Bird and Bat Conservation Strategy for the Coram California Development, LP Wind Energy Project, Kern County, California

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1 INTRODUCTION

1.1 Background and Purpose

Con Edison Development (CED) develops, owns and operates renewable and energy infrastructure projects. The company is an unregulated subsidiary of Consolidated Edison, Inc. [NYSE: ED], the nation's oldest and one of the largest investor-owned energy companies. Coram California Development, LP (CCDLP) comprises a 102-wegawatt (MW) wind energy facility located in the Tehachapi-Mojave Wind Resource Area (TWRA) under CED ownership and management. Wind energy facilities utilize a renewable-energy resource that has potential impacts to birds and bats resulting from their construction and operation. Interactions with wind turbines and the associated infrastructure such as energy transmission, distribution, and substations may result in fatalities or indirect effects that may include displacement or habitat loss. CCDLP has developed this site-specific Bird and Bat Conservation Strategy (BBCS or Plan) for the Cameron Ridge/Section 15 wind energy project or the "Project". This Plan outlines various processes that have been and/or will be employed to: 1) comply with all state and federal avian and bat conservation and protection laws and regulations applicable to the Project; 2) ensure that any effects to avian and bat resources are identified, quantified, and analyzed; and 3) avoid, minimize, or mitigate potential effects consistent with the US Fish and Wildlife Service (USFWS) Wind Energy Guidelines (WEG; USFWS 2012) and the USFWS Eagle Conservation Plan Guidance (ECPG; USFWS 2013).

Most birds found in and around the Project are protected by federal and state laws (and their implementing regulations), including the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), the federal Endangered Species Act (ESA), and the California Endangered Species Act (CESA). This Plan has been voluntarily prepared as a good faith effort to proactively address potential effects to birds and bats that may result from the construction and operation of the Project.

1.2 Objectives

This BBCS was developed to meet the following objectives:

1) Document and describe the scope of the Project and the biological survey work that was completed pre-construction, and provide an assessment of risks to avian and bat resources posed by the Project. This objective includes providing a single point of reference for information related to avian and bat studies performed in relation to the Project.
2) Provide a description of the avoidance and minimization measures taken during siting and construction of the Project, and provide a description past and future steps taken to avoid, minimize, or mitigate potential effects to avian and bat species resulting from the operation and decommissioning of the Project consistent with the WEG and ECPG.
3) Describe post-construction monitoring efforts that have been and will continue to be implemented at the Project to identify impacts to birds and bats, as well as the methods for reporting the results of monitoring.

4) Describe the adaptive management framework over the life of the Project and measures for implementation during operation of the Project.
5) Provide an educational and practical reference for employees and contractors to facilitate the application of measures that avoid or minimize potential negative effects to avian and bat species at the Project.

2 SITE AND PROJECT DESCRIPTION

2.1 Regional Setting

The Project consists of 34 Vestas 3.0-MW wind turbine generators (WTGs), totaling 102 MW of nameplate generating capacity. The Project is split between two sites separated by about 3.5 miles (5.6 kilometers [km]): the Cameron Ridge site located in the west which includes 26 WTGs, and the Section 15 site to the east which includes eight WTGs (Figure 1). The Project is in the TWRA of southern California, a region of high-density wind energy development in Kern County, at the southern end of the San Joaquin Valley. The TWRA is currently the largest wind resource area in California containing approximately 4,639 MW of total development wind energy. The Project lies in the central portion of the TWRA, along the eastern extent of the Tehachapi Mountains, approximately seven miles (11.3 km) southeast of the City of Tehachapi and four miles (6.4 km) west of the unincorporated community of Mojave.

The Project falls within the high desert plains on the western edge of the Mojave Desert, and contains a diverse, hilly topography, with elevations ranging from about 3,200 to 4,300 feet (ft; 975 to 1,310 meters [m]) above mean sea level (Figure 1). Topographic relief is more varied within the western portion of the Project along Cameron Ridge, while the Section 15 turbines to the east are situated on gently sloping ground with little topographic relief. In the western Cameron Ridge site, rolling hills are covered primarily by rabbitbrush (*Chrysothamnus nauseosus*), buckwheat (*Erigonum* spp.), and annual grasslands punctuated by California juniper (*Juniperus californica*) shrubs, while the Section 15 site to the east is characterized by more lowland Joshua tree/creosote (*Yucca brevifolia/Larrea tridentate*) scrub. No permanent water exists within the Project sites; however, many washes with intermittent water flow are present throughout the area. Oak Creek Canyon lies near the southwestern corner of the Cameron Ridge site, an underground section of the Los Angeles Aqueduct lies along the eastern boundary of Section 15, and Oak Creek road runs along the southern border of the Project sites (Figure 1). Additionally, several transmission lines, and gravel roads and fences associated with wind energy facilities, as well as a network of dirt roads/trails from past off-highway vehicle use are present throughout the region. Southern California Edison's (SCE) Windhub Substation is located approximately 1.6 miles (2.6 km) from the western end of Section 15 along Oak Creek Road (Figure 1).

