailed within this Plan.

3.1.2 Qualifications

3.1.2.1 Lead Avian Biologist

To be approved as a Lead Avian Biologist, an individual is expected to have the following average qualifications:

- Two or more years of focused experience with a range of bird species in Southern California performing nesting bird surveys or monitoring nests

- Worked on 10 or more substantial multi-season bird projects, or the equivalent, performing surveys, habitat assessments, etc. in the field. Of these, at least 8 must be in the Southwest, preferably in California

3.1.2.2 Avian Biologist

To be approved as an Avian Biologist, an individual is expected to have the following qualifications:

Worked on 3 or more substantial multi-season bird projects or the equivalent, performing surveys, habitat assessments, etc. in the field. Of these, at least 2 must be in the Southwest, preferably in California

3.1.2.3 Biological Monitor

To be approved as a biological monitor, the recommended qualifications are listed below:

Worked on construction monitoring of biological resources on 2 or more projects (6 months or more total)

3.2 Field Maps

All surveyors will be provided with maps and/or electronic tools that depict the project disturbance limits, ROW, access roads and other project features and current nest and buffer data. Surveyors will have access to the FRED database to view all previously collected data. The database and associated mapping interface will be regularly updated so real-time nest and other biological resource data will be available to the surveyors.

3.3 Nesting Season Survey Methodology

A survey will consist of a pedestrian search by an Avian Biologist for both direct and indirect evidence of bird nesting. Direct evidence will include the visual search of an actual nest location. Indirect evidence will include observing birds for nesting behavior, such as copulation, carrying food or nesting materials, nest building, adult agitation or feigning injury, feeding chicks, removal of fecal sacks, and other characteristic behaviors that indicate the presence of an active nest. Surveys will be conducted in accordance with the guidance in Martin and Guepel (1993).

The size of the survey area physically surveyed will vary according to site specific conditions. The amount of acreage covered by surveyors will be determined based upon the nesting bird activity encountered and the opinion of the qualified personnel conducting the surveys. The density and complexity of habitat type will be taken into account during survey planning to determine the field methods, number of qualified personnel, and the time needed to locate nests. Surveys located in riparian woodland and coast live oak woodland habitats, found on the WOD project, may require observations from multiple vantage points due to the density and height of vegetation, as well as, additional search effort in trees and bushes in order to locate all potential nests prior to construction. Surveys located in chaparral and coastal sage scrub habitats, found on the WOD project, will require observations from less vantage points than woodlands but due to the considerably denser vegetation may require extensive searching and longer behavior observations in order to detect all potential nests prior to construction. Surveys located in alluvial scrub and desert scrub habitats, found on the WOD project, may be completed in less time, relative to woodland, chaparral, or sage scrub due to lower vegetation density that would allow surveyors to spot nests and nesting activity. Surveys located in grassland and agriculture lands on WOD would be expected to take less time and more area would be covered over a given period, relative to denser vegetation types due to the increased visibility and uniformity found in these vegetation communities.

Additional time or surveys will be conducted if the surveyor does not feel that the area has been adequately covered. A variety of survey approaches may be needed to locate nests depending on the species likely to be encountered at each BSA. Under some circumstances, the surveyor may be able to survey a substantial portion of the BSA from one (or more) inconspicuous location(s) to detect birds entering and leaving the BSA. Sitting quietly in inconspicuous locations when other types of disturbance are absent allows observers to intensively listen and observe bird behaviors for discernible direct and indirect evidence of nesting. When moving through vegetation, surveyors will watch for distraction displays, aggressive responses and interactions, and birds flushing suddenly from atypically close range (often an indicator of a nest site). If defensive or distraction displays from birds are observed, an active nest is likely to be nearby. Surveyors will utilize visual observations of nests and bird behavior as a method for detecting potential nests.

Nests that pose constraints to the WOD activities will be directly observed or inferred by behaviors such as feeding chicks or removing fecal sacs. If the presence of a potentially active nest is suspected but cannot be confirmed, additional surveys will be conducted. If construction is planned to occur in the area and additional surveys have not determined the precise location of a nest, a disturbance free buffer may be implemented that would protect the relative location until the biologist has located the precise location of a nest. The Avian Biologist will notify the SCE Biologist of all active and potentially active nests detected during the preconstruction surveys and sweeps as well as report them in the FRED and include in weekly reports to the agencies. Preconstruction and daily clearance sweeps during nesting bird season will follow the same methodology discussed in this section to ensure that all active nests are located prior to construction occurring in the vicinity. Prior to vegetation removal activities within the nesting bird season, a sweep will be conducted by an Avian Biologist preceding the scheduled construction activity to help document and protect nests have been built since the preconstruction survey.

Once a nest is found, it will be observed for activity, if no activity is observed within a minimum one-hour monitoring period (four hours for raptor nests), the nest would be approached to check the status. The Avian Biologists will use best professional judgement regarding the monitoring period and whether approaching the nest is appropriate. If no adult or juvenile bird activity is observed within one hour (four hours for raptor nests), the nest can be considered inactive. If an inactive nest will be directly impacted by WOD activities due to the location of the nest in a tower, or vegetation in an approved project work area, then the removal procedures outlined in Section 2.6.1 of this plan will be implemented. If an Avian Biologist/Biological Monitor determines that an hour (or four hours for raptors) is not sufficient to make a determination on the nest status, then one-hour increments will be employed until a final determination regarding nesting status can be made. Every effort will be made as to not expose the nest to potential predation as a result of survey and/or monitoring activities. All nest visits will be conducted by a single surveyor and will last only as long as necessary to check the nesting stage or until circumstances necessitate departure (e.g., potential nest predator detected or sustained indications of stress by any protected bird).

When approaching a nest, surveyors will first determine whether there are any potential nest predators nearby (e.g., western scrub-jays [*Aphelocoma californica*], common raven [*Corvus corax*], cactus wren [*Campylorhynchus brunneicapillus*], and house wren [*Troglodytes aedon*]). If no predators are observed, the surveyor will approach the nest. Surveyors will be carefully aware of the possibility of additional, undetected nests nearby. They will avoid creating a scent or visual path that directs animals to the nest (e.g., leaving no trampled spot by the nest and continuing past the nest upon leaving it rather exiting on the entrance path). Surveyors will also briefly look in at least two empty potential host plants for bird nests before and after looking in the nest in an attempt to deter predators.

3.3.1 Active Nest Determination

When an active nest (defined in Section 2.2) is confirmed, the default species-specific buffer will be implemented per this Plan (Table 4) and work within the new nest buffer will cease immediately. If a bird is seen carrying food or feeding nestlings, but the vegetation is too dense for the surveyor to visually locate the nest, the approximate nest location will be inferred by the surveyor based on observed bird behaviors. Surveyors are not to risk the failure of a nest in an effort to discern an exact location or exact status (e.g., number of eggs, size of nestlings, etc.). If a buffer reduction is requested by the contractor, the surveyor will then continue to observe the nest and parental behavior to determine whether a reduced buffer can be appropriately implemented. Active nests will be monitored before implementing a reduced buffer. Prior to implementation, all buffer reductions will follow the process outlined in Section 2.3.3.

A nest completion date can be estimated by combining the stage of nesting at discovery and the known typical nesting duration for the species. However, because the date will be estimated, it is important to note that a nest may be active for a shorter or longer period of time than that estimated. For altricial species, a time buffer from three days up to three weeks will be added to every nest to allow for post-fledging nest dependence.

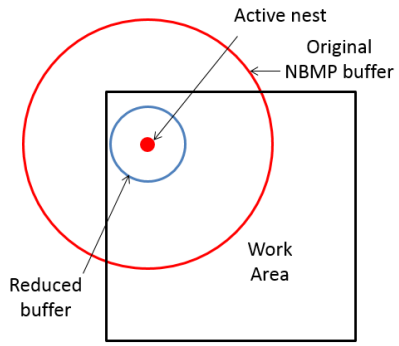
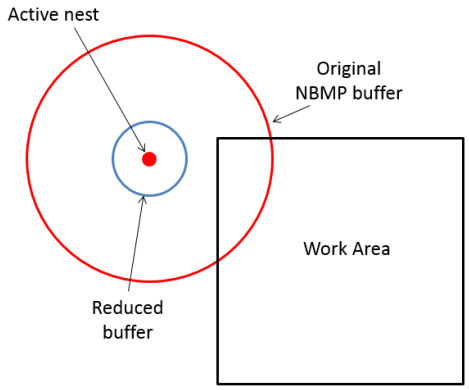
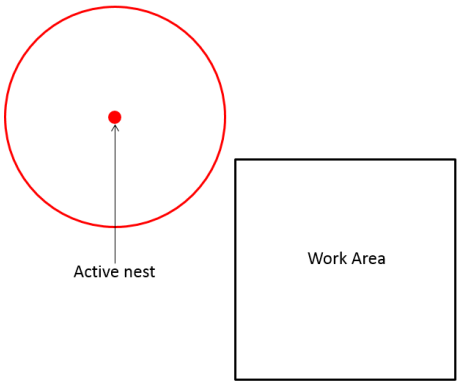
3.4 Monitoring

As a part of construction monitoring, Avian Biologists and Biological Monitors will check the status of any active nests within the BSA and update the nest monitoring database (Nest Event). This will ensure that nests around active construction areas are being given proper attention. The Biological Monitors will be responsible for monitoring the contractor's adherence to the established nest buffers, the contractor's adherence to the conditions of buffer reduction approvals, and monitoring the nesting birds' behavioral reaction to construction throughout the day during active construction.

Both nests with default buffers and nests with reduced buffers will initially require frequent monitoring to establish if the buffer is sufficient to prevent impacts to the nests. Thereafter, for most species, active nests will be monitored on intervals no longer than every four days (weekly for birds with longer nesting periods, over two months, such as ravens, great horned owls and red-tailed hawks). Under the default buffers, active nests do not require further monitoring once work is completed in the area. For nests with reduced buffers, the same monitoring protocol will be followed until the nest is determined to be fledged or inactive. New nests discovered after work completion in an area would not require monitoring. Table 5 illustrates the monitoring frequency that SCE will utilize when an active nest is located.

Avian Biologists will be responsible for documenting new nests, providing status updates of previously identified active nests, and monitoring implemented buffers within and adjacent to construction areas. They will utilize construction maps, flagging, staking, and signage, and in-field communication to monitor for compliance with plan requirements. Avian Biologists and Biological Monitors will utilize monitoring methods as described in Sections 2 and 3 to minimize disturbance to active nests while conducting updates and documenting behavioral reaction to construction. Nests updates may be modified to accommodate adverse weather conditions where flushing an adult off of the nest could threaten the nest outcome or to accommodate nests noted as being sensitive to human presence.

Table 5. Active Nest Monitoring Schedule

Work Location		Nest Location	Frequency
Between original buffer and reduced buffer	Inside work area		Max interval every 4 days (weekly for some large-bodied species) until nest fledges or declared inactive
	Not inside work area		Max interval every 4 days (weekly for some large-bodied species) until nest fledges or declared inactive
Not in nest buffer	N/A		Max interval every 4 days (weekly for some species) until comple-tion of work

For some hazardous construction activities (i.e. wire stringing) it is unsafe for the biological monitor to be too close to construction. In these scenarios, the biological monitors will observe the activity from outside of the ROW at a safe distance. Where feasible and safe around these activities, the monitor will still perform a clearance sweep at the beginning and end of the day to confirm the status of the active nests present in the BSA around the site. All nest visits will be documented in the FRED (for biological resources), and reported to agencies, as requested.

In the case of precocial species such as killdeer, Biological Monitors will track broods after hatching to ensure chicks are not harmed by construction activities until chicks are capable of flying or are no longer

found within active construction areas. Avian biologists may recommend chick fencing or other measures to prevent chicks from entering roads or work areas, as needed [cross-reference to Section 2.3].

3.5 Reporting

Pre-construction nest survey reports will be submitted to the CPUC and BLM electronically via the FRED and will include the time, date, and duration of the survey; identity of the surveyor(s), a list of species observed, and electronic data and maps identifying nest locations and the boundaries of established buffer zones. The electronic data set will be updated following each pre-construction survey and will be accessible to CPUC and BLM on the FRED Database. Regular calls will take place between SCE and the agencies to discuss the weekly reports.

The CPUC will receive the project plan of the day listing scheduled project activities for that day. Daily and weekly biological monitoring reports will be generated for WOD and provided to agencies. All data collected for the daily reporting will be input from the field on hard copy paper forms or mobile smart-phones using an offline form, and then entered/uploaded online into the FRED. New nest events will be entered into the FRED and agency biologists will be notified by automated email within 24 hours. A nesting bird table, updated weekly for submittal to the CPUC and CDFW, will show the current status of all active nests within the BSAs, distances of disturbance-free buffers that have been implemented to avoid nest failures, proximity to active construction activities, construction activities occurring, and estimated fledge date. Further detail on data collection and processing is provided in 3.4.1 Data Sheets.

An annual report shall be submitted to the CPUC, CDFW, USFWS, and BLM by November 31st for each year WOD is under active construction or post-construction remediation or restoration providing a summary of the results of nest monitoring activities throughout the year, including reported nest success and failures. SCE will provide USFWS a summary spreadsheet of all nests tracked as a part of WOD for the previous nesting season. An annual meeting to review the annual report and “lessons learned” will occur prior to the start of the subsequent nesting season. The annual report will include sufficient substance and detail to provide the basis for the adaptive management and evaluation of lessons learned. Specific contents and format of the annual report will be reviewed and approved by the lead agencies in consultation with the resource agencies.

3.5.1 Data Sheets

All nesting bird data will be entered into the FRED Bird Nest Events (online forms). This will provide the SCE biologist, Avian Biologist, and Biological Monitor current information pertaining to a specific nest, as well as the ability to print maps with the nest data (nest location and buffers). The data fields that have been established in the FRED are defined in Table 6. The FRED fields represent the most current fields and may be subject to updates as improvements to the FRED Database are made. Figure 6 illustrates the FRED Avian Monitoring QA/QC Process.

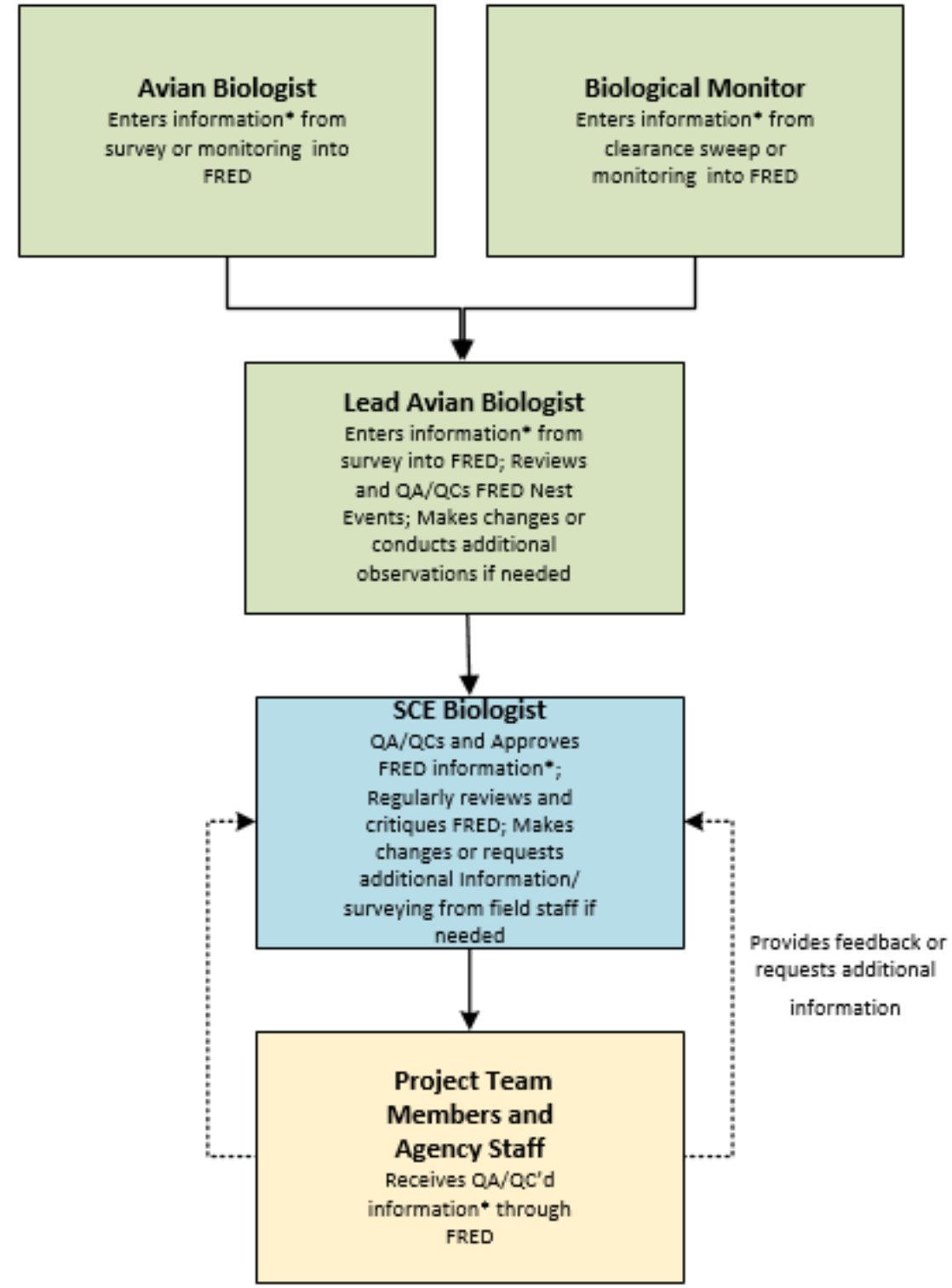


Figure 6. FRED Avian Monitoring QA/QC Process

Table 6. Field Definitions for Online Entry into the FRED

Field	Explanation
Date	Use calendar icon to choose date.
Time	Time (defaults to time of data entry).
Nest number	A unique identifier entered by the surveyor. The name will consist of the surveyor's initials and a number. For example – KF1.
Lead Monitor / SME	Segment Lead's name
Surveyor	Your name.
Segment	Pull-down menu for the segment numbers.
GPS coordinates UTM (meters)	Collected in latitude and longitude. Make sure that measuring device (Garmin etc.…) is set to proper units. Zone:___ ; N or S ; _____mE and _____ mN ▪ Ground Buffer Radius in feet. "O" for no buffer drawn ▪ Helicopter Buffer Radius: in feet.
Buffer Implemented	Yes or No
Device type	Pull-down menu choices are: "Garmin/Other-Recreational Grade (+/-40')", Smart Phone w/GPS-Advanced Recreation Grade (=/-10-15')", Trimble (Yuma)/Other-Professional Resource Grade (+/-1–3 meter)", Trimble (GOXH)/Engineering Survey Grade (Sub Meter accuracy)", "Launched From Map", and "Device Unavailable"
Species	Pull-down menu based on the four-letter codes defined in Appendix A.
Offset	Check box for noting if the nest is offset from the GPS coordinates.
Direction	Pull-down menu of eight directions.
Distance in meters	How far the nest is from the GPS coordinates (in feet). In meters or feet?
Nest location description	Where is the nest (specific description)? Be specific.… anything that can help another person finds the nest; i.e., nest within top half of the oak tree or nest is located within a rocky outcrop. Use descriptive words. TAKE A PICTURE of the nest, at least one overview, and one close-up.
Nest status	Active, Inactive, Inactive Vacant Raptor, Removed, Deterrent Installed. Active is a nest with eggs, nestlings, or recent fledglings. Inactive is a nest that no bird is currently using.
Number of eggs	If able to observe eggs, number of eggs observed.
Number of chicks	If applicable, number of chicks observed in nest.
Estimated fledge date	General estimate of how long before young fledge. Use Appendix A for reference.
Nest activity	Information on activity/behaviors observed. "Feeding Chicks", "Fledglings close to nest" (i.e. branching), "Incubation", "Nest Building", "No Activity Observed", Failed/Non-Project related, Failed/Project-related, Fledged, or Unknown Outcome.
Height from ground in feet	How high the nest is from the ground measured in feet.
Distance from work area in feet	Approximate distance from nest to the active work area in feet.
Distance from access road in feet.	Approximate distance from the nest to the access road in feet.
Substrate/species	What is the nest in (e.g. plant species, structure, bridge, and ground)? TAKE PICTURES from at least three directions.