The Project vicinity primarily includes undeveloped, wind-energy, and low-density residential areas located on the southeastern flank of the Tehachapi Mountains. Other land uses in the region include mining and cement manufacturing, sheep and cattle grazing, and recreational use of the Pacific Crest Trail. The Project is surrounded by operating wind energy facilities.

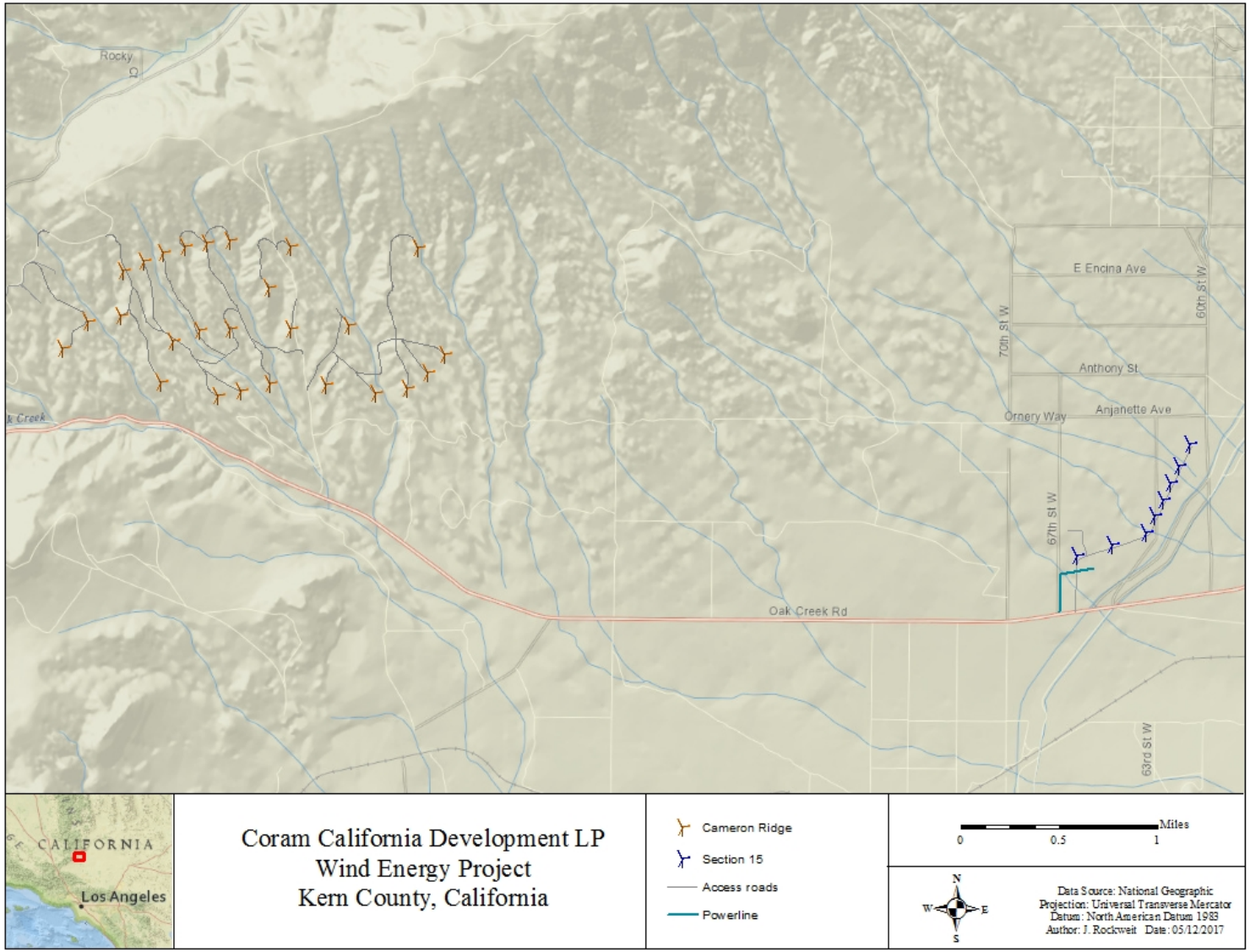

Figure 1. Facility layout for the CCDLP Wind Energy Project.