Table 6. Field Definitions for Online Entry into the FRED

Field	Explanation
Nest name	A unique identifier entered by the surveyor. The name will consist of the surveyor's initials and a number. For example – KF1.
Location description/habitat	General area of the nest in relation to the surrounding vegetation/unique features. Be specific… anything that can help another person find the nest. i.e.: nest is located x-feet north/northwest of access road. Or, nearest street address, cross streets etc. TAKE A PICTURE.
Is there an offset?	Are the measurements skewed from the actual location of the nest?
Offset directions	Pull-down menu options are: "N," "NE," "NW," "S," "SE," "SW", "E," OR "W."
Offset distance in feet	0.000
Descriptions of existing work activities.	Describe work activities currently occurring at nest site and adjacent to the nest site. Be sure to cover all directions (i.e. N/S/E/W). Note which activity is highest disturbance.
Environmentally Sensitive Area established?	Yes or No
ESA type	Two options: ground or helicopter
Work area affected?	Yes or No.
Name of road affected?	Access Road or Named Road.
SCE Notes	Record of agency engagement for the nest event.
Agency-reduced buffer in feet	Current Ground/Helicopter Buffer Radius
Tower or Work Area ID	Tower X or Construct X

Notes:

SME = subject matter expert
UTM = Universal Transverse Mercator

4. Plan Approval and Amendment

This Plan was initially implemented following approval or concurrence by CPUC, BLM, CDFW, and USFWS. Any proposed revision or amendment must be reviewed by BLM and CPUC to confirm consistency with MMs adopted by the lead agencies in the BLM Record of Decision and CPUC Decision, and CDFW and USFWS will be consulted regarding consistency with the respective state and federal wildlife statutes. For amendments affecting tribal resources, the Tribe and BIA will also be consulted.

Minor amendments or clarifications to the Plan will be implemented following coordination with the USFWS and CDFW, and concurrence from CPUC and BLM staff. Minor amendments or clarifications may include, but are not necessarily limited to, additional blanket or programmatic buffer reductions/exemptions, additional construction activities and disturbance levels not already included in Table 1. Major amendments to this plan that may result from changes in applicable regulations, which alter the procedures outlined in this plan, will be developed in coordination with the USFWS and CDFW, and submitted to CPUC and BLM for concurrence prior to implementation. Following concurrence of minor or major amendments, a revised version of the plan with date of revision will be provided to CDFW, USFWS, CPUC, and BLM.

5. References[7]

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Wiley, James W. 1975. "The Nesting and Reproductive Success of Red-tailed Hawks and Red-shouldered Hawks in Orange County, California, 1973." The Condor. Vol. 77, pp. 133-139.

[7] All references used in preparation of this Plan should be referenced in this section and called out in the body of the Plan.

6. Revisions

Date	Description of Revision	Contact
May 2019	Clarification regarding CDFW's response to non-listed special-status species nest buffer reductions; clarification that nest removals will occur on same day as inactive nest determinations; addition/update/clarification of appendices; amended notification/approval process for plan amendments; minor editorial updates.	Sylvia Granados (sylvia.granados@sce.com; 626-221-5695)

Appendix A
Species Information List

West of Devers

Breeding Bird List

Bird Banding Laboratory (BBL) 4-letter Code	Common Name	Scientific Name	Species Previously Observed within Project	Segment Number of Concern for Species (Present, Probable, Possible, or Unlikely)	Potentially Impacted Breeding Species?	Nest Location	Vertical Height	Breeding Season	Nest Cycle	Conservation Status
	Ducks, Geese, and Swans	**Anatidae**								
CAGO	Canada Goose	*Branta canadensis*	No	Possible - 4	Yes	Nest location is extremely variable. Typically nests on drier, slightly elevated sites near water.		March through August; single brood	Only female incubates eggs for 25-28 days. Chicks: precocial and fledge at 7-8 weeks old.	none
WODU	Wood Duck	*Aix sponsa*	No	Possible - 4	Yes	Nests in preformed cavities close to or over water.		April through July; double brood	Only female incubates eggs for about 30 days. Chicks: precocial and leave nest in morning about 24 hours after hatching.	none
MALL	Mallard	*Anas platyrhynchos*	Yes	Possible - 3, 4	Yes	Usually nests on ground in an upland area near water; nest placed under overhanging cover or in dense vegetation for maximum concealment.	Ground	March through June unless feral population; single brood in wild populations, double brood in feral populations.	Only female incubates eggs for 26-29 days. Chicks: precocial and take to water soon after hatching.	none
CITE	Cinnamon Teal	*Anas cyanoptera*	No	Possible - 3, 4	Yes	Nests below matted, dead stems of vegetation. Female approaches nest through tunnels in vegetation. Usually <1 M from water.		March through August; single brood	Only females incubate eggs for 21-25 days. Chicks: precocial and leave nest within 24 hours of hatching.	none
RUDU	Ruddy Duck	*Oxyura jamaicensis*	No	Possible - 3, 4	Yes	Nests in aquatic emergent vegetation.		May through September; single brood	Female incubates eggs for 20-26 days. Chicks: precocial and leave nest within 24 hours of hatching.	none
	New World Quail	**Odontophoridae**								
CAQU	California Quail	*Callipepla californica*	Yes	Probable - 1, 2, 3, 4, 5	Yes	Nest on the ground in a variety of habitats.	Ground	March through July; single brood	Female incubates eggs for 21-23 days. Male stays nearby. Chicks: precocial and very active soon after hatching.	none
GAQU	Gambel's Quail	*Callipepla gambelii*	Yes	Probable - 6; possible - 5	Yes	Nest site is almost always on the ground and usually concealed under a shrub or in some other protected site, such as within a patch of cactus. Tree nests are occasionally constructed 2–10 m above ground if a suitable platform can be found.	Ground	March through June; single brood	Females incubate eggs for 21-23 days (male usually nearby). Chicks: precocial nestlings are not fully independent until about 2.5-3 months after hatching.	none

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	Grebes	**Podicipedidae**								
PBGR	Pied-billed Grebe	*Podilymbus podiceps*	No	Possible - 4	Yes	Nest on floating platforms, most often among tall emergent vegetation.		April through July; one to two broods	Incubation varies from 23 to 27 days. Chicks: semi-precocial and leave nest less than 1 hour after hatching.	none
	Herons, Bitterns, and Allies	**Ardeidae**								
GBHE	Great Blue Heron*	*Ardea herodias*	Yes	Possible - 3, 4	Yes	Nests are found mostly in trees, up to 30 m or more above ground. Colonial nester.		January through July; double brood	Both sexes incubate eggs for 25-29 days. Chicks: semi-altricial and leave nest at 81 days old.	CDF: S
GREG	Great Egret	*Ardea alba*	Yes	Possible - 3, 4	Yes	Nests typically on or near the top of trees or woody vegetation. Colonial nester.	24-30 m	March through June; single brood	Both sexes incubate eggs for 23-27 days. Chicks: semi-altricial and leave nest at 62-67 days of age.	none
SNEG	Snowy Egret	*Egretta thula*	Yes	Unlikely - 3, 4	Yes	Breeds by water in variety of substrates like trees, shrubs, or thickets. Colonial nester.		April through July; single brood	Both sexes incubate eggs for 22 days. Chicks: semi-altricial and leave nest as early as 10 days of age and remain in vicinity of colony for 7-8 weeks.	none
CAEG	Cattle Egret	*Bubulcus ibis*	Yes	Unlikely - 3, 4	Yes	Nest sites vary from medium-tall upland trees to low trees or shrubs in swamps or reed vegetation in marshes. Colonial nester.		April through September; single brood	Both sexes incubate eggs for 22-23 days. Chicks: semi-altricial leave nest about 20 days after hatching, begin flight around 30 days, and become independent at about 45 days old.	none
BCNH	Black-crowned Night-Heron*	*Nycticorax*	Yes	Possible - 3, 4	Yes	Breeds by water in variety of substrates like shrubs, trees, or thickets. Colonial nester.	Up to 150 feet	January through June; double brood	Only female incubates eggs for 24 days. Chicks: semi-altricial leave nest for nearby branches at 6 to 7 weeks.	CDFW: SA
	New World Vultures	**Cathartidae**								
TUVU	Turkey Vulture	*Cathartes aura*	Yes	Unlikely - 2, 3, 6	Yes	Nest on bare soil, wood, leaf litter, punk, straw, etc. in secluded undisturbed dark sites like caves, rock crevices or maybe even an abandoned building.	Up to 20 feet	March through June; single brood	Both sexes incubate eggs for 37-41 days. Chicks: semi-altricial and fly at 11 weeks old.	none

West of Devers

Breeding Bird List

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	Ospreys	**Pandionidae**								
OSPR	Osprey*	*Pandion haliaetus*	Yes	Unlikely - 3, 4 (previous sightings in Segments 3, 4)	Yes	Wide variety of natural and artificial sites including trees, cliffs, power poles, and nesting platforms.	40-100 feet	April through August; single brood	Both sexes incubate eggs for 37 days. Chicks: semi-precocial and leave nest at 50-62 days old.	CDF: S CDFW: WL
	Hawks, Kites, Eagles, and Allies	**Accipitridae**								
WTKI	White-tailed Kite*	*Elanus leucurus*	Yes	Possible - 1,2, 3, 4 (previous sightings in Segments 3, 4)	Yes	Nests in trees on habitat edges. Most nests are places in upper third of trees.	9-160 feet	March through June; will double brood	Only female incubates eggs for 30-32 days. Chicks: altricial and fly 4-5 weeks after hatching.	BLM: S CDFW: FP
NOHA	Northern Harrier*	*Circus cyaneus*	Yes	Unlikely - 3 (previous sightings in Segments 3, 6)	Yes	Nests on ground in open (treeless), vegetated habitats, including drained and non-drained wetlands as well as uplands.		April through September; single brood	Only female incubates eggs for 30-32 days. Chicks: semi-altricial and fly at 29-35 days. Young may roost in vicinity of nest for 2-4 weeks after flying.	CDFW: SSC
COHA	Cooper's Hawk*	*Accipiter cooperii*	Yes	Possible - 1, 2, 5; Probable - 3, 4 (Previous sightings in Segments 1, 3, 4, 6)	Yes	Breeds in forests in trees.	20-60 feet	March through July; single brood	Only female incubates eggs for 36 days. Male stays nearby and brings food. Chicks: semi-altricial and fly at 30-34 days old.	CDFW: WL
RSHA	Red-shouldered Hawk	*Buteo lineatus*	Yes	Possible - 1, 2, 3, 4, 5	Yes	Breeds in moist woodland in trees.	20-60 feet	March through June; single brood	Both sexes (but mostly female) incubate eggs for 23-25 days. Chicks: semi-altricial and fly at 5-6 weeks old.	none
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	Yes	Probable - 1, 2, 3, 4 , 5, 6	Yes	Breeds in wide variety of habitats in a tall tree.		February through September; single brood	Both sexes incubate eggs for 28-32 days. Chicks: semi-altricial and fly at 6 weeks old.	none
GOEA	Golden Eagle*	*Aquila chrysaetos*	Yes	Unlikely - 2, 3, 4; Possible 5, 6 (previous sightings in Segments 4, 5)	Yes	Nests on rock ledges of outcrops or cliffs.		February through May; single brood	Female mostly incubates eggs (male may help) for 43-45 days. Chicks: semi-altricial and leave nest at 63-70 day old.	BLM: S CDF: S CDFW: FP, WL
	Rails, Gallinules, and Coots	**Rallidae**								
VIRA	Virginia Rail	*Rallus limicola*	Yes	Possible - 3, 4	Yes	Nests in robust emergent vegetation (e.g. cattails, bulrush) with nest touching or short distance above water surface.		April through July; double brood	Both sexes incubate eggs for 18-20 days. Chicks: precocial and depart the nest within 3-4 days after hatching. Adults may	none

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									bring chicks back to the nest at night for several days.	
SORA	Sora	*Porzana carolina*	No	Unlikely - 3, 4	Yes	Nests in robust or fine-leaved emergent vegetation with shallow water.		May through August; single brood	Both sexes incubate eggs for 16-19 days. Chicks: semi-precocial and leave nest 3-4 days after hatching.	none
AMCO	American Coot	*Fulica americana*	Yes		Yes	Nests in waterside vegetation on the ground or at water level in branches.		March through July	Both sexes incubate eggs for 21-24 days. Chicks: precocial but stay in nest for 3-4 days.	none
	Plovers and Lapwings	**Charadriidae**								
KILL	Killdeer	*Charadrius vociferus*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Breeds in open places usually in areas with short grass, sand or gravel.	Ground	March through June; sometimes double brood	Both sexes incubate eggs for 24-26 days. Chicks: precocial and leave nest soon after hatching.	none
	Pigeons and Doves	**Columbidae**								
ROPI	Rock Pigeon	*Columba livia*	Yes	Probable - 1, 2, 3, 4, 5, 6	Not protected					none
BTPI	Band-tailed Pigeon	*Patagioenas fasciata*	Yes	Possible - 1, 2, 3, 4; Unlikely - 5	Yes	Nest in in a tree or shrub usually in areas with oak trees.		March through November; probably several broods	Both sexes incubate eggs for 18-20 days. Chicks: altricial and fledge at 25-30 days old.	none
EUCD	Eurasian Collared-Dove	*Streptopelia decaocto*	Yes	Probable - 1, 2, 3, 4, 5, 6	Not protected					none
WWDO	White-winged Dove	*Zenaida asiatica*	Yes	Unlikely - 6	Yes	Nests on tree branches in interior of dense woodlands along riparian areas. Colonial nester.		May through August; two or more broods	Both sexes incubate eggs for 15-17 days. Chicks: altricial and fledge at 13-18 days old.	none
MODO	Mourning Dove	*Zenaida macroura*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Nests in a wide variety of habitats, typically in a tree or shrub.		February through September; several broods	Both sexes incubate eggs for 14-15 days. Chicks: altricial and fledge at 13-15 days old.	none

West of Devers

Breeding Bird List

Bird Banding Laboratory (BBL) 4-letter Code	Common Name	Scientific Name	Species Previously Observed within Project	Segment Number of Concern for Species (Present, Probable, Possible, or Unlikely)	Potentially Impacted Breeding Species?	Nest Location	Vertical Height	Breeding Season	Nest Cycle	Conservation Status
COGD	Common Ground-Dove	*Columbina passerina*	Yes	Possible - 3; Unlikely - 1, 2, 4	Yes	Nests in a variety of locations on and above ground. Ground nests in fields, above-ground nests in bushes, low horizontal tree branches, palm fronds, stumps, fence posts, or vines.	0-10 feet	February through October; two to four broods	Both sexes incubate eggs for 12-14 days. Chicks: altricial and capable of flight at 11 days old, but may not depart nest until 14 days old.	none
	Cuckoos, Roadrunners, and Anis	**Cuculidae**								
YBCU	Western Yellow-billed Cuckoo*	*Coccyzus americanus occidentalis*	No	Unlikely - 3, 4	Yes	Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.		May through September; single brood	Both sexes incubate eggs for 11-12 days. Chicks: altricial and leave the nest at 5-8 days old.	ESA: Proposed Threatened CESA: Endangered BLM: S USFS: S USFWS: BCC
GRRO	Greater Roadrunner	*Geococcyx californianus*	Yes	Probable - 2, 3, 4, 5, 6; Possible - 1	Yes	Nests in thorny bush, small tree, or cactus 1-3 m above ground.	< 10 feet	March through October; double brood	Both sexes incubate eggs for 19-20 days. Chicks: altricial and leave the nest at 14-25 days old.	none
	Barn Owls	**Tytonidae**								
BANO	Barn Owl	*Tyto alba*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Nests in cavities in trees, buildings, crevices in rocks, outcrops, cliffs and quarries.		January through May; often double broods	Only female incubates eggs for 32-34 days. Male stays nearby and brings food. Chicks: altricial and fly at 60 days old.	none
	Typical Owls	**Strigidae**								
WESO	Western Screech-Owl	*Otus kennicottii*	Yes	Possible - 1, 2, 3, 4; Unlikely - 5	Yes	Nests in deciduous tree cavities or suitable nest boxes.	6-20 feet	March through July; single brood	Only female incubates eggs for 33-34 days. Chicks: limited information	none
GHOW	Great Horned Owl	*Bubo virginianus*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Nests in woodlands in natural cavities in a tree, in a fork, on a rock ledge or in a cave.		January through May; single brood	Mostly female incubates eggs for 26-35 days. Chicks: altricial and leave the nest at 4-5 weeks	none

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Breeding Bird List

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BUOW	Burrowing Owl*	*Athene cunicularia*	Yes	Possible - 1, 2, 3, 4, 5, 6	Yes	Nests in burrows in open grassy places or at the edge of agriculture.	Ground	February through August; single brood	Only female incubates eggs for 27-30 days. Male stays nearby and brings food. Chicks: altricial and fledge at 40-45 days old.	BLM: S CDFW: SSC USFWS: BCC
LEOW	Long-eared Owl	*Asio otus*	No	Possible - 3, 4	Yes	Nests in trees and uses stick nests built by another species of bird.		March through June; single brood	Only female incubates eggs for 26-28 days. Chicks: semi-altricial and leave nest at 21 days when still flightless to reside in surrounding vegetation.	CDFW: SSC
	Goatsuckers	**Caprimulgidae**								
LENI	Lesser Nighthawk	*Chordeiles acutipennis*	No	Possible - 5, 6; Unlikely - 2, 3, 4	Yes	Nests on bare, flat ground in areas strewn with pebbles.	Ground	April through July; one or two broods	Only female incubates eggs for 18-19 days. Chicks: semi-precocial and capable of walking 1-2 days after hatching. First flight at 21 days old.	none
COPO	Common Poorwill	*Phalaenoptilus nuttallii*	Yes	Possible - 5, 6; Unlikely - 2, 3, 4	Yes	Nests on bare ground most commonly, and occasionally on gravel, rock, pine needles or leaf litter.	Ground	May through September; double brood	Both sexes incubate eggs for 20-21 days. Chicks: precocial and fledge at 20-23 days of age.	none
	Swifts	**Apodidae**								
WTSW	White-throated Swift	*Aeronautes saxatilis*	Yes	Possible - 1, 2, 3, 4, 5, 6	Yes	Nests in rock cracks and crevices on cliffs.		May through July	Incubate eggs 20-27 days. Chicks: altricial and fledge maybe at 25 days - little information known.	none
	Hummingbirds	**Trochilidae**								
BCHU	Black-chinned Hummingbird	*Archilochus alexandri*	Yes	Probable - 3, 4; Possible - 1, 2, 5; Unlikely - 6	Yes	Nest in trees and shrubs.		April through June; two or three broods	Only female incubates eggs for 13-16 days. Chicks: altricial and fledge at 21 days old.	none
ANHU	Anna's Hummingbird	*Calypte anna*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Nest in a wide variety of sites wherever a narrow support for a nest is present.		December through June; two or three broods	Only female incubates eggs for 16-17 days. Chicks: altricial and fledge at 25-26 days old	none

West of Devers

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COHU	Costa's Hummingbird*	*Calypte costae*	Yes	Probable - 2, 3, 4, 5, 6; Possible - 1	Yes	Nests in trees and shrubs.		April through July; single brood	Only female incubates eggs for 15-18 days. Chicks: altricial and fledge at 20-23 days old.	ABC: WLBCC
ALHU	Allen's Hummingbird	*Selasphorus sasin*	No	Possible - 1, 2, 3; Unlikely - 4	Yes	Nests in shrubs and trees. Favors riparian areas.		February through July; double broods	Only female incubates eggs for 17-22 days. Chicks: altricial and fledge at 22-25 days old.	none
	Woodpeckers and Allies	**Picidae**								
ACWO	Acorn Woodpecker	*Melanerpes formicivorus*	Yes	Probable - 1, 3, 4; Possible - 2, 5	Yes	Nest in a hole in a tree in open woodland or partly wooded areas; will nest in poles.		April through July; two or three broods	Both sexes incubate eggs for 11-12 days. Chicks: altricial and fledge at 31 days old.	none
LBWO	Ladder-backed Woodpecker	*Picoides scalaris*	No	Probable - 5, 6	Yes	Nests in cavities in Joshua tree, willow, cottonwood, walnut, oak, hackberry, pine, mesquite, and agave.		April through July; single brood	No information on incubation. Chicks: altricial.	none
NUWO	Nuttall's Woodpecker	*Picoides nuttallii*	Yes	Probable - 1, 2, 3, 4; Possible - 5, 6	Yes	Nest in cavities in tree trunks, typically in dead wood.		April through June; single brood	Both sexes incubate eggs for 14 days. Chicks: altricial and fledge at 29 days old.	none
DOWO	Downy Woodpecker	*Picoides pubescens*	Yes	Probable - 3, 4; Possible - 1, 2	Yes	Nest in cavities in tree trunks, typically in dead wood.		April through May; double brood	Both sexes incubate eggs for 12 days. Chicks: altricial and fledge at 20-22 days old.	none
NOFL	Northern Flicker	*Colaptes auratus*	Yes	Probable - 3, 4; Possible 1, 2; Unlikely - 5, 6	Yes	Nests in tree trunks in open or sparsely wooded areas; more often in live wood.		April through June; single brood	Both sexes incubate eggs for 11-13 days. Chicks: altricial and fledge at 25-28 days old.	none
	Caracaras and Falcons	**Falconidae**								
AMKE	American Kestrel	*Falco sparverius*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Breeds in a cavity and will use nest boxes.		March through July; may double brood	Mostly the female incubates eggs for 29-30 days. Male stays nearby and brings food. Chicks: semi-altricial and leave nest at 30 days old.	none

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Breeding Bird List

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PEFA	Peregrine Falcon*	*Falco peregrinus*	Yes	Possible - 5, 6; Unlikely - 1, 2, 3, 4 (previously sightings in Segments 1, 6)	Yes	Nest is on a cliff ledge.		March through June; single brood	Both sexes incubate eggs for 28-29 days. Chicks: semi-altricial and fly at 35-42 days old.	ESA: Delisted CESA: Delisted CDF: S CDFW: FP USFWS: BCC
PRFA	Prairie Falcon*	*Falco mexicanus*	Yes	Possible - 5, 6; Unlikely - 1, 2, 3, 4 (previously sightings in Segment 6)	Yes	Nest on a ledge under an overhang on a rock outcrop or cliff.		March to May; single brood	Mostly the female incubates eggs for 29-31 days. Male rarely assists but brings food. Chicks: semi-altricial and leave nest at 40 days old.	CDFW: WL USFWS: BCC
	Tyrant Flycatchers	**Tyrannidae**								
SWFL	Southwestern Willow Flycatcher*	*Empidonax traillii extimus*	No	Possible - 3, 4	Yes	Breeds in riparian woodlands.		May through August; single brood	Only female incubates eggs for 12-13 days. Chicks: altricial and fledge at 12-15 days old.	ESA: Endangered CESA: Endangered ABC: WLBCC
PSFL	Pacific-slope Flycatcher	*Empidonax difficilis*	No	Possible - 3, 4	Yes	Nests in forks of trees, cavities in trees or cut banks, shelves on banks, behind loose flaps of bark, and artificial sites.		April through June; double brood	Only female incubates eggs for 13-16 days. Chicks: altricial and leave nest at 15-17 days old.	none
BLPH	Black Phoebe	*Sayornis nigricans*	Yes	Probable - 1, 2, 3, 4, 6; Possible - 5	Yes	Breeds around development. Mud nest is on a ledge with some type of overhang or under a bridge.		March through June; double brood	Unsure if only female incubates eggs for 15-18 days. Chicks: altricial and fledge at 21 days old.	none
SAPH	Say's Phoebe	*Sayornis saya*	Yes	Possible - 1, 2, 3, 4, 5, 6	Yes	Breeds in open areas. Nest is on a ledge with some type of overhang or under a bridge but nest not made of mud.		March through June; double brood	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 14-18 days old.	none
ATFL	Ash-throated Flycatcher	*Myiarchus cinerascens*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Nests in cavities in open deciduous woodland.		May through July; single brood	Only female incubates eggs for 15 days. Chicks: altricial and fledge at 16-17 days old.	none

Breeding Bird List

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BCFL	Brown-crested Flycatcher	*Myiarchus tyrannulus*	No	Unlikely - 6	Yes	Nests in cavities, such as woodpecker holes or natural cavities.		April through July; single brood	Only female incubates eggs. No information on departure from nest.	none
CAKI	Cassin's Kingbird	*Tyrannus vociferans*	Yes	Probable - 1,2, 3, 4	Yes	Nests in trees in open country. Build a cup nest.		April through June; double brood	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 14 days old.	none
WEKI	Western Kingbird	*Tyrannus verticalis*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Nests in trees in open country. Build a cup nest.		April through June; double brood	Both sexes incubate eggs for 12-14 days. Chicks; altricial and fledge at 13-19 days old.	none
	Shrikes	**Laniidae**								
LOSH	Loggerhead shrike*	*Lanius ludovicianus*	Yes	Probable - 3, 4, 5, 6; Possible - 1,2 (previous sightings in Segments 5, 6)	Yes	Nest in a dense shrub near open country. Build a bulky cup nest.		February through June; two or three brood	Only female incubates eggs for 14-16 days. Male stays nearby and brings food. Chicks: altricial and fledge at 17-21 days old.	CDFW: WL
	Vireos	**Vireonidae**								
LBVI	Least Bell's Vireo*	*Vireo bellii pusillus*	Yes	Present - 3,4	Yes	Nest in dense riparian. Nest a deep cup usually within 3 feet of ground.		April through August; double brood	Both sexes incubate eggs for 14 days. Chicks: altricial and fledge at 10-12 days old.	ESA: Endangered ESA: Endangered
HUVI	Hutton's Vireo	*Vireo huttoni*	No	Possible - 3,4	Yes	Nests situated near ends of horizontal branches, suspended from forks of twigs and occasionally from foliage.		February through August; one or two broods	Both sexes incubate eggs for 14-16 days. Chicks: altricial and fledge at 14-17 days old.	none
	Crows, Jays and Magpies	**Corvidae**								
WESJ	Western Scrub-Jay	*Aphelocoma californica*	Yes	Probable - 1, 2, 3, 4; Possible - 5	Yes	Breeds in woodlands and scrubs. Nest is usually in shrub, tree, bush, or vine tangle, usually pretty densely covered.		March through June; single brood	Only female incubates eggs for 15-17 days. Male feeds female, may have nest helpers. Chicks: altricial and fledge by 18 days old.	none
AMCR	American Crow	*Corvus brachyrhynchos*	Yes	Probable - 1, 2, 3, 4; Possible - 5, 6	Yes	Breeds in a variety of habitats. Build a large nest in trees.		February through July; single or double brood	Only female incubates eggs for 18 days. May have nest helpers. Chicks: altricial and fledge by 35 days old.	none

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Breeding Bird List

Bird Banding Laboratory (BBL) 4-letter Code	Common Name	Scientific Name	Species Previously Observed within Project	Segment Number of Concern for Species (Present, Probable, Possible, or Unlikely)	Potentially Impacted Breeding Species?	Nest Location	Vertical Height	Breeding Season	Nest Cycle	Conservation Status
CORA	Common Raven	*Corvus corax*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Breeds in a variety of habitats. Build a large nest in on sheltered rock ledges or in the fork of trees.		February through July; single brood	Only female incubates eggs for 20-21 days. Male feeds female. Chicks: altricial and fledge by 5-6 weeks old.	none
	Larks	**Alaudidae**								
HOLA	California Horned Lark*	*Eremophila alpestris actia*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Breeds in open habitats. Nest on the ground in a small hollow usually sheltered by plant tufts.		February through August; two or three broods	Only female incubates eggs for 10-14 days. Chicks: altricial and fledge by 9-12 days old.	CDFW: WL
	Swallows	**Hirundinidae**								
TRES	Tree Swallow	*Tachycineta bicolor*	Yes	Possible - 3, 4	Yes	Nest in natural tree cavity sites and occasionally in nest boxes. Prefer open habitat nearby bodies of water.		March through July; double brood	Only female incubates eggs for 11-20 days. Chicks: altricial and depart nest at 18-25 days old.	none
NRWS	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Nest in a burrow on a steep slope or use crevices and holes in bridges and buildings.		April through June; single brood	Only female incubates eggs for 15-16 days. Chicks: altricial and fledge by 18-21 days old.	none
CLSW	Cliff Swallow	*Petrochelidon pyrrhonota*	Yes	Probable - 1, 2, 3, 4; Possible - 6; Unlikely - 5	Yes	Breeds near water. Build a mud nest on a cliff face, building or bridge.		April through June; double brood	Both sexes incubate eggs for 12-14 days. Chicks: altricial and fledge by 23 days old. May return to nest for 2-3 days after fledging.	none
BARS	Barn swallow	*Hirundo rustica*	Yes	Possible - 1, 2, 3, 4	Yes	Breeds near water in open country. Natural site probably a cave roof but use buildings and bridges. Build a mud nest.		April through July; double brood	Both sexes incubate eggs for 14-16 days. Chicks: altricial and fledge by 17-24 days old.	none
	Chickadees and Titmice	**Paridae**								
MOCH	Mountain Chickadee	*Poecile gambeli*	Yes	Unlikely - 1, 2, 3, 4	Yes	Nests in natural cavity, woodpecker hole, or nest box in montane coniferous forest. Also known to breed at scattered localities in lowlands (planted pines).	Usually low, but occasionally to 80 feet	Mid-May through early July; possibly double brooded	Only female incubates eggs for 14 days. Chicks: altricial and fledge by 21 days old.	none

Bird Banding Laboratory (BBL) 4-letter Code	Common Name	Scientific Name	Species Previously Observed within Project	Segment Number of Concern for Species (Present, Probable, Possible, or Unlikely)	Potentially Impacted Breeding Species?	Nest Location	Vertical Height	Breeding Season	Nest Cycle	Conservation Status
OATI	Oak Titmouse	*Baeolophus inoratus*	Yes	Probable - 3, 4; Possible - 1, 2	Yes	Breeds in oak woodland in a natural cavity in a tree trunk or branch.		March through June; single brood	Only female incubates eggs for 14-16 days. Chicks: altricial and fledge by 17 days old	none
	Verdin	**Remizidae**								
VERD	Verdin	*Auriparus flaviceps*	Yes	Probable - 5, 6	Yes	Nest in thorny shrub, mesquite tree, or cactus.	2-12 feet	mid-March through late May; probably double brooded	Only female incubate eggs for 14 days. Chicks: altricial and fledge at approx. 21 days, but continues to roost long after.	none
	Bushtits	**Aegithalidae**								
BUSH	Bushtit	*Psaltriparus minimus*	Yes	Probable - 1, 2, 3, 4; Possible - 5, 6	Yes	Breeds in trees and shrubs. Builds a gourd nest.		February through June; probably double brood	Both sexes incubate eggs for 12-13 days. Chicks: altricial and fledge by 14-15 days old.	none
	Wrens	**Troglodytidae**								
ROWR	Rock Wren	*Salpinctes obsoletus*	Yes	Probable - 5, 6; Possible - 1, 2, 3, 4	Yes	Breeds on rocky slopes in a cavity, and in boulder strewn river beds and washes.		March through June; two or three broods	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge by 14-16 days old.	none
CAWR	Canyon Wren	*Catherpes mexicanus*	Yes	Possible - 4, 5, 6; Unlikely - 1. 2, 3	Yes	Breeds on steep rocky walls. Nest is an open cup placed on a ledge or in a crevice.		March through July; double brood	Only female incubates eggs for 12-18 days. Chicks: altricial and fledge by 15 days old.	none
HOWR	House Wren	*Troglodytes aedon*	Yes	Probable - 1, 2, 3, 4; Possible - 5; Unlikely - 6	Yes	Breeds wherever there is shrubby cover and thickets. Nest in a cavity of any type.		April through July; double brood	Only female incubates eggs for 13-15 days. Chicks: altricial and fledge by 12-18 days old.	none
MAWR	Marsh Wren	*Cistothorus palustris*	No	Possible – 3,4	Yes	Breeds in tall marsh vegetation. Nest is a domed structure from 1 to 6 feet above ground.	1-6 feet	Late March through late August; double or triple brooded	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge by 13-15 days old.	none
BEWR	Bewick's Wren	*Thryomanes bewickii*	Yes	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Breeds in open woodlands and shrubby areas. Nest in a cavity in a tree, on the ground, between rocks or in a brush pile.		March through July; two or three broods	Only female incubates eggs for 14 days. Male feeds female. Chicks: altricial and fledge by 14 days old.	none

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Breeding Bird List

Bird Banding Laboratory (BBL) 4-letter Code	Common Name	Scientific Name	Species Previously Observed within Project	Segment Number of Concern for Species (Present, Probable, Possible, or Unlikely)	Potentially Impacted Breeding Species?	Nest Location	Vertical Height	Breeding Season	Nest Cycle	Conservation Status
CACW	Cactus Wren*	*Campylorhynchus brunneicapillus*	Yes	Probable - 5, 6; Unlikely - 2, 3, 4	Yes	Breeds in cactus thickets. Nest is a bulky dome. Will build multiple nests that are not used for breeding.		March through July; two or three broods	Only female incubates eggs for 14-15 days. Male feeds female. Chicks: altricial and fledge by 14-17 days old.	None
	Gnatcatchers	**Polioptilidae**								
CAGN	Coastal California Gnatcatcher*	*Polioptila californica californica*	Yes	Possible - 2, 3; Unlikely - 4, 5	Yes	Breeds in sage scrub habitats. Build a cup nest in a shrub.		February through August	Both sexes incubate eggs for 14 days. Chicks: altricial and fledge at 15-16 days old.	ESA: Threatened ABC: WLBCC CDFW: SA
BTGN	Black-tailed Gnatcatcher*	*Polioptila melanura*	Yes	Possible - 5, 6	Yes	Nest in fork of branches in dense, thorny, or leafy shrub or tree.	3-10 feet	April through August; double brood	Both sexes incubate for 14-15 days. Chicks: altricial and leave nest at 9-15 days old.	CDFW: SA
BGGN	Blue-gray Gnatcatcher	*Polioptila caerulea*	Yes	Unlikely - 1, 2, 3, 4	Yes	Breeds in a variety of habitats from sparse scrub to heavy woodland. Nest is a cup in a tree or shrub. Looks like CAGN nest but use more lichens.		April through July; double brood	Both sexes incubate eggs for 15 days. Chicks: altricial and fledge by 12-13 days old.	none
	Old World Warblers	**Sylviidae**								
WREN	Wrentit	*Chamaea fasciata*	Yes	Probable - 1, 2, 3, 4; Unlikely - 5	Yes	Breeds in sage scrub and chaparral. Builds a cup nest that looks like a CAGN nest but is bigger.		February through August	Both sexes incubate eggs for 14 days. Chicks: altricial and fledge at 15-16 days old.	none
	Thrushes	**Turdidae**								
WEBL	Western Bluebird	*Sialia mexicana*	Yes	Possible - 1, 2, 3, 4	Yes	Breeds in woodland clearings in a tree cavity.		April through June; double brood	Only female incubates eggs for 13-14 days. Chicks: altricial and fledge by 20 days old.	none
AMRO	American Robin	*Turdus migratorius*	Yes	Possible - 1, 2, 3, 4	Yes	Breeds in open areas. Build a bulky nest in a tree or shrub, ledge of a building, in a tree fork.		May through July; two or three broods	Only female incubates eggs for 11-14 days. Chicks: altricial and fledge by 14-16 days old.	none