2.2 Project History and Characteristics

The Project is on private land and is subject to the jurisdiction of Kern County. Kern County has issued a Mitigated Negative Declaration for each parcel containing mitigation requirements to be complied with to enable Kern County to zone the parcels for "Exclusive Agriculture – Wind Energy" without requiring Environmental Impact Reports (EIRs) under the California Environmental Quality Act (CEQA). There are eleven Mitigated Negative Declarations for the parcels comprising the Project sites issued between 1983 and 2010. Two of the Mitigated Negative Declarations from 2010 required the project's biologist to prepare a Mitigation Measure Monitoring Program to satisfy CEQA Guidelines, prior to the County granting zoning approval. Biota reports from Mitigated Negative Declarations were prepared when required, with the most recent being 2010 (MH Wolfe and Associates Environmental Consulting [MHWA] 2011)

Construction of the Project was performed by CCDLP between 2010 and 2012, and commercial operations began in May of 2012. Brookfield Renewable Energy (Brookfield) purchased the project in early 2012. In July of 2015, the Project was purchased from Brookfield by Renewable Energy Trust (RET), and in December of 2017, CED purchased the Project from RET. The Project comprises 34 Vestas 3.0-MW WTGs that have a hub height of approximately 295 feet (ft; 90 meters [m]) and a rotor diameter of approximately 295 ft. The Project is divided between two sites separated by about 3.5 miles: the Cameron Ridge site comprised of 26 WTGs and the Section 15 site comprised of eight WTGs (Figure 1). The total generation capacity is 102 megawatts (MW) of electricity. Other Project elements include:

- Two permanent un-guyed meteorological (met) towers.
- On-site and off-site Project access roads, control cables, power collection cables, and transmission lines necessary to serve the Project and connect to the California Independent System Operator (CAISO) grid; and
- Two substations to step up the voltage generated by the WTGs to meet the electrical transmission system voltage.

The Project interconnects to the grid at SCE Windhub Substation. This substation serves as the northern terminus of the Tehachapi Renewable Transmission Project (TRTP) and is located approximately 1.6 miles west of Section 15, along Oak Creek Road (Figure 1).

3 REGULATORY REQUIREMENTS RELEVANT TO THIS BBCS

3.1 Federal Endangered Species Act

Species at risk of extinction, including many birds and bats, are protected under the federal ESA of 1973, as amended. The purpose of the ESA is to protect threatened and endangered species and to provide a means to conserve their ecosystems. "Take" under the ESA is defined as "…to harass, harm, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." 16 USC § 1532(19). "Harm" is an "act which actually kills or injures wildlife," which "may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or

sheltering." 50 CFR § 17.3. The ESA authorizes the USFWS to issue permits for "incidental take" of wildlife species, which is take resulting from an otherwise lawful activity 16 USC §1539(a)(1)(B) and (2).

A review of USFWS endangered, threatened, and candidate species was conducted to identify avian and bat species listed under the ESA that have the potential to occur in Kern County (CNDDB 2017, USFWS 2017). The only federally-listed avian or bat species with at least some potential for current or future occurrence in the Project is the California condor (*Gymnogyps californianus*). While suitable nesting, roosting, and foraging habitat is generally absent from the Project, condors are a wide-ranging species and the potential for future occurrence in the Project cannot be entirely ruled out.

3.2 Migratory Bird Treaty Act

The MBTA is the cornerstone of migratory bird conservation and protection in the United States. The MBTA implements four treaties that provide for international protection of migratory birds. The MBTA states, "unless and except as permitted by regulations … it shall be unlawful at any time, by any means, or in any manner to pursue, hunt, take, capture or kill, possess, offer for sale, sell … purchase … ship, export, import … transport or cause to be transported … any migratory bird, any part, nest, or eggs of any such bird." The word "take" is defined by regulation as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." 50 CFR 10.12. The USFWS maintains a list of all species protected by the MBTA at 50 CFR 10.13. This list includes over one thousand species of migratory birds, including eagles and other raptors, waterfowl, shorebirds, seabirds, wading birds, and passerines.

The federal government has traditionally interpreted the MBTA as imposing strict liability on companies that engage in activities resulting in the "take" of migratory birds, regardless of whether there was any intent to take the birds. More recently, however, whether non-purposeful take is included in the MBTA take prohibition has become a subject of debate. A circuit split exists among the Federal Appellate courts, and the Ninth Circuit (where the Project occurs) has held that the MBTA does not prohibit non-purposeful take in certain circumstances (Seattle Audubon Society v. Evans, 952 F .2d 297 [9th Cir. 1991]).