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Breeding Bird List

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	Mockingbirds, Thrashers, and Allies	**Mimidae**								
CATH	California Thrasher	*Toxostoma redivivum*	Yes	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Breeds in sage scrub and chaparral. Build a cup nest in a low tree or shrub.		February through July; double brood	Both sexes incubate eggs for 14 days. Chicks: altricial and fledge at 12-14 days old.	none
LCTH	Le Conte's Thrasher*	*Toxostoma lecontei*	Yes	Probable - 5, 6 (Previously sightings in Segment 5)	Yes	Breeds in the desert in areas with shrubby growth. Build a cup nest in cholla or a low tree.		February through June; two or three broods	Both sexes incubate eggs for 14-20 days. Chicks: altricial and fledge at 14-17 days old.	ABC: WLBCC CDFW: SSC USFWS: BCC
NOMO	Northern Mockingbird	*Mimus polyglottos*	Yes	Probable - 1. 2, 3, 4, 5, 6	Yes	Breeds in open woodlands, bushes, and in developed areas. Builds a bulky cup nest in a shrub.		March through July; two or three broods	Only female incubates eggs for 11-14 days. Chicks: altricial and fledge at 12-14 days old.	none
	Starlings and Allies	**Sturnidae**								
EUST	European Starling	*Sturnus vulgaris*	Yes	Probable - 1. 2, 3, 4, 5, 6	Not protected					none
	Silky-flycatchers	**Ptilogonatidae**								
PHAI	Phainopepla	*Phainopepla nitens*	Yes	Probable - 1. 2, 3, 4, 5, 6	Yes	Breeds early in the desert scrub and then moves to more coastal locations for second brood. Shallow cup.		Late February - desert; April through June - coastal; double	Both sexes incubate eggs for 14-15 days. Chicks: altricial and fledge at 18-19 days old.	none
	Wood-Warblers	**Parulidae**								
OCWA	Orange-crowned Warbler	*Oreothlypis celata*	Yes	Unlikely - 1, 2, 3, 4	Yes	Breeds in a variety of habitats. Bulky cup nest on the ground or in a shrub.		April through July; single brood	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 12-13 days old.	none
COYE	Common Yellowthroat	*Geothlypis trichas*	Yes	Probable - 3, 4; Possible - 1, 2; Unlikely - 6	Yes	Breeds in low undergrowth by water. Build a bulky cup nest above the ground of over water in the reeds.		April through July; double brood	Only female incubates eggs for 12 days. Chicks: altricial and fledge at 9-10 days old.	none

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YEWA	Yellow Warbler*	*Setophaga petechia*	Yes	Probable - 3, 4; Possible - 1, 2, 5 (Previous sightings in 3, 4)	Yes	Breeds in shrubby growth in riparian areas. Nest is a cup in a tree or shrub.		April through July; sometimes double brood	Only female incubates eggs for 11 days. Chicks: altricial and fledge at 9-12 days old.	CDFW: SSC USFWS: BCC
BTGW	Black-throated Gray Warbler	*Setophaga nigrescens*	Yes	Unlikely - 2, 3, 4	Yes	Breeds in open woodlands in mountain areas. Build a cup nest in a tree or shrub.		May through July; single brood	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 1-14 days old.	none
YBCH	Yellow-breasted Chat*	*Icteria virens*	Yes	Probable - 4; Possible - 2, 3, 5 (Previous sightings in 4)	Yes	Breeds in thick riparian vegetation. Builds a cup nest in a dense shrub or tangle.		April through July; double brood	Only female incubates eggs for 11-12 days. Chicks: altricial and fledge at 8-11 days old.	CDFW: SSC
	New World Sparrows and Allies	**Emberizidae**								
SPTO	Spotted Towhee	*Pipilo maculatus*	Yes	Probable - 1, 2, 3, 4, 5; Unlikely - 6	Yes	Breeds in low shrubby growth. Nest is a well-built cup usually on the ground or very low in a bush.		April through July; two or three broods	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 9-11 days old.	none
RCSP	Southern Rufous-crowned Sparrow*	*Aimophila ruficeps canescens*	Yes	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Breeds in coastal sage scrub and sparse mixed chaparral. Nest on the ground at the base of a grass clump.		April through June	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 9 days old.	CDFW: WL
CALT	California Towhee	*Melozone crissalis*	Yes	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Breeds in brushy areas. Build a cup nest in a shrub or small tree.		March through July; double brood	Only female incubates eggs for 14 days. Chicks: altricial and fledge at 10 days old.	none
BCSP	Black-chinned Sparrow	*Spizella atrogularis*	No	Possible - 1, 2, 3, 4, 5; Unlikely - 6	Yes	Nests near the center of dense shrubs in sagebrush, chamise, buckwheat, etc.	2 feet	April through July; single brood	Only female incubates eggs for 11-12 days. Chicks: altricial and leave nest at 9-10 days old.	none
LASP	Lark Sparrow	*Chondestes grammacus*	Yes	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Breeds in open grassland. Nest on the ground in a hollow lined with grasses.		April through July; double brood	Only female incubates eggs for 11-13 days. Chicks: altricial and fledge at 9-10 days old.	none
BTSP	Black-throated Sparrow	*Amphispiza bilineata*	Yes	Probable - 5, 6	Yes	Breeds in desert areas with sparse shrub cover, in shrub or cactus.	6-18 inches	late March through early July; probably double brooded	Incubates eggs for 12 days. Chicks: altricial and fledge at 9-10 days old.	none
SAGS	Bell's Sparrow	*Artemisiospiza belli belli*	No	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Nests in chaparral dominated by fairly dense stands of chamise. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground.		February through July; single brood	Only female incubates eggs for 10-16 days. Chicks: altricial and fledge at 10-11 days old.	none

Breeding Bird List

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GRSP	Grasshopper Sparrow*	*Ammodramus savannarum*	Yes	Unlikely - 2, 3, 4 (Previous sighting in segment 4)	Yes	Nests in grasses. Cup nest rim usually level or slightly above ground.		April through August; two or more broods	Only female incubates eggs for 11-13 days. Chicks: altricial and leave nest at 8-9 days old.	CDFW: SSC
SOSP	Song Sparrow	*Melospiza melodia*	Yes	Probable - 3, 4, 5; Possible - 1, 2; Unlikely - 6	Yes	Breeds in low shrubby growth and thickets in a variety of habitats.		March through July	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 10 days old.	none
	Cardinals, Grosbeaks, and Allies	**Cardinalidae**								
SUTA	Summer Tanager*	*Piranga rubra*	No	Unlikely - 6	Yes	Nests in riparian vegetation. Open-cup nest.	4 feet to > 70 feet	May through August; one or two broods	Only female incubates eggs for 11-12 days. Chicks: altricial and leave nest at 9-10 days old.	CDFW: SSC
BHGR	Black-headed Grosbeak	*Pheucticus melanocephalus*	Yes	Probable - 3, 4; Possible - 5	Yes	Breeds in thickets, in trees along streams or in open woodlands. Build a cup nest in a tree or shrub.		April through July; single brood	Both sexes incubate eggs for 12-13 days. Chicks: altricial and fledge at 12 days old.	none
BLGR	Blue Grosbeak	*Passerina caerulea*	Yes	Probable - 3, 4, 5; Possible 1, 2, 6	Yes	Breeds in shrubby growth, weedy pastures, thickets, and low trees. Build nest in twig fork.	6 inches to 15 feet	May through late July; double brood	Only female incubates eggs for 11 to 13 days. Chicks: altricial and fledge at 9-13 days old.	none
LAZB	Lazuli Bunting	*Passerina amoena*	Yes	Possible - 1, 2, 3, 4, 5; Unlikely - 6	Yes	Breeds in scrubs and riparian habitat. Build a cup nest in low thick shrubby habitat.		May through July; double brood	Only female incubates eggs for 12 days. Chicks: altricial and fledge at 10-15 days old.	none
	Blackbirds and Allies	**Icteridae**								
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	Yes	Probable - 3, 4, 5; Possible 1, 2, 6	Yes	Breed in vegetation at the edge of water. Build a deep cup nest in reeds or sometime shrubs. Semi-colonial breeder.		March through June; double brood	Only female incubates eggs for 10-12 days. Chicks: altricial and fledge at 10-11 days old.	none
TRBL	Tricolored Blackbird*	*Agelaius tricolor*	Yes	Possible - 3, 4,	Yes	Breeds in sloughs, swamps and marshes. Colonial breeder.		April through June; double brood	Only female incubates eggs for 11 days. Chicks: altricial and fledge at 13 days old.	ABC: WLBCC BLM: S CDFW: SSC USFWS: BCC
WEME	Western Meadowlark	*Sturnella neglecta*	Yes	Probable - 2, 3, 4, 5, 6	Yes	Breeds in open grasslands. Build a domed nest on the ground and often has a tunnel to the entrance. May breed in small colonies.		March through June; double brood	Only female incubates eggs for 13-15 days. Chicks: altricial fledge at 10-12 days old.	none

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BRBL	Brewer's Blackbird	*Euphagus cyanocephalus*	Yes	Possible - 1, 2, 3, 4, 5, 6	Yes	Breeds near water in trees or shrubs. Also in cultivated or urban areas. Build a stout cup nest high in trees or shrubs.		March through July; double brood	Only female incubates eggs for 12-13 days. Chicks: altricial and fledge at 13 days old.	none
GTGR	Great-tailed Grackle	*Quiscalus mexicanus*	Yes	Probable - 3, 4; Possible - 5	Yes	Breed in vegetation by or over water. Build a bulky cup nest. Colonial breeder.		March through August; double brood	Male does not participate in nesting other than defending against predators. Eggs incubated for 13-14 days. Chicks: altricial and fledge at 14 days old.	none
BHCO	Brown-headed Cowbird	*Molothrus ater*	Yes	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Brood parasites. Female lays eggs in nest of another species.		April through August	Does not incubate own eggs. Care given to cowbird eggs is provided by the host and reflects characteristics of that species. Chicks: altricial and leave nest at 8-13 days old.	none
HOOR	Hooded Oriole	*Icterus cucullatus*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Breed in woodlands and in shade trees, palms and shrubs near houses. Build a cup nest high in the tree or shrub.		April through August; two or three broods	Only female incubates eggs for 12-14 days. Chicks: altricial and fledge at 14 days old.	none
BUOR	Bullock's Oriole	*Icterus bullockii*	Yes	Probable - 1, 2, 3, 4, 5; Possible - 6	Yes	Breeds in scattered trees. Nest is a pensile pouch suspended in a twig fork.		April through July; single brood	Only female incubates eggs for 14 days. Chicks: altricial fledge at 14 days old.	none
	Finches and Allies	**Fringillidae**								
HOFI	House Finch	*Haemorhous mexicanus*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Breeds in cultivated areas and around development. Build their cup nest in a variety of sites.		March through July; two or three broods	Only female incubates eggs for 12-14 days. Males feed females. Chicks: altricial and fledge at 14-16 days old.	none
LEGO	Lesser Goldfinch	*Spinus psaltria*	Yes	Probable - 1, 2, 3, 4, 5, 6	Yes	Breeds in open country in trees and shrubs. Build a compact cup nest.	2-30 feet	April through July; two or three broods	Only female incubates eggs for 12 days. Males feed females. Chicks: altricial and fledge at 11 days old.	none
LAGO	Lawrence's Goldfinch*	*Spinus lawrencei*	Yes	Possible - 1, 2, 3, 4, 5; Unlikely - 6	Yes	Nests in open oak or other arid woodland & chaparral, near water. Nearby herbaceous habitats used for feeding.	3-40 feet	April through July	Only female incubates eggs for 12-13 days. Males feed females. Chicks: altricial fledge at 11 days old.	ABC:WLBCC USFWS:BCC
AMGO	American Goldfinch	*Spinus tristis*	Yes	Probable - 3, 4, 5; Possible 1, 2	Yes	Breeds in variety of habitats but is usually associated with water. Build a compact cup.		April through August; two or three broods	Only female incubates eggs for 12-14 days. Males feed females. Chicks: altricial and fledge at 11-17 days old.	none

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	Old World Sparrows	**Passeridae**								
HOSP	House Sparrow	*Passer domesticus*	Yes	Probable - 1, 2, 3, 4, 5, 6	Not protected					none

Notes:
* = Special-status species
Conservation Status:

ESA= Endangered Species Act
CESA=California Endangered Species Act

American Bird Conservancy (ABC)
WLBCC = United States WatchList of Birds of Conservation Concern

Bureau of Land Management (BLM)
S = Sensitive

California Department of Forestry and Fire Protection (CDF)
S = Sensitive

California Department of Fish and Wildlife (CDFW)
FP = Fully Protected
SA = included in the Special Animals List (Sept 2014)
SSC = Species of Special Concern
WL = Watch List

Unites States Fish and Wildlife Service (USFWS)
BCC = Birds of Conservation Concern

United States Forest Service (USFS)
S = Sensitive

Appendix B
Species Accounts

Appendix B: Species Accounts

Breeding Biology and Sensitivity to Disturbance of Species Nesting or Potentially Nesting in the WOD Upgrade Corridor

The information in these species accounts was used to establish the initial minimum-distance buffer zones presented in Table 4 of the Nesting Bird Management Plan. These accounts should be referred to when making any determination to modify these minimum-distance buffers as conditions in the field may dictate (Section 2.3 of the Plan). Species-specific information on nest placement and type should serve as an aid in finding nests, and information on incubation periods and time to fledging can be used to estimate when the nest cycle will be completed and any project-related activity that may have been disrupted by the nest can resume. All avian nest monitors must have this plan in their possession when conducting pre-construction surveys or otherwise searching for or monitoring nests. The species presented in this list are those considered to have the potential to nest in the project area. In the event that a species not included in this list is found nesting in the project area, it must be evaluated separately.

Nesting, incubation, and nestling information was obtained primarily from Baicich, P. J., and C. J. O. Harrison, 1997, *A Guide to the Nests, Eggs, and Nestlings of North American Birds*, 2nd edition , published by Academic Press. Breeding season information was obtained from Kiff, L, and D. Irwin, 1987, The breeding season of Los Angeles County birds, *Western Tanager* 53 (7):4-5. Isolated, extreme nest dates are excluded in the ranges given. In the few cases where data are not available in Kiff and Irwin (1987), breeding season information was obtained from *The Birds of North America* series published by The Birds of North America, Inc. (1992-2002) and available online at http://bna.birds.cornell.edu/bna, or from Unitt, P., 2004, *San Diego County Bird Atlas*, published by the San Diego Natural History Museum.

Isolated and extreme nest dates are excluded in the nesting season ranges given in this document. Also not reflected in the species accounts is the fact that a few species breed nearly year-round in southern California under ideal conditions. Examples include barn owl, mourning dove, and acorn woodpecker. Although active nest searches and monitoring may take place only during the optimal time of year for nesting, all construction monitors should be aware that some species may be nesting at other times. If an active nest is found outside the periods when monitors are actively searching for nests, it should be treated no differently than a nest found during the “typical” breeding season. In these rare instances, the same buffer requirements and nest monitoring protocols should be followed.

The West of Devers (WOD) Upgrade Project (Project) Breeding Distribution information at the end of each account is broken down by segment (the Project includes six segments). Segment 1 is primarily located in an urban setting in San Bernardino County from the San Bernardino Substation to the San Bernardino junction in the San Timoteo Badlands. Segment 2 begins at the Vista Substation in Grand Terrace and traverses the San Timoteo Badlands to the San Bernardino Junction. Segment 3 continues east through the San Timoteo Badlands from the San Bernardino Junction in San Bernardino County to the El Casco Substation in Riverside County. Segment 4 continues from the El Casco Substation, crossing San Timoteo Wash, San Timoteo Canyon, and steep slopes into Banning. Segment 5 continues east over the Banning Bench, the San Gorgonio River, and the alluvial of drainages of Millard Canyon, Deep Canyon, and Lion Canyon, ending near the community of Whitewater. Segment 6 traverses the alluvial drainages of Stubbe Canyon and Cottonwood Canyon and the Whitewater River and ends at the Devers Substation near Desert Hot Springs in the Coachella Valley. This list does not include the following endangered, threatened, or fully protected species as they are dealt with elsewhere: least Bell’s vireo (federally and state endangered), southwestern willow flycatcher (federally endangered, state threatened), California gnatcatcher (federally threatened), western yellow-billed cuckoo (state threatened), golden eagle (protected under the Bald and Golden Eagle Act and California fully protected), and white-tailed kite (California fully protected).

WATERFOWL

Sensitivity to disturbance: Many of the duck species have concealed ground nests that can be tucked deep under vegetation, and as such are well protected except when heavy equipment is nearby and ground vibrations disturb the adults. Species with more conspicuous nests are especially sensitive to disturbance. Once eggs have hatched and young are on the water neither the young or adults are easily disturbed. Some species may have multiple broods.

Canada Goose (*Branta canadensis*)

Nest: typically on drier, slightly elevated sites near water
Breeding season: March through August; single brood
Incubation: 25-28 days; only female incubates
Nestlings: precocial; leave nest within 24 hours after hatching
Project breeding distribution: possible in Segment 4

Wood Duck (*Aix sponsa*)

Nest: preformed cavities close to or over water
Breeding season: April through July; double brood
Incubation: 30 days; only female incubates
Nestlings: precocial and leave nest approximately 24 hours after hatching
Project breeding distribution: possible in Segment 4 (often use nest boxes)

Mallard (*Anas platyrhynchos*)

Nest: usually on ground in upland area near water; placed under overhanging cover or in dense vegetation for maximum concealment
Breeding season: late March through late June (wild birds); single brood
Incubation: 26-29 days; only female incubates
Nestlings: precocial; take to water immediately after hatching
Project breeding distribution: possible in Segments 3 and 4, especially at Fisherman's Retreat

Cinnamon Teal (*Anas cyanoptera*)

Nest: usually <1 meter from water below matted, dead stems of vegetation.
Breeding season: March through August; single brood
Incubation: 21-25 days; only female incubates
Nestlings: precocial and leave nest within 24 hours of hatching
Project breeding distribution: possible in Segments 3 and 4, especially at Fisherman's Retreat.

Ruddy Duck (*Oxyura jamaicensis*)

Nest: in aquatic emergent vegetation.
Breeding season: May through September
Incubation: 20-26 days; female incubates
Nestlings: precocial and leave nest within 24 hours of hatching
Project breeding distribution: possible in Segments 3 and 4, especially at Fisherman's Retreat

Pied-billed Grebe (*Podilymbus podiceps*)

Nest: on floating platforms, most often among tall emergent vegetation
Breeding season: mid-April through late-July; one or two broods
Incubation: 23-27 days; both sexes incubate
Nestlings: semi-precocial and move from nest to adult's back less than 1 hour after hatching.
Project breeding distribution: possible in Segment 4, especially at Fisherman's Retreat.

American Coot (*Fulica americana*)

Nest: in waterside vegetation on the ground or at water level in branches
Breeding season: late March through mid-July

Incubation: 21-24 days; both sexes incubate
Nestlings: semi-precocial, stay in nest for 3-4 days
Project breeding distribution: possible in Segment 4, especially at Fisherman's Retreat

QUAIL

Sensitivity to disturbance: Due to ground nesting behavior, quail are probably more sensitive to heavy equipment operating in the vicinity and vibrations produced by those vehicles. Once hatched, precocial young move quickly away from the nest with the adults.

California Quail (*Callipepla californica*)

Nest: on ground in variety of habitats
Breeding season: late March through early July; single brood
Incubation: 21-23 days; female incubates; male stays nearby
Nestlings: precocial, very active soon after hatching
WOD UPGRADE PROJECT breeding distribution: Segments 1, 2, 3, 4, and 5

Gambel's Quail (*Callipepla gambelii*)

Nest: almost always on the ground and usually concealed under a shrub or in some other protected site; tree nests are occasionally constructed if a suitable platform can be found
Breeding season: March through June; single brood
Incubation: 21-23 days; females generally incubate; however, males may also incubate too
Nestlings: precocial, follow parents immediately after hatching
Project breeding distribution: Segment 6; possible in Segment 5

HERONS AND EGRETS

Sensitivity to disturbance: Black-crowned night-heron is a colonial nester. Urban nesting pairs are often completely acclimated to the close proximity of people. Pairs nesting in more remote areas tend to abandon nests if disturbed regularly or if the type of disturbance is severe. Because they do nest in colonies, abandonment can result in many simultaneous nest failures.

Great Blue Heron (*Ardea herodias*)

Nest: made primarily of sticks and placed in trees up to 100 feet or more above ground; colonial nester
Breeding season: January through July; may double brood
Incubation: 25-29 days; both sexes incubate
Nestlings: semi-altricial, leave nest at 81 days
Project breeding distribution: possible in Segments 3 and 4, especially at Fisherman's Retreat

Great Egret (*Ardea alba*)

Nest: typically on or near the top of trees or woody vegetation; colonial nester
Breeding season: March through June; single brood
Incubation: 22 days; both sexes incubate
Nestlings: semi-altricial, leave nest at 62-67 days
Project breeding distribution: possible in Segments 3 and 4, especially at Fisherman's Retreat

Snowy Egret (*Egretta thula*)

Nest: by water, in a variety of substrates like trees, shrubs, or thickets. Colonial nester
Breeding season: mid-April through mid-July; single brood
Incubation: 22 days; both sexes incubate
Nestlings: semi-altricial, leave nest as early as 10 days of age
Project breeding distribution: unlikely in Segments 3 and 4

Cattle Egret (*Bubulcus ibis*)

Nest: in medium-tall upland trees to low trees or shrubs in swamps or reed vegetation in marshes; colonial nester
Breeding season: April through September; single brood.
Incubation: 22-23 days; both sexes incubate.
Nestlings: semi-altricial, leave nest around 20 days after hatching
Project breeding distribution: unlikely in Segments 3 and 4

Black-crowned Night-Heron (*Nycticorax nycticorax*)
Nest: by water, sometimes in urban environments in variety of substrates like shrubs, trees, or thickets Colonial nester up to 150 feet high
Breeding season: early May through late June; double brood
Incubation: 24 days; only female incubates
Nestlings: semi-altricial, leave nest for nearby branches at 6 to 7 weeks
Project breeding distribution: possible in Segments 3 and 4, especially at Fisherman's Retreat

BIRDS OF PREY (CATEGORY 1)

Sensitivity to disturbance: Not easily disturbed unless very direct. As cavity nesters these four species seem to adapt well to the proximity of people unless the direct nest structure (tree, building, cliff, bridge, nest box) is disturbed. Western screech-owls are cavity nesters and are tolerant of nearby human activity unless their nest tree is disturbed. All three species are sensitive to heavy equipment operations at < 100 feet.

American Kestrel (*Falco sparverius*)
Nest: cavity in tree or other structure such as building or tower; will use nest boxes, 9 to 32 feet high
Breeding season: mid-March through mid-June; may double brood
Incubation: 29-30 days; mostly the female incubates; male stays nearby and brings food
Nestlings: semi-altricial, leave nest at 30 days
Project breeding distribution: throughout

Barn Owl (*Tyto alba*)
Nest: cavity in tree, building, bridge, crevice in rocks, outcrops, cliffs and quarries; up to 65 feet
Breeding season: late January through mid-May; often double broods; in California known to predictably nest year round in all months during certain peak rodent productivity years
Incubation: 32-34 days; only female incubates; male stays nearby and brings food
Nestlings: altricial, fly at 60 days
Project breeding distribution: throughout

Western Screech-Owl (*Megascops kennecottii*)
Nest: in open woodlands in natural cavity or old woodpecker hole, 6 to 30 feet high; will use nest boxes
Breeding season: early March through mid-June
Incubation: 21-30 days; Uncertain if both or only female incubates
Nestlings: altricial, fledge at 28 days
Project breeding distribution: possible in Segments 1-4 in wooded areas, especially oaks, cottonwoods, and willows; unlikely in Segment 5

BIRDS OF PREY (CATEGORY 2)

Sensitivity to disturbance: These species all acclimate to the presence of people, depending upon the type and duration of activity. Cooper's hawks, red-shouldered hawks, and great horned owls nesting in southern California include numerous successful urban pairs as well as the pairs nesting in natural areas. Urban red-tailed hawk pairs tolerate small buffers while natural pairs need greater distances between their nest and human activity. Burrowing owls tend to be very tolerant unless their foraging habitat is eliminated or their nest burrow and escape burrows are chronically disturbed.

Cooper's Hawk (*Accipiter cooperii*)
Nest: in forests in trees, 20-60 feet high
Breeding season: March through July; single brood
Incubation: 36 days; only female incubates; male stays nearby and brings food
Nestlings: semi-altricial, fly at 30-34 days
Project breeding distribution: likely in Segments 3 and 4; possible in Segments 1, 2, and 5

Red-shouldered Hawk (*Buteo lineatus*)
Nest: in moist woodlands in trees, 20-60 feet high
Breeding season: early March through early June; single brood
Incubation: 23-25 days; both sexes (but mostly female) incubate
Nestlings: semi-altricial, fly at 5-6 weeks
Project breeding distribution: possible in Segments 1, 2, 3, 4, and 5

Red-tailed Hawk (*Buteo jamaicensis*)
Nest: wide variety of habitats in tall tree, pole, or transmission tower, 35 to 90 feet high
Breeding season: late February through September; single brood
Incubation: 28-32 days; both sexes incubate
Nestlings: semi-altricial, fly at 6 weeks
WOD UPGRADE PROJECT breeding distribution: throughout

Great Horned Owl (*Bubo virginianus*)
Nest: in woodlands in natural cavity in tree, in fork, on rock ledge or in cave; ground to 90 feet
Breeding season: late January through mid-May; single brood
Incubation: 26-35 days; mostly female incubates
Nestlings: altricial, leave nest at 4-5 weeks
Project breeding distribution: throughout

Burrowing Owl (*Athene cunicularia*)
*Nest*s: in burrows in open grassy places, within open scrub, or at edge of agriculture
Breeding season: early April through late June; single brood
Incubation: 27-30 days; only female incubates; male stays nearby and brings food
Nestlings: altricial, fledge at 40-45 days
Project breeding distribution: throughout

BIRDS OF PREY (CATEGORY 3)

Sensitivity to disturbance: Because turkey vultures tend to nest in relatively dark nooks and crannies of cliffs or boulder-strewn hillsides in southern California, they usually respond well as long as they can enter their nest caves to swap incubation duties or feed their young. Adults rarely exit the nest to escape the area unless people are in the immediate 10-foot radius of the entrance; however, if off the nest when people or machinery approach their nest too closely for any length of time, they may abandon the nest. Urban nesting red-tailed hawks are often tolerant of human activity, but pairs nesting in more natural areas will predictably need larger buffers than the minimum prescribed here. For example, wild pairs are often sensitive to climbers on adjacent towers so, as a rule, major construction or climbing should take place at least two towers away from an active tower nest. Similarly, prairie falcons are generally intolerant of people near their cliff nests and respond by diving on people in the vicinity of their nest if aggravated. Peregrines tend to be tolerant but very defensive around their nests, and rarely fail as a result of construction activity. The long-eared owl tends not to nest any closer than one-quarter mile from people. Exceptions exist but as a rule long-eared owls are intolerant of people and should be given conservative buffers whenever possible.

Turkey Vulture (*Cathartes aura*)
Nest: on bare soil, wood, leaf litter, punk, straw, etc., up to 20 feet high in secluded, undisturbed dark sites like caves, rock crevices, or maybe even an abandoned building
Breeding season early March through early June; single brood
Incubation: 37-41 days; both sexes incubate

Nestlings: semi-altricial, fly at 11 weeks
Project breeding distribution: unlikely in Segment 2, 3, and 6

Red-tailed Hawk (*Buteo jamaicensis*)

See "Birds of Prey (Category 2)"

Peregrine Falcon (*Falco peregrinus*)
Nest: on a cliff ledge, from 25 to 1,300 ft high; cliffs 165 to 650 feet high preferred
Breeding season: early March through early June; single brood
Incubation: 28-29 days; both sexes incubate
Nestlings: semi-altricial, fly at 35-42 days
Project breeding distribution: possible in Segments 5 and 6; unlikely in Segments 1, 2, 3, and 4

Prairie Falcon (*Falco mexicanus*)
Nest: on ledge under overhang on rock outcrop or cliff; usually 30 to 40 feet up on cliff ledge but can be up to 400 feet high
Breeding season: late March to early May; single brood
Incubation: 29-31 days; both sexes incubate; male rarely assists but brings food
Nestlings: semi-altricial, leave nest at 40 days
Project breeding distribution: possible in Segments 5 and 6; unlikely in Segments 1, 2, 3, and 4

Long-eared Owl (*Asio otus*)
Nest: in dense coniferous or mixed woodland; use old nests of other birds high in a tree, 10 to 29 feet.
Breeding season: early March through early June; single brood
Incubation: 26-28 days; only female incubates
Nestlings: altricial, leave nest at 21 days when still flightless to reside in surrounding vegetation
Project breeding distribution: possible in Segment 3 and 4

Osprey (Pandion haliaetus)

*Nest*s: natural and artificial sites including trees, cliffs, power poles, and nesting platforms
Breeding season: April through August; single brood
Incubation: 37 days; both sexes incubate
Nestlings: semi-precocial; leave nest at 50-62 days
Project breeding distribution: unlikely in Segments 3 and 4

Northern Harrier (*Circus cyaneus*)

*Nest*s: on ground in open and vegetated habitats including drained and non-drained wetlands as well as uplands
Breeding season: April through September; single brood
Incubation: 30-32 days; only female incubates
Nestlings: semi-altricial, fledge at 29-35 days
Project breeding distribution: unlikely in Segment 3

RAILS AND SHOREBIRDS

Sensitivity to disturbance: Killdeer commonly nest near construction yards, probably attracted by the presence of gravel on the roads and puddles from water trucks. They usually become agitated by approaching humans in cars or on foot when about 100 feet out from their ground nest, typically performing distraction displays. When this happens, one should assume that a nest is in the immediate vicinity, leave the area, and observe from a distance to identify the location of the eggs.

Virginia Rail (*Rallus limicola*)

Nest: in robust emergent vegetation (for example, cattails and bulrush) with nest touching or a short distance above the water surface
Breeding season: April through July; double brood

Incubation: 18-20 days; both sexes incubate
Nestlings: precocial, leave nest within 3-4 days after hatching; adults may bring chicks back to nest at night for several days after hatching
Project breeding distribution: possible in Segments 3 and 4

Sora (*Porzana carolina*)

Nest: in shallow water with robust or fine-leaved emergent vegetation
Breeding season: May through August; single brood
Incubation: 16-19 days; both sexes incubate
Nestlings: semi-precocial, leave nest 3-4 days after hatching
Project breeding distribution: unlikely in Segments 3 and 4.

Killdeer (*Charadrius vociferus*)
Nest: on the ground in open places, usually in areas with short grass, sand, or gravel
Breeding season: early March through late June; sometimes double brooded
Incubation: 24-26 days; both sexes incubate
Nestlings: precocial, leave nest soon after hatching
Project breeding distribution: throughout

PIGEONS

Sensitivity to disturbance: Band-tailed pigeons nest in oaks and conifers, and unless the tree is disturbed, usually remain on their nest with people in the immediate vicinity. Pigeons and doves typically build flimsy nests which can be easily blown down by excessive helicopter rotor wash.

Band-tailed Pigeon (*Patagioenas fasciata*)

Nest: in tree or shrub 8 to 20 feet up, usually in areas where oak trees occur
Breeding season: mid-March through mid-November; probably several broods
Incubation: 18-20 days; both sexes incubate
Nestlings: altricial, fledge at 25-30 days
Project breeding distribution: possible in Segments 1, 2, 3, and 4; unlikely in Segment 5

DOVES

Sensitivity to disturbance: Urban nesting mourning doves are tolerant of human disturbance of most any kind, but pairs nesting in natural areas can be much more sensitive to disturbance, especially ground-nesting pairs, when they are subjected to human activity for extended periods or to heavy equipment moving earth.

White-winged Dove (*Zenaida asiatica*)

Nest: on tree branches in interior of dense woodlands along riparian areas; colonial nester
Breeding Season: May through August; two or more broods
Incubation: 15-17 days; both sexes incubate
Nestlings: altricial, fledge at 13-18 days
Project breeding distribution: unlikely in Segment 6

Mourning Dove (*Zenaida macroura*)

Nest: in wide variety of habitats, typically in tree or shrub from ground to 25 feet up
Breeding season: late March through early September; several broods
Incubation: 14-15 days; both sexes incubate
Nestlings: altricial, fledge at 13-15 days
Project breeding distribution: throughout

Common Ground Dove (*Columbina passerina*)

Nest: either on the ground in fields or aboveground in bushes, low horizontal tree branches, palm fronds, stumps, fence posts, or vines

Breeding Season: February through October; two to four broods
Incubation: 12-14 days; both sexes incubate
Nestlings: altricial, capable of flight at 11 days old but may not depart nest until 14 days old
Project breeding distribution: possible in Segment 3 (including citrus groves); unlikely in Segments 1, 2, and 4

ROADRUNNERS

Sensitivity to disturbance: Roadrunners are very intolerant of close or continuous human disturbance involving frequent visits to the nest vicinity, many people in the area, or operation of heavy equipment. Habitat removal and earth moving tend to provide an initial pulse of abundant food followed by a dearth of food. Steps should be taken to assure that the buffer contains adequate prey resources or that the surrounding intact natural landscape is readily and safely accessed.

Greater Roadrunner (*Geococcyx californianus*)

Nest: in arid areas, low in tree in shrubby thicket, ground to 15 feet up
Breeding season: early March through mid-July, double brood
Incubation: 20 days; both sexes incubate
Nestlings: altricial, leave nest in 11 to 19 days
Project breeding distribution: Segments 2, 3, 4, 5, and 6; possible in Segment 1

NIGHTJARS

Sensitivity to disturbance: As nocturnal aerial foragers these ground nesters are relatively intolerant of human disturbance, and nests often fail if “bumped” from their nests during diurnal hours and the adults are not allowed to return quickly. A substantial buffer or continuous monitoring of nests from a distance is important to ensure successful nesting.

Lesser Nighthawk (*Chordeiles acutipennis*)

Nest: on bare ground in sandy or gravelly sites in dry washes, rocky areas, and scrubland.
Breeding season: late April through late July; single brood.
Incubation: 18 to 19 days; only female incubates.
Nestlings: semi-precocial, can walk towards parents soon after hatching.
Project breeding distribution: possible in Segments 5 and 6; unlikely in Segments 2, 3, and 4

Common Poorwill (*Phalaenoptilus nuttallii*)

Nest: on bare open area of rock, gravel or bare earth, often at the base of a shrub
Breeding season: late March through early July; often double brooded
Incubation: 20 to 21 days; both sexes incubate
Nestlings: semi-precocial, adults may move young around frequently
Project breeding distribution: possible in Segments 5 and 6; unlikely in Segments 2, 3, and 4

SWIFTS

Sensitivity to disturbance: Because of their aerial foraging habits and inaccessible nesting sites on cliffs and concrete highway bridges, white-throated swifts are not vulnerable to human disturbance that does not directly intrude on their nest.

White-throated Swift (*Aeronautes saxatalis*)

Nest: in rock cracks and crevices on cliffs or bridges, 10 to 195 feet up
Breeding season: early May through early July
Incubation: 20-27 days
Nestlings: altricial, fledge at around 25 days - little information known
Project breeding distribution: possible in Segments 1, 2, 3, 4, 5, and 6

HUMMINGBIRDS

Sensitivity to disturbance: As a group, hummingbirds are generally tolerant of close human activity, even at less than 25 feet; however, flowering plants whose flowers attract hummingbirds should be left intact within 200 yards of the nest, wherever possible.

Black-chinned Hummingbird (*Archilochus alexandri*)

Nest: in trees and shrubs 4 to 10 feet up
Breeding season: mid-April through mid-June; two or three broods
Incubation: 13-16 days; only female incubates
Nestlings: altricial, fledge at 21 days
Project breeding distribution: Segments 3 and 4; possible in Segments 1, 2, and 5; unlikely in Segment 6

Anna's Hummingbird (*Calypte anna*)

Nest: in wide variety of sites wherever narrow support for nest is present; 2 to 30 feet up
Breeding season: mid-December through late June; two or three broods
Incubation: 16-17 days; only female incubates
Nestlings: altricial, fledge at 25-26 days
Project breeding distribution: throughout

Costa's Hummingbird (*Calypte costae*)

Nest: in trees and shrubs, 1 to 9 feet up
Breeding season: mid-April through mid-July; single brood
Incubation: 15-18 days; only female incubates
Nestlings: altricial, fledge at 20-23 days
Project breeding distribution: Segments 2, 3, 4, 5, and 6; possible in Segment 1

Allen's Hummingbird (*Selasphorus sasin*)

Nest: in a tree saddling a twig or in fork of limb in bush, 10-30 feet up, occasionally to 90 feet
Breeding season: late February through late June; double brood
Incubation: 16-22 days; only female incubates
Nestlings: altricial, fledge at 22 days
Project breeding distribution: possible in Segments 1, 2, and 3; unlikely in Segment 4

WOODPECKERS

Sensitivity to disturbance: All woodpeckers are cavity nesters, and as such, are somewhat more secluded and protected than open cup-nesting birds that use stick nests. Unless the nest tree or adjacent trees are physically disturbed, woodpeckers are tolerant of temporary human disturbance. Importantly, the live trees and snags that woodpeckers forage in and that surround the nest tree need to be protected through the nesting season.

Acorn Woodpecker *(Melanerpes formicivorus)*

Nest: in a hole in a tree in open woodland or partly wooded areas; will nest in utility poles 5 to 25 feet up
Breeding season: early April through mid-September; two or three broods
Incubation: 11-12 days; both sexes incubate
Nestlings: altricial, fledge at 31 days
Project breeding distribution: Segments 1, 3, and 4; possible in Segments 2 and 5

Ladder-backed Woodpecker (*Picoides scalaris*)

Nest: in tree or bush cavity, especially mesquite and yucca, near wash or stream, usually 5-15 feet up
Breeding season: early April through early June; probably single brooded
Incubation: ca. 13 days; both sexes incubate
Nestlings: altricial, leave nest at ca. 31 days

Project breeding distribution: Segments 5 and 6

Nuttall's Woodpecker (*Picoides nuttallii*)

Nest: in cavity in tree trunk, typically in dead wood, 2 to 60 feet up
Breeding season: mid-April through late June; single brood
Incubation: 14 days; both sexes incubate
Nestlings: altricial, fledge at 29 days
Project breeding distribution: Segments 1, 2, 3, and 4; possible in Segments 5 and 6

Downy Woodpecker (*Picoides pubescens*)

Nest: in cavity in tree trunk, typically in dead wood, 8 to 50 feet up
Breeding season: early April through late May; double brood
Incubation: 12 days; both sexes incubate
Nestlings: altricial, fledge at 20-22 days
Project breeding distribution: Segments 3 and 4; possible in Segments 1 and 2

Northern Flicker (*Colaptes auratus*)

Nest: on ground or up to 100 feet in tree trunk in open or sparsely wooded area; more often in live wood.
Breeding season: early April through early June; single brood
Incubation: 11-13 days; both sexes incubate
Nestlings: altricial, fledge at 25-28 days
Project breeding distribution: Segments 3 and 4; possible in Segments 1 and 2; unlikely in Segments 5 and 6

PASSERINES (CAVITY AND CREVICE NESTERS)

Sensitivity to disturbance: The largest group of North American birds, Passerines are extremely variable in terms of nesting preferences and tolerance to human disturbance. Many species have adapted well to human-created habitats while those preferring more natural areas (both individual pairs and species) are generally less tolerant. Due to the protected nature of cavity nests, the species that build them seem more tolerant than most open-cup nesting species. If closely monitored in terms of incubation and feeding bouts, all species in this group tolerate significant reductions in buffer width from the standard of 300 feet if the habitat, terrain, nesting status, and the distance and form of disturbance are carefully evaluated.

Say's Phoebe (*Sayornis saya*)

Nest: in open areas on ledge with some type of overhang, or under bridge; from ground to 80 feet up
Breeding season: late March through late June; double brood
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 14-18 days
Project breeding distribution: possible throughout

Ash-throated Flycatcher (*Myiarchus cinerascens*)

Nest: in tree cavity in open deciduous woodland; averaging around 13 feet up, but below 20 feet; can also nest in open pipes (vertical or horizontal)
Breeding season: early May through early July; single brood
Incubation: 15 days; only female incubates
Nestlings: altricial, fledge at 16-17 days
Project breeding distribution: throughout

Brown-crested flycatcher (*Myiarchus tyrannulus*)

Nest: in cavities such as woodpecker holes or natural cavities
Breeding season: April through July; single brood
Incubation: No information on incubation period; only female is presumed to incubate
Nestlings: No information
Project breeding distribution: unlikely in Segment 6

Tree Swallow (*Tachycineta bicolor*)

Nest: in natural tree cavities and occasionally in nest boxes in open habitat near bodies of water
Breeding season: March through July; double brood
Incubation: 11-20 days; only female incubates
Nestlings: altricial, depart nest at 18-25 days
Project breeding distribution: possible in Segments 3 and 4

Mountain Chickadee (*Poecile gambeli*)

Nest: in natural cavity, woodpecker hole, or nest box in montane coniferous forest, usually low, but occasionally to 80 feet
Breeding season: mid-May through early July; possibly double brooded
Incubation: 14 days; only female incubates
Nestlings: altricial, fledge at 21 days
Project breeding distribution: unlikely in Segments 1, 2, 3, and 4

Oak Titmouse (*Baeolophus inornatus*)

Nest: natural cavity in tree trunk or branch, 3 to 11 feet up, in oak woodland
Breeding season: late March through early June; single brood
Incubation: 14-16 days; only female incubates
Nestlings: altricial, fledge at 17 days
Project breeding distribution: Segments 3 and 4; possible in Segments 1 and 2

Rock Wren (*Salpinctes obsoletus*)

Nest: in crevice on rocky slopes, rock outcrops, and erosion gullies
Breeding season: late March through mid-June; two or three broods
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 14-16 days
Project breeding distribution: Segments 5 and 6; possible in Segments 1, 2, 3, and 4

Canyon Wren (*Catherpes mexicanus*)

Nest: an open cup placed on ledge or in crevice on steep rocky wall
Breeding season: late March through late July; double brood
Incubation: 12-18 days; only female incubates
Nestlings: altricial, fledge at 15 days
Project breeding distribution: possible in Segments 4, 5, 6; unlikely in Segments 1, 2, and 3

House Wren (*Troglodytes aedon*)

Nest: wherever there is shrubby cover and thickets; also on or in buildings, machinery; in cavity or crevice of any type, including nest boxes, 4 to 30 feet up
Breeding season: early April through mid-July; double brood
Incubation: 13-15 days; only female incubates
Nestlings: altricial, fledge at 12-18 days
Project breeding distribution: Segments 1, 2, 3, and 4; possible in Segment 5; unlikely in Segment 6

Bewick's Wren (*Thryomanes bewickii*)

Nest: in open woodlands and shrubby areas, in a tree cavity or on ground, between rocks, or in brush pile, to 20 feet up
Breeding season: mid-March through early July; two or three broods
Incubation: 14 days; only female incubates; male feeds female
Nestlings: altricial, fledge at 14 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; possible in Segment 6

Western Bluebird (*Sialia mexicana*)

Nest: in woodland clearings in tree cavity, 5 to 40 feet up
Breeding season: mid-April through late June; double brood
Incubation: 13-14 days; only female incubates
Nestlings: altricial, fledge at 20 days
Project breeding distribution: possible in Segments 1, 2, 3, and 4

PASSERINES (BRIDGE, CULVERT, AND BUILDING NESTERS)

Sensitivity to disturbance: Generally, this group of passerines is more tolerant than the preceding group because of their practice of nesting near people; however, since they often build their nest on or in a human-created structure, access to their nesting area must remain unobstructed.

Black Phoebe (*Sayornis nigricans*)

Nest: on ledge with some type of overhang or under a bridge, often around development, usually near water
Breeding season: mid-March through late June; double brood
Incubation: 15-18 days; typically only female incubates
Nestlings: altricial, fledge at 21 days
Project breeding distribution: Segments 1, 2, 3, 4, and 6; possible in Segment 5

Say's Phoebe (*Sayornis saya*)

See “Passerines (Cavity and Crevice Nesters) ”

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)

Nest: in burrow on steep slope or in crevice or hole in bridge or building; 2 to 50 feet high
Breeding season: late April through mid-June; single brood
Incubation: 15-16 days; only female incubates
Nestlings: altricial, fledge at 18-21 days
Project breeding distribution: throughout

Cliff Swallow (*Petrochelidon pyrrhonota*)

Nest: near water; placed at a 90-degree juncture of vertical wall and horizontal overhang, on cliff face, building, or bridge; breeds in dense colonies
Breeding season: late April through early June; double brood
Incubation: 12-14 days; both sexes incubate
Nestlings: altricial, fledge at 23 days; may return to nest for 2-3 days after fledging
Project breeding distribution: Segments 1, 2, 3, and 4; possible in Segment 6; unlikely in Segment 5

Barn Swallow (*Hirundo rustica*)

Nest: near water in open country; typically 6 to 40 feet up in buildings and bridges; colonial nester
Breeding season: mid-April through mid-July; double brood
Incubation: 14-16 days; both sexes incubate
Nestlings: altricial, fledge at 17-24 days
Project breeding distribution: possible in Segments 1, 2, 3, and 4

House Wren (*Troglodytes aedon*)

See “Passerines (Cavity and Crevice Nesters) ”

House Finch (*Haemorhous mexicanus*)

Nest: in cultivated areas and around development in a variety of sites, 3 to 12 feet up; will use same nest for second brood
Breeding season: late March through mid-July; two or three broods
Incubation: 12-14 days; only female incubates; male feeds female
Nestlings: altricial, fledge at 14-16 days

Project breeding distribution: throughout

PASSERINES (GROUND NESTERS, OPEN HABITATS)

Sensitivity to disturbance: These species are especially vulnerable because their nest site, if not the nest itself, is exposed to surrounding activity and subject to easy predation by both ground and aerial predators. In addition, because they are ground nesters and are acutely aware of visual and auditory stimuli in the area surrounding the nest site, they may take flight as a result of vibrations produced by vehicles at significant distances from the nest. If the adult is flushed off its nest on hot days, the few minutes away can result in nest failure due to heat stress (eggs and young) and dehydration (young) from high ambient air and ground temperatures.

California Horned Lark (*Eremophila alpestris actia*)

Nest: on ground in small depression, usually sheltered by plant tufts
Breeding season: late March through early June; two or three broods
Incubation: 10-14 days; only female incubates
Nestlings: altricial, fledge at 9-12 days
Project breeding distribution: throughout

Rock Wren (*Salpinctes obsoletus*)

See “Passerines (Cavity and Crevice Nesters)”

Lark Sparrow (*Chondestes grammacus*)

Nest: in open grassland, usually in depression on ground lined with grasses; can be in lower portion of a shrub or small tree; ground to 25 feet up
Breeding season: early April through early July; double brood
Incubation: 11-13 days; only female incubates
Nestlings: altricial, fledge at 9-10 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; possible in Segment 6

Bell’s Sparrow (*Artemisiospiza belli belli*)

Nest: in chaparral or coastal sage scrub, on the ground or in a shrub 6-18 inches above ground
Breeding season: February through July; single brood
Incubation: 10-16 days; only female incubates
Nestlings: altricial, fledge at 10-11 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; possible in Segment 6

Grasshopper Sparrow (*Ammodramus savannarum*)

Nest: cup nest in grass on the ground
Breeding season: April through August; two or more broods
Incubation: 11-13 days; only female incubates
Nestlings: altricial, fledge at 10 days
Project breeding distribution: unlikely in Segments 2, 3, and 4

Western Meadowlark (*Sturnella neglecta*)

Nest: in open grasslands; domed nest often has tunnel through matted grass to entrance; may breed in small colonies
Breeding season: mid-March through mid-June; double brood
Incubation: 13-15 days; only female incubates
Nestlings: altricial, fledge at 10-12 days
Project breeding distribution: Segments 2, 3, 4, 5, and 6

PASSERINES (UNDERSTORY AND THICKET NESTERS)

Sensitivity to disturbance: Members of this passerine group nest in fairly secluded wooded areas or very dense, shrubby habitats. As such, they can tolerate human disturbance at fairly close range, but their nests should nevertheless be carefully monitored for signs of disturbance.

Pacific-slope Flycatcher (*Empidonax difficilis*)

Nest: in riparian habitat in cavity or tree stump or on ledge or in crevice, from ground to 25 feet or higher
Breeding season: late April through late July; sometimes double brooded
Incubation: 14-15 days; only female incubates
Nestlings: altricial, fledge at 15-18 days
Project breeding distribution: possible in Segments 3 and 4

Western Scrub-Jay (*Aphelocoma californica*)

Nest: in woodland and scrub in shrub, tree, bush or vine tangle, usually pretty densely covered, 3 to 10 feet up
Breeding season: mid-March through late June; single brood
Incubation: 15-17 days; only female incubates, male feeds female; may have unpaired nest helpers
Nestlings: altricial, fledge at 18 days
Project breeding distribution: Segments 1, 2, 3, and 4; possible in Segment 5

Bushtit (*Psaltriparus minimus*)

Nest: hanging nest in tree or shrub, 4 to 50 feet high
Breeding season: mid-March through late June; probably double brooded
Incubation: 12-13 days; both sexes incubate
Nestlings: altricial, fledge at 14-15 days
Project breeding distribution: Segments 1, 2, 3, and 4; possible in Segments 5 and 6

Bewick's Wren (*Thryomanes bewickii*)

See “Passerines (Cavity and Crevice Nesters)”

Black-tailed Gnatcatcher (*Polioptila melanura*)

Nest: in fork of branches in dense, thorny, or leafy shrub or tree, 3-10 feet high
Breeding season: April through August; double brood
Incubation: 14-15 days; both sexes incubate
Nestlings: altricial, fledge at 9-15 days
Project breeding distribution: possible in Segments 5 and 6

Blue-gray Gnatcatcher (*Polioptila caerulea*)

Nest: cup in tree or shrub in variety of habitats from sparse scrub to heavy woodland, 3 to 80 feet up
Breeding season: mid-April through mid-July; double brood
Incubation: 15 days; both sexes incubate
Nestlings: altricial, fledge at 12-13 days
Project breeding distribution: unlikely in Segments 1, 2, 3, and 4

Wrentit (*Chamaea fasciata*)

Nest: in sage scrub and chaparral, 1 to 4 feet off ground
Breeding season: late March through mid-July; double brood
Incubation: 15-16 days; both sexes incubate
Nestlings: altricial, fledge at 15-16 days
Project breeding distribution: Segments 1, 2, 3, and 4; unlikely in Segment 5

California Thrasher (*Toxostoma redivivum*)

Nest: in low tree or shrub in sage scrub and chaparral, 2 to 4 feet off ground
Breeding season: mid-February through early July; double brood
Incubation: 14 days; both sexes incubate
Nestlings: altricial, fledge at 12-14 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; possible in Segment 6

Orange-crowned Warbler (*Oreothlypis celata*)

Nest: variety of habitats, on ground or in shrub, to 2 feet up
Breeding season: late April through early July; single brood
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 12-13 days
Project breeding distribution: unlikely in Segments 1, 2, 3, and 4

Yellow Warbler (*Setophaga petechia*)

Nest: in tree or shrub in shrubby growth in riparian areas, 2 to 40 feet high, usually below 12 feet
Breeding season: early May through early July; sometimes double brooded
Incubation: 11 days; only female incubates
Nestlings: altricial, fledge at 9-12 days
Project breeding distribution: Segments 3 and 4; possible in Segments 1, 2, and 5

Black-throated Gray Warbler (*Setophaga nigrescens*)

Nest: in tree or shrub in open woodlands, to 50 feet up, but usually 3 to 10 feet
Breeding season: mid-May through early July; single brood
Incubation: unknown; only female incubates
Nestlings: altricial , unknown age to fledging
Project breeding distribution: unlikely in Segments 2, 3, and 4

Common Yellowthroat (*Geothlypis trichas*)

Nest: in low undergrowth by water in reeds over water, near ground to 3 feet up
Breeding season: mid-April through early July; double brood
Incubation: 12 days; only female incubates
Nestlings: altricial, fledge at 9-10 days
Project breeding distribution: Segments 3 and 4; possible in Segments 1 and 2; unlikely in Segment 6

Yellow-breasted Chat (*Icteria virens*)

Nest: in dense shrub or tangle in thick riparian vegetation, ground to 8 feet up
Breeding season: late April through mid-July; double brood
Incubation: 11-12 days; only female incubates
Nestlings: altricial, fledge at 8-11? days
Project breeding distribution: Segment 4; possible in Segments 2, 3, and 5

Spotted Towhee (*Pipilo maculatus*)

Nest: in low shrubby growth usually on ground or very low in bush, 1 to 5 feet up
Breeding season: early April through late July; two or three broods
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 9-11 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5 (especially in riparian and chaparral habitats); unlikely in Segment 6

Rufous-crowned Sparrow (*Aimophila ruficeps*)

Nest: in dry rocky areas with sparse undergrowth, on or near ground at base of grass clump
Breeding season: early April through late June

Incubation:11-13 days; only female incubates
Nestlings: altricial, fledge at 8-9 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; possible in Segment 6

California Towhee (*Melozone crissalis*)

Nest: in shrub or small tree in brushy areas, 1 to 35 feet up, but usually 4 to 12 feet
Breeding season: mid-March through mid-July; double brood
Incubation: 14 days; only female incubates
Nestlings: altricial, fledge at 10 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; possible in Segment 6

Black-chinned Sparrow (*Spizella atrogularis*)

Nest: in sagebrush, brushy montane hillsides in a shrub 1-3 feet up
Breeding season: late April through early July
Incubation: 13 days, presumably only by female
Nestlings: altricial, young leave nest at 10 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; unlikely in Segment 6

Song Sparrow (*Melospiza melodia*)

Nest: variety of habitats in low shrubby growth and thickets from ground to 4 feet up
Breeding season: early March through late July
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 10 days
Project breeding distribution: Segments 3, 4, and 5; possible in Segments 1 and 2; unlikely in Segment 6

Blue Grosbeak (*Passerina caerulea*)

Nest: shrubby growth, weedy pastures, thickets, and low trees; build nest in twig fork, 6 inches to 15 feet up
Breeding season: early May through late July; double brood
Incubation: 11 to 13 days; only female incubates
Nestlings: altricial, fledge at 9 to 13 days
Project breeding distribution: Segments 3, 4, and 5; possible in Segments 1, 2, and 6

Lazuli Bunting (*Passerina amoena*)

Nest: in low, thick scrub and riparian habitats, 1 to 10 feet up
Breeding season: early May through early July; double brood
Incubation: 12 days; only female incubates
Nestlings: altricial, fledge at 10-15 days
Project breeding distribution: possible in Segments, 1, 2, 3, 4, and 5; unlikely in Segment 6

Red-winged Blackbird (*Agelaius phoeniceus*)

Nest: in vegetation at the edge of water, in reeds or shrubs near ground to 14 feet up; semi-colonial
Breeding season: late March through late June; double brood
Incubation: 10-12 days; only female incubates
Nestlings: altricial, fledge at 10-11 days
Project breeding distribution: Segments 3, 4, and 5; possible in Segments 1, 2, and 6

American Goldfinch (*Spinus tristis*)

Nest: in variety of habitats but usually associated with water, 1 to 33 feet up
Breeding season: mid-April through early August; two or three broods
Incubation: 12-14 days; only female incubates; male feeds female
Nestlings: altricial, fledge at 11-17 days
Project breeding distribution: Segments 3, 4, and 5; possible in Segments 1 and 2

PASSERINES (SHRUB AND TREE NESTERS)

Sensitivity to disturbance: These species nest relatively high off the ground, and even though their nest site may be more exposed to nearby construction-related activity, they generally maintain a greater vertical distance from most types of disturbance. Therefore, most can tolerate human disturbance relatively close to their nest sites as measured from the ground.

Pacific-slope Flycatcher (*Empidonax difficilis*)

See “Passerines (Understory and Thicket Nesters)”

Cassin's Kingbird (*Tyrannus vociferans*)

Nest: in trees and on poles and transmission towers in open country, 8 to 40 feet, sometimes higher
Breeding season: late April through late June; double brood
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 14 days
Project breeding distribution: Segments 1, 2, 3, and 4

Western Kingbird (*Tyrannus verticalis*)

Nest: open country in trees and on poles and transmission towers , 5 to 40 feet up
Breeding season: late April through early June; double brood
Incubation: 12-14 days; both sexes incubate
Nestlings; altricial, fledge at 13-19 days
Project breeding distribution: throughout

Hutton's Vireo (*Vireo huttoni*)

Nest: in live oaks and other trees along streams and canyons, suspended on twig fork, 5 to 35 feet high
Breeding season: mid-March through late June; double brood
Incubation: 14-16 days; both sexes incubate
Nestlings: altricial, fledge at 14 days
Project breeding distribution: possible in Segments 3 and 4

American Crow (*Corvus brachyrhynchos*)

Nest: in variety of habitats in trees, 10 to 70 feet up
Breeding season: late March through early June; single or double brood
Incubation: 18 days; only female incubates; may have unpaired nest helpers
Nestlings: altricial, fledge at 35 days
Project breeding distribution: Segments 1, 2, 3, and 4; possible in Segments 5 and 6

Common Raven (*Corvus corax*)

Nest: in variety of habitats such as sheltered rock ledges or in the fork of trees, or on utility poles and transmission towers, 45 to 80 feet up
Breeding season: early March through late May; single brood
Incubation: 20-21 days; only female incubates; male feeds female
Nestlings: altricial, fledge at 5-6 weeks
Project breeding distribution: throughout

Bushtit (*Psaltriparus minimus*)

See “Passerines (Understory and Thicket Nesters)”

Black-tailed Gnatcatcher (*Polioptila melanura*)

See “Passerines (Understory and Thicket Nesters)”

Blue-gray Gnatcatcher (*Polioptila caerulea*)

See “Passerines (Understory and Thicket Nesters)”

American Robin (*Turdus migratorius*)

Nest: in open areas in tree or shrub, usually in a fork, or on ledge of building, 3 to 25 feet up
Breeding season: mid-May through late July; two or three broods
Incubation: 11-14 days; only female incubates
Nestlings: altricial, fledge at 14-16 days
Project breeding distribution: possible in Segments 1, 2, 3, and 4

Northern Mockingbird (*Mimus polyglottos*)

Nest: in shrub in open woodlands, bushes, and in developed areas, 3 to 50 feet up, typically 3 to 10 feet
Breeding season: late March through late July; two or three broods
Incubation: 11-14 days; only female incubates
Nestlings: altricial, fledge at 12-14 days
Project breeding distribution: throughout, including urban areas

Phainopepla (*Phainopepla nitens*)

Nest: in desert scrub (desert) or branch of a tree (coastal slope), 4 to 50 feet up.
Breeding season: early March through late May in the desert and late May through mid-August on coastal slope; double brood
Incubation: 14-15 days; both sexes incubate
Nestlings: altricial, fledge at 18-19 days
Project breeding distribution: throughout

Yellow Warbler (*Setophaga petechia*)

See "Passerines (Understory and Thicket Nesters)"

Black-throated Gray Warbler (*Setophaga nigrescens*)

See "Passerines (Understory and Thicket Nesters)"

Summer Tanager (*Piranga rubra*)

Nest: among cluster of leaves or in fork of branches in riparian vegetation, 4 to 70 feet high
Breeding season: May through August; one or two broods
Incubation: 11-12 days; only female incubates
Nestlings: altricial, fledge at 9-10 days
Project breeding distribution: unlikely in Segment 6

Black-headed Grosbeak (*Pheucticus melanocephalus*)

Nest: in higher thickets, in trees along streams or in open woodlands, 6 to 12 feet high
Breeding season: late April through late July; single brood
Incubation: 12-13 days; both sexes incubate
Nestlings: altricial, fledge at 12 days
Project breeding distribution: Segments 3 and 4; possible in Segment 5

Blue Grosbeak (*Passerina caerulea*)

See "Passerines (Understory and Thicket Nesters)"

Brewer's Blackbird (*Euphagus cyanocephalus*)

Nest: usually near water in trees or shrubs, but also in cultivated and urban areas; 18 to 130 feet high, sometimes to 150 feet
Breeding season: late March through early July; double brood
Incubation: 12-13 days; only female incubates
Nestlings: altricial, fledge at 13 days
Project breeding distribution: possible throughout

Great-tailed Grackle (*Quiscalus mexicanus*)

Nest: variety of habitats and substrates including cattails, willows, palms, and shade trees, 5 to 15 feet up; colonial breeder.
Breeding season: mid-April through mid-August; double brood
Incubation: 13-14 days; only female incubates; male does not participate in nesting other than to defend against predators
Nestlings: altricial, fledge at 14 days
Project breeding distribution: Segments 3 and 4 (especially at Fisherman's Retreat); possible in Segment 5

Hooded Oriole (*Icterus cucullatus*)

Nest: in shade trees, palms and shrubs, often near houses, 10 to 45 feet up
Breeding season: mid-April through early August; two or three broods
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 14 days
Project breeding distribution: throughout

Bullock's Oriole (*Icterus bullockii*)

Nest: in areas with scattered large trees, tree rows, or riparian corridors, 6 to 50 feet up
Breeding season: late April through early July; single brood
Incubation: 14 days; only female incubates
Nestlings: altricial, fledge at 14 days
Project breeding distribution: Segments 1, 2, 3, 4, and 5; possible in Segment 6

House Finch (*Haemorhous mexicanus*)

See "Passerines (Bridge, Culvert, and Building Nesters)"

Lesser Goldfinch (*Spinus psaltria*)

Nest: in open country in trees and shrubs, 2 to 30 feet up
Breeding season: early April through mid-July; two or three broods
Incubation: 12 days; only female incubates; male feeds female
Nestlings: altricial, fledge at 11 days
Project breeding distribution: throughout

Lawrence's Goldfinch (*Spinus lawrencei*)

Nest: in scattered trees and open woodlands, 3 to 40 feet high on branch
Breeding season: early April through late July
Incubation: 12-13 days; only female incubates; male feeds female.
Nestlings: altricial, fledge at 11 days
Project breeding distribution: possible Segments 1, 2, 3, 4, and 5; unlikely in Segment 6

American Goldfinch (*Spinus tristis*)

See "Passerines (Understory and Thicket Nesters)"

PASSERINES (OPEN SCRUB NESTERS)

Sensitivity to Disturbance: This group of passerines is fairly vulnerable to nest predation due to the low elevation of their nest above the ground and relatively high visibility of the adults moving back and forth with food to the shrub containing the nest. Several species also nest in arid locations making their nest contents vulnerable to heat.

Loggerhead Shrike (*Lanius ludovicianus*)

Nest: in dense shrub in open country, 3 to 30 ft high, usually below 15 feet
Breeding season: late February through late June; two or three broods
Incubation: 14-16 days; only female incubates, male stays nearby and brings food

Nestlings: altricial, fledge at 17-21 days
Project breeding distribution: Segments 3, 4, 5, and 6; possible in Segments 1 and 2

Verdin (*Auriparus flaviceps*)

Nest: in thorny shrub, mesquite tree, or cactus, 2-12 feet up; many nests are used for roosting throughout the year
Breeding season: mid-March through late May; probably double brooded
Incubation: 14 days; only female incubates
Nestlings: altricial, leave nest at ca. 3 weeks but continue to roost in nest long afterward
Project breeding distribution: Segments 5 and 6

Cactus Wren (*Campylorhynchus brunneicapillus*)

Nest: a bulky dome in cactus thickets 4 to 9 feet up ; will build multiple ("dummy") nests that are not used for breeding
Breeding season: early March through late July; two or three broods
Incubation: 14-15 days; only female incubates; male feeds female
Nestlings: altricial, fledge at 14-17 days
Project breeding distribution: Segments 5 and 6; unlikely in Segments 2, 3, and 4

American Robin (*Turdus migratorius*)

See "Passerines (Shrub and Tree Nesters)"

Northern Mockingbird (*Mimus polyglottos*)

See "Passerines (Shrub and Tree Nesters)"

Le Conte's Thrasher (*Toxostoma lecontei*)

Nest: in desert areas with shrubby growth, in cholla or a low tree, 2 to 8 feet up
Breeding season: early February through mid-June; two or three broods
Incubation: 14-20 days; both sexes incubate
Nestlings: altricial, fledge at 14-17 days
Project breeding distribution: Segments 5 and 6

Phainopepla (*Phainopepla nitens*)

See "Passerines (Shrub and Tree Nesters)"

Black-throated Sparrow (*Amphispiza bilineata*)

Nest: desert areas with sparse shrub cover, in shrub or cactus 6-18 inches off ground
Breeding season: late March through early July; probably double brooded
Incubation: ca. 12 days
Nestlings: altricial, fledge at 9-10 days
Project breeding distribution: Segments 5 and 6

Brewer's Blackbird (*Euphagus cyanocephalus*)

See "Passerines (Shrub and Tree Nesters)"

Lesser Goldfinch (*Spinus psaltria*)

See "Passerines (Shrub and Tree Nesters)"

Lawrence's Goldfinch (*Spinus lawrencei*)

See "Passerines (Shrub and Tree Nesters)"

American Goldfinch (*Spinus tristis*)

See "Passerines (Understory and Thicket Nesters)"

PASSERINES (TOWER NESTERS)

Sensitivity to disturbance: Some species such as common raven often nest on utility poles and electrical transmission towers in the open. These species need close evaluation, as some pairs by virtue of their acceptance of existing human activity are well adjusted; whereas, pairs nesting on towers in remote areas are often skittish and prone to nest failure early if frequently flushed off eggs.

Cassin's Kingbird (*Tyrannus vociferans*)

See “Passerines (Shrub and Tree Nesters)”

Western Kingbird (Tyrannus verticalis)

See “Passerines (Shrub and Tree Nesters)”

Common Raven (*Corvus corax*)

See “Passerines (Shrub and Tree Nesters)”

House Finch (*Haemorhous mexicanus*)

See “Passerines (Bridge, Culvert, and Building Nesters)”

PASSERINES (MARSH NESTERS)

Sensitivity to disturbance: In many respects the pairs and their nests are protected by the water that surrounds their supporting emergent vegetation and nests. As a result, many marshland nesting birds have a natural buffer that provides a large level of protection. All three species are tolerant of modest levels of human activity. Pairs nesting on wetland edges can be further protected by adding additional terrestrial buffers.

Virginia Rail (*Rallus limicola*)

See “Shorebirds and Rails”

Sora (Porzana carolina)

See “Shorebirds and Rails”

Marsh Wren (*Cistothorus palustris*)

Nest: in marshes from 1 to 6 feet high
Breeding season: late March through late August; double or triple brood
Incubation: 12-14 days; only female incubates
Nestlings: altricial, fledge at 13-15 days
Project breeding distribution: possible in Segments 3 and 4 (especially Fisherman’s Retreat)

Common Yellowthroat (*Geothlypis trichas*)

See “Passerines (Understory and Thicket Nesters)”

Red-winged Blackbird (*Agelaius phoeniceus*)

See “Passerines (Understory and Thicket Nesters)”

Tricolored Blackbird (*Agelaius tricolor*)

Nest: in sloughs, swamps, and marshes from ground level to 12 feet high; colonial breeder
Breeding season: mid-April through early June; double brood
Incubation: 11 days; only female incubates
Nestlings: altricial, fledge at 13 days
Project breeding distribution: possible in Segments 3 and 4 (especially Fisherman’s Retreat)

Great-tailed Grackle (*Quiscalus mexicanus*)

See “Passerines (Shrub and Tree Nesters)”

Appendix C
Location of Wildlife Rehabilitation Places

West of Devers – Location of Wildlife Rehabilitation

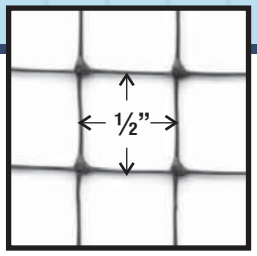
California Department of Fish and Wildlife Region 6

County	City	Name	Phone	Specializations
San Bernardino	Big Bear Lake	Moonridge Zoo	909-584-1299	All
Riverside	Cherry Valley	Stephanie McKiernan	951-769-0847	
San Bernardino	Chino Hills	All Gods Creatures	909-393-1590	
Riverside	Corona	Hope Wildlife	951-279-3232	
Riverside	Idyllwild	Robin Gates	951-659-9829	
Riverside	Indio	Coachella Valley Wild Bird Center	760-347-2647	
San Bernardino	Oak Glen	Kandie Cansler	909-790-1010	Raptors
Riverside	Palm Desert	The Living Desert Zoo & Gardens	760-346-5694	All
San Bernardino	San Bernardino	Joseph & Linda Chalk	887-8267	All, raptors
San Bernardino	Victorville	Dawn Sylvester-Dunn	909-245-1694	Bats
Los Angeles County	San Dimas	Wildwings of California	909-592-4900	Raptors and some bird species

Appendix D
Bird Netting Example

PS

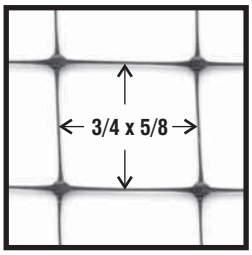
PollyNet™ BIRD NETTING



PollyNet Premium:
Tough, seamless net used for all bird net applications. Small mesh stops birds of all sizes. Economical &UV resistant polypropylene.

Applications:

Windows	Bell Towers
Gazebos	Canopies
Roof Eaves	Dormers
Louvers	Columns
Docks	Bridges
Workshops	Garages
Boat Docks	Fish Ponds
Gardens	Signs
Balconies	I-Beams
Barns/sheds	Storeroom
Crawlspace	Dryer vent



PollyNet Lightweight:
Ultra-light construction. Use for where low visibility & economy are more important than longevity. Low cost.

Applications:

Gardens	Grape Vines
Greenhouses	Nurseries
Berry Crops	Water Tanks
Statues	Landscaping
Hatcheries	Attics
Food Courts	Auditoriums
Duct Work	Piping
Balconies	Potting Sheds
Lattice Work	Seeded Turf

Effective, Durable, Easy To Install and Economical. What More Can You Ask From a Bird Control Netting?

Flexible and easy to cut, PollyNet is an extruded, knotless, UV stabilized, polypropylene bird netting. It is easy to handle, easy to cut, installs quickly and is the most economical bird netting system available. Because the mesh sizes are no larger than 3/4"(1.9cm), PollyNet works for all birds including: sparrows, starlings, pigeons, seagulls, etc. Install PollyNet on, over or around an endless list of objects, openings and structures to protect them from pest birds.

PollyNet has a high strength-to-weight ratio and is dimensionally stable, maintaining its mesh size and shape during installation. Because it is pre-stretched during the extrusion process, a PollyNet installation exhibits minimal stretch or sag. PollyNet is offered in two grades, Premium and Lightweight. Both are made from the same UV resistant black polypropylene material but are used for different applications.

Premium PollyNet - 5 Year UV Warranty

The ½" (1.3cm) square mesh of the Premium PollyNet keeps out all birds including small species. Premium PollyNet comes 14 feet wide and is available in several precut lengths or in bulk rolls. This tough and resilient bird netting is made to withstand the rigors of exterior architectural, agricultural and aquacultural applications.

Premium PollyNet Sizes:
14'x50', 14'x100', 14'x250' and a **14'x3,000' bulk roll**.

Lightweight PollyNet - Disposable Netting

Choose lightweight netting when **low visibility** and **economy are more important than netting longevity**. Lightweight PollyNet has thin strands and large 3/4" x 5/8"(1.9cm x 1.6cm) mesh that makes it very difficult to see when installed. Lightweight comes 17 feet wide and is available in several precut sizes or in bulk rolls.

Lightweight PollyNet Sizes:
17'x50', 17'x100', 17'x250' and a **17'x5,000' bulk roll**.

PollyNet Installation Hardware

Nixalite offers a full line of bird netting installation hardware. For a complete PollyNet installation, we recommend using the **Poly Hardware** to secure the bird netting. Refer to the Nixalite price catalog for details or contact us directly.

Phone: 800.624.1189 or 309.755.8771 **Fax**: 800.624.1196 or 309.755.0077
Web: www.nixalite.com **Email:** birdcontrol@nixalite.com

Nixalite® of America Inc.
1025 16th Avenue East Moline, IL. 61244
Experts In Architectural Bird Control Since 1950

PollyNet Bird Netting

Short Form CSI Specifications: CSI Division 10290 - Bird Control

PollyNet™
Available from: ABC/Nixalite
1025 16th Avenue, East Moline, IL 61244,
Phone: 800.624.1189 or 309.755.8771, Fax: 800.624.1196 or 309.755.0077, E-mail: birdcontrol@nixalite.com
Web: www.nixalite.com
CSI Division: 10290/NIX or 10290/ABC

PR-Product Presentation
PollyNet is extruded black polypropylene, knot-free, UV stabilized, bird netting. Available in Premium and Lightweight grades, PollyNet is easy to handle, installs quickly and is the most economical bird netting system available.

PollyNet has a high strength-to-weight ratio and is dimensionally stable, maintaining its size and shape during installation. It will not absorb water and resists the effects from rain, fog, ice and humidity.

PollyNet Installation Hardware
Nixalite offers a complete line of installation hardware for the PollyNet. Easily fasten to wood, masonry, stone, sheet metal, steel, etc.

Premium PollyNet Sizes:
14' x 50' (4.2m x 15.2m), 14' x 100' (4.2m x 30.5m), 14' x 250' (4.2m x 76.2m). Bulk rolls up to 3,000' (914.4m) available.

Lightweight PollyNet Sizes:
17' x 50' (5.1m x 15.2m), 17' x 100' (5.1m x 30.5m), 17' x 250' (5.1m x 76.2m). Bulk rolls up to 5,000' (1,524.0m) available.

UA-Uses, Applications
Install PollyNet to exclude birds from a variety of applications. PollyNet works for all birds, including sparrows, starlings, pigeons, seagulls, etc.

Premium PollyNet:
For architectural, agricultural and aquacultural applications: windows, bell towers, gazebos, canopies, roof eaves, column caps, shipping docks, warehouses, exhaust vents, boat docks, gardens, balconies, HVAC units, etc.

Lightweight PollyNet:
Used for temporary or seasonal bird control applications: gardens, greenhouses, nurseries, berry crops, lattice work, seeded turf, water tanks, etc.

AI-Assembly, Installation
PollyNet is available in many pre-cut sizes. Use the installation hardware and procedures recommended by manufacturer.

MF-Materials, Finishes
PollyNet is made from heavy duty, ultra-violet stabilized polypropylene. Installation hardware is available in polypropylene, stainless steel and galvanized.

TS-Technical Support
Nixalite representatives are available for technical assistance in any aspect of planning, specifying and installation. Free literature and cut sheets available.

PollyNet Thermal Properties:
Melting Point: 320+ degrees F.
Flash Point: 625 degrees F.

PollyNet Chemical Properties:
Polypropylene is inert and resistant to a wide range of chemicals.

SPECIFICATION GUIDELINES

Part 1 - General

1.1 Description
1.1.1 Install PollyNet to exclude pest birds from any open area, structural opening or complicated roost to eliminate the maintenance and repair caused by pest bird droppings and nests.

1.2 Quality Assurance
1.2.1 Obtain and review all planning and technical literature from manufacturer. Contact manufacturer for any planning or installation information that may be pertinent to the installation.

1.2.2 Utilize contractors who are experienced with bird netting and netting installations.

1.3 Submittals
1.3.1 Submit manufacturer's samples, catalog cuts, and other descriptive material.

1.4 Product Handling
1.4.1 Protect PollyNet and hardware systems from damage before, during and after installation.

Part 2 - Products

2.1 Acceptable Manufacturer
2.1.1 ABC/Nixalite of America Inc,
1025 16th Avenue, East Moline, IL 61244
Phone: 800.624.1189 or 309.755.8771,
Fax: 800.624.1196 or 309.755.0077,
E-mail:birdcontrol@nixalite.com,
Web:www.nixalite.com

2.2 Model Designation
2.2.1 **Premium PollyNet**
Construction: Black, UV stabilized, extruded polypropylene.
Mesh size: 1/2" (1.3cm) square.
Netting Sizes: 14' x 10' (4.2m x 3.0m), 14' x 50' (4.2m x 15.2m), 14' x 100' (4.2m x 30.5m), 14' x 250' (4.2m x 76.2m). Bulk rolls up to 3,000' (914.4m) available.

2.2.2 **Lightweight PollyNet**
Construction: Black, UV stabilized, extruded polypropylene.
Mesh size: 3/4" x 5/8" (1.9cm x 1.6cm)
Netting Sizes: 17' x 10' (5.1m x 3.0m), 17' x 50' (5.1m x 15.2m), 17' x 100' (5.1m x 30.5m), 17' x 250' (5.1m x 76.2m). Bulk rolls up to 5,000' (1,524.0m) available.

2.3 Mounting Systems
2.3.1 Use the mounting system recommended by manufacturer.

Part 3 - Execution

3.1 Examination
3.1.1 Examine installation area. Install netting to avoid contact with machinery, vehicles, extreme heat, etc. Remove tree limbs, brush, etc. that could damage the netting. Notify architect of detrimental work conditions. Do not proceed until conditions are corrected.

3.2 Surface Preparation
3.2.1 Surface must be clean and dry at time of installation. Bird droppings shall be removed and disposed of in a safe manner, and in compliance with local and federal regulations.

3.3 Installation
3.3.1 Install PollyNet as recommended by the manufacturer. Installation shall be free of wrinkles, gaps or openings in the netting.

3.4 Inspection
3.4.1 Visually inspect PollyNet installation. Look for conditions that may compromise the effectiveness of the installation.
3.4.2 Repair any detrimental conditions immediately.

OM-Operation, Maintenance
If installed per specifications, PollyNet is virtually maintenance free.

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***Email:** birdcontrol@nixalite.com*
***Web:** www.nixalite.com*

Appendix E
Bird Spikes Example

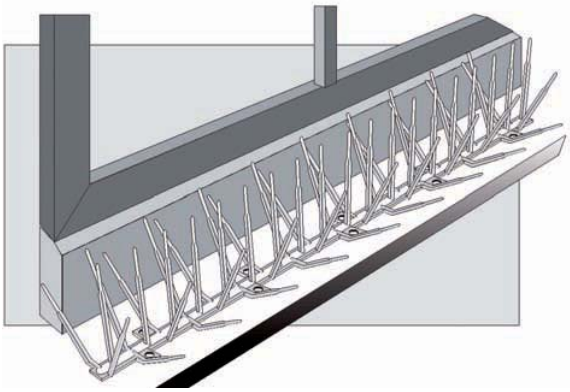
BIRD•B•GONE™ INC. Installation and Applications

BIRD•B•GONE SPIKE Polycarbonate

Description

Patent # US 7243465 US 7596910

Bird-B-Gone Spike Polycarbonate (Formerly Bird Spike 2000) is a physical bird deterrent designed to prevent pest birds from landing. The spike is constructed of durable polycarbonate plastic with U.V. inhibitors. Bird-B-Gone Spikes are easy to install on ledges, I-beams, parapets, sills, pipes, roof peaks, signs and anywhere birds are landing and being a nuisance. It is non-conductive and is the most cost effective, permanent solution for preventing birds from landing.



Widths: 3", 5", & 7"

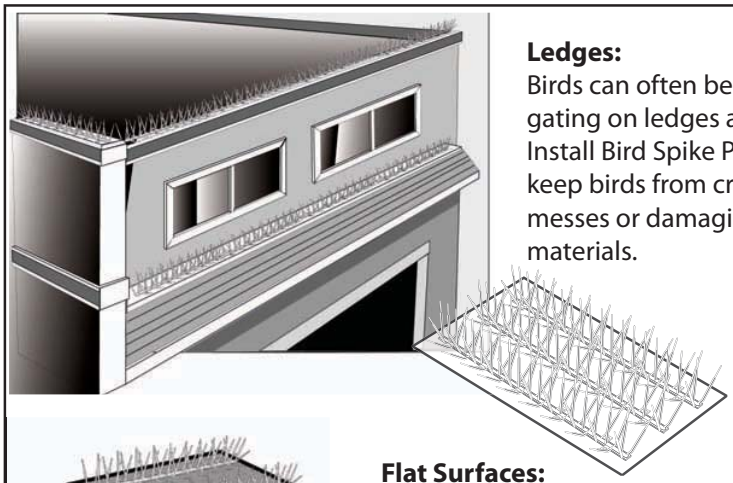
Length: 2' Sections

Colors: Crystal Clear, White, Tan, Brown, Grey, Black, & Brick Red. Custom colors also available.

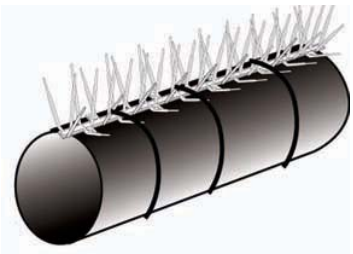
Packaging: Bird-B-Gone Spike Polycarbonate is packaged with 25 two foot sections per box. Each box has 50'

Applications

Bird-B-Gone Spike Polycarbonate is a versatile product that can be easily installed onto a variety of surfaces:

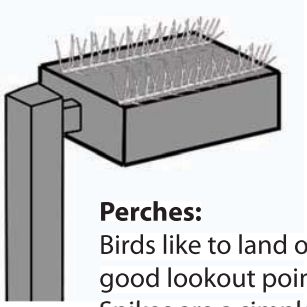


Ledges:
Birds can often be found congregating on ledges and rooftops. Install Bird Spike Polycarbonate to keep birds from creating unsightly messes or damaging building materials.



Conduits:
Bird Spikes can be attached to conduits, gutters and pipes using common hose clamps, nylon ties or wire lashings.

Flat Surfaces:
Bird Spike can be installed in multiple rows for wider areas.



Perches:
Birds like to land on high surfaces as it provides a good lookout point for food and predators. Bird Spikes are a simple way to eliminate these landing spots.

Curved Surfaces:
Bird Spike Polycarbonate is flexible and can be installed by using common hose clamps, nylon ties, or wire lashings.

IMPORTANT! Observe all cautions and warnings listed in instructions prior to installation.

BIRD•B•GONE™ INC. Installation Instructions Polycarbonate Bird Spikes

Caution! READ AND FOLLOW ALL INSTRUCTIONS PRIOR TO ATTEMPTING TO INSTALL BIRD-B-GONE SPIKE - POLYCARBONATE. SPIKES ARE SHARP...BE SURE TO WEAR GLOVES AND SAFETY EYE WEAR. KEEP OUT OF REACH OF CHILDREN AND PETS. DO NOT INSTALL WHERE HUMAN PHYSICAL CONTACT IS POSSIBLE.

1. Thoroughly clean all surfaces before installing Bird Spikes.

Suggestion: Use a 10% bleach or ammonia solution to disinfect the area. It is important that all debris is removed including overhanging branches, leaves, and nesting materials before disinfecting the area.

DUE TO INFECTIOUS DISEASES ASSOCIATED WITH BIRD FECES, BE SURE TO USE EXTREME CARE WHEN REMOVING NESTS AND DROPPINGS.

2. Determine method for attaching Bird Spike.

***For Wood:** Use wood screws to secure Bird Spikes into a wood surface. There are two sets of holes between each "fan" of spikes. Make sure the ends are secured tightly and at least one screw is placed every six inches.

***For Concrete:** Outdoor construction adhesive can be used to secure Bird Spikes down to a variety of surfaces. Bird-B-Gone Spike - Polycarbonate has a glue trough along the base. Bird-B-Gone sells a polyurethane adhesive meant for outdoor use. Each tube will cover approx. 25 feet of spike. Silicone adhesives are not recommended. For extra security, screw or bolt down the spikes along with using an adhesive.

3. When using Adhesives:

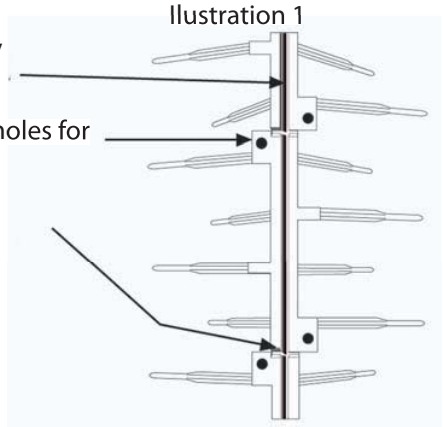
- Run a bead line of adhesive down the underside of the spike. (Illus #1) Also put a dollop of adhesive on each screw hole, allowing the adhesive to mushroom up for more effective adhesion.

-Carefully place strip onto the surface. Ensure that no more than 1 inch of open space is left around the edges or by the back wall.

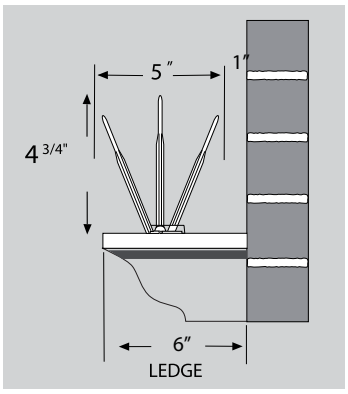
4. Adapting to Size:

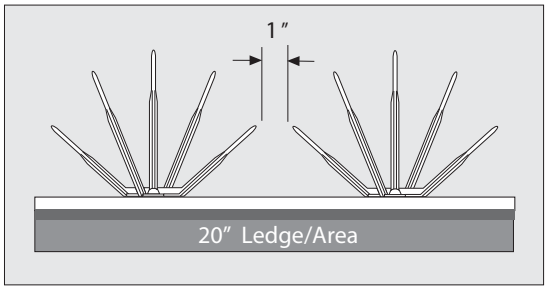
Bird-B-Gone Spike Polycarbonate comes in 2 foot sections, but can easily be cut down into smaller lengths if needed using tin snips, wire cutters, a hacksaw etc.

Illustration 1



All spikes are 4-3/4" tall





If you have any questions regarding Bird Spike Installation call us at 1-800-392-6915 / 949-472-3122

Bird-B-Gone, Inc. 1-800-392-6915
www.birdbgone.com / email: nobirds@birdbgone.com Fax: 949-472-3116

Patent # US 7243465 US 7596910

Appendix F
Repeller Ribbon Example

Tangle Guard Repeller Ribbon

A holographic foil ribbon that provides economical and humane spot control for nuisance birds and animals.

Repeller Ribbon is a safe, non-toxic and humane method for discouraging nuisance birds from roosting in gardens, home orchards, berry patches, trees, and structures.

Made in 25 and 100 foot long rolls, the Repeller Ribbon is a holographic Mylar foil that provides temporary spot control for nuisance birds by producing visual and audible discomfort zones. A light breeze can produce bright reflections, sudden movement and a metallic rattle which encourages pest birds and nuisance animals to away.

For simple spot control, installation is easy. With scissors, cut several pieces of Repeller Ribbon 2 to 3 foot long. Position these pieces of ribbon where nuisance birds and animals will see its flash and hear its metallic rattle. Fasten each piece at one end using velcro, string, twine, staples, etc. Make sure the Repeller Ribbon can move freely.

Use with Nixalite's Deer Blocker Deer Fence as Avoidance Flagging ! This is required for the first few months of the installation to ensure an effective deer barrier. Cut the ribbon into 16" to 24" lengths. Position each ribbon 4 feet up from the ground, every 10 feet of fence.

Use with simple garden poles to create a quick barrier fence to keep geese and other waterfowl from walking out of the water and into your yard. Run two rows of ribbon tied to simple posts or poles along the water's edge.

For more uses and applications, contact Nixalite.

Spot Control:

- Gardens
- Small Orchards
- Hobby Vineyards
- Trees, Shrubs
- Parking Areas
- Garage, Storage
- Boat Slips
- Gazebos, Sheds
- Small Ponds
- Barns, Stables
- Many More!

Use with other Nixalite products:

- Bird Scare Predator Eyes
- Scarecrow Motion Activated Sprinkler
- Deer Blocker Deer Fencing Systems
- Simple Barrier Fencing for Geese

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Email: birdcontrol@nixalite.com
Web: www.nixalite.com

Where the World Shops for Humane Bird and Animal Control.

Appendix G
Nest Platform

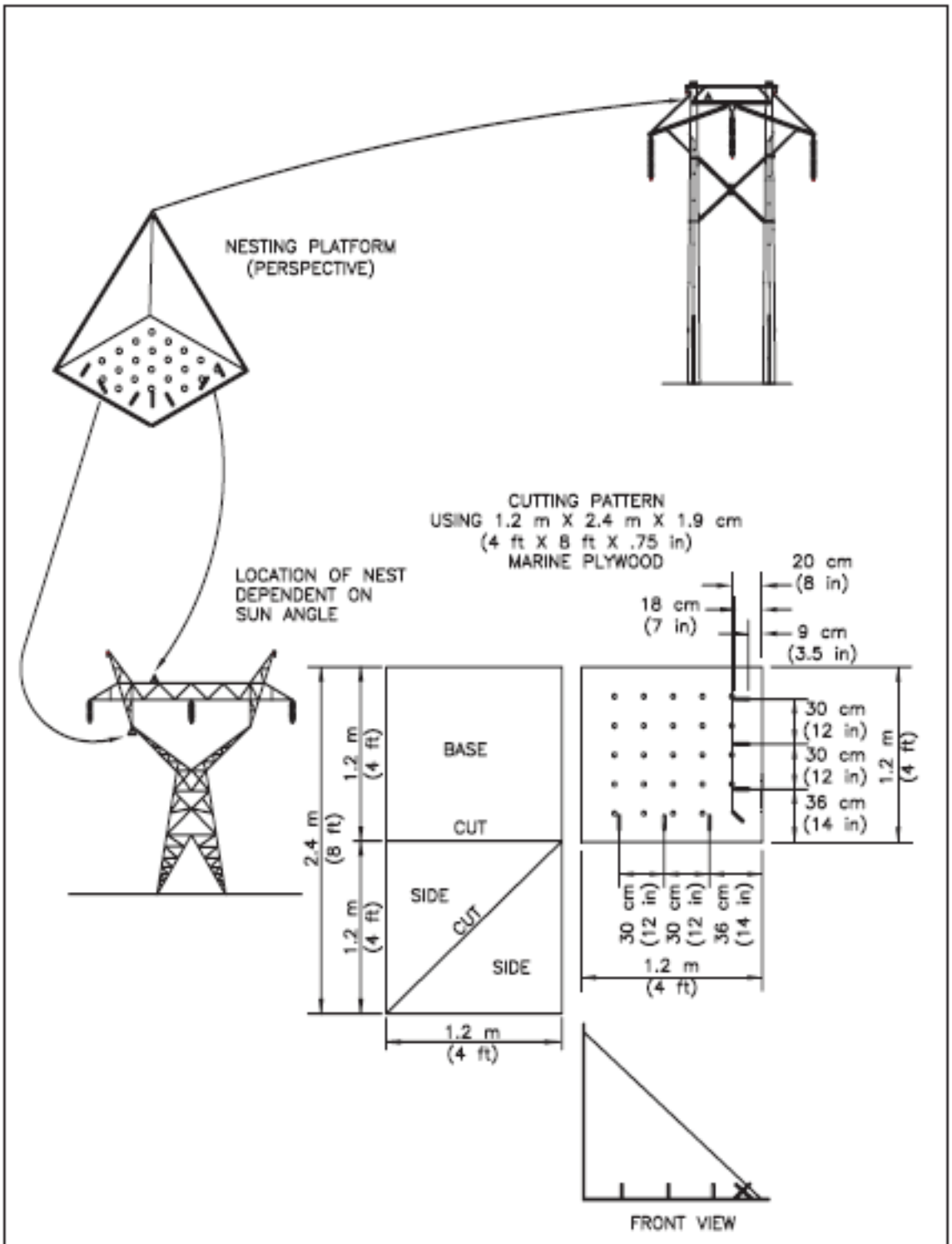

FIGURE 6.4: The Morley Nelson raptor nest platform.

Appendix H
Burrowing Owl Management Plan