Although the MBTA does not include provisions for permits to authorize non-purposeful take of migratory birds, the USFWS's WEG describe the USFWS's approach to "take" enforcement. Specifically, the USFWS will take a developer's adherence to the WEG and communication with the USFWS into account when deciding whether to refer for prosecution any alleged "take" of migratory birds. Although adherence to the WEG does not absolve developers from liability under the MBTA, the USFWS views such an effort as an appropriate means of avoiding "take" of protected species.

3.3 Bald and Golden Eagle Protection Act

Under authority of the BGEPA, 16 USC 668-668d, bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are afforded additional legal protection. The BGEPA prohibits the take, sale, purchase, barter, offer of sale, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. The BGEPA

also defines take to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." 16 USC 668c. The BGEPA includes criminal and civil penalties for violating the statute. 16 USC 668. The USFWS further defined the term "disturb" as "to agitate or bother…to a degree that causes, or is likely to cause…(1) injury…(2) a decrease in …productivity…; or (3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior." (50 CFR §22.3).

In September of 2009, the USFWS promulgated a final rule on two new permit regulations that specifically authorize under the BGEPA the non-purposeful (i.e., incidental) take of eagles and eagle nests in certain situations (see 50 CFR 22.26 and 22.27). The USFWS issued revisions to the final rule in December of 2016 (USFWS 2016a; 81 Federal Register [FR] 91494). The permits authorize limited take of bald and golden eagles; authorizing individuals, companies, government agencies and other organizations to disturb or otherwise take eagles.

To facilitate issuance of Eagle Take Permits (ETPs) for wind energy facilities, on May 2, 2013, the USFWS announced the availability of the *Eagle Conservation Plan Guidance: Module 1 – Land-Based Wind Energy, Version 2* (ECPG; USFWS 2013; 78 FR 25758). If eagles are identified as a potential risk at a project site, developers are encouraged to follow the ECPG. The ECPG provides a means of compliance with the BGEPA by providing recommendations and in-depth guidance for:

- Conducting early pre-construction assessments to identify important eagle use areas;
- Avoiding, minimizing, and/or compensating for potential adverse effects to eagles; and
- Monitoring for impacts to eagles during construction and operation.

The ECPG interprets and clarifies the permit requirements in the regulations at 50 CFR § 22.26 and § 22.27, and does not impose any binding requirements beyond those specified in the regulations.

3.4 California Endangered Species Act

The CESA, administered by the California Department of Fish and Wildlife (CDFW), was established to protect native California wildlife and plants which are in danger of becoming extinct throughout all, or a portion, of their range. Section 2080 of the Fish and Game Code prohibits "take" of any species determined by the Fish and Game Commission to be threatened or endangered. In Section 86 of the Fish and Game Code, "take" is defined as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Unlike its federal counterpart, CESA "take" prohibition applies also to any species which is a candidate for state listing pursuant to Fish and Game Code Section 2085. Section 2081(b) and (c) of the CESA allows the CDFW to issue an incidental take permit for a state endangered, threatened, or candidate species provided the following criteria are met: 1) the take is incidental to otherwise lawful activities; 2) impacts of the authorized take are minimized and fully mitigated; and 3) the issuance of the permit will not jeopardize the continued existence of a state-listed species. A review of all state endangered, threatened, or candidate species occurring in Kern County, California (CNDDB 2017) revealed six bird species with the potential to occur in the County. Based on the range and habitat requirements of these species, only Swainson's hawk (*Buteo*

swainsoni) and California condor have the potential to occur in the Project or the surrounding area.

In the 1960's, prior to state and federal endangered species laws and regulations, the state established the classification of Fully Protected Species to provide protection to animals that were rare or faced possible extinction. Fully Protected Species may not be taken or possessed at any time and no licenses or permits may be issued for their take except in the case of necessary scientific research. While, most Fully Protected Species have since been listed as threatened or endangered under CESA, a few species, such as the golden eagle and the peregrine falcon (*Falco peregrinus*) have not. The CDFW additionally maintains a list of state Species of Special Concern (SSC; see CDFW 2017). While SSC is an administrative designation with no formal legal status, species on this list are considered during the environmental review process. The SSC designation serves several purposes including: to focus attention on animals with a need for conservation on a state or regional level, stimulate research on poorly known species, and achieve conservation and recovery of a species before they meet the criteria for listing under CESA. Based on a review of the California Natural Diversity Database (CNDDB 2017), as well as the results of regional baseline studies, 16 avian and bat SSC and two Fully Protected Species have the potential to occur in the Project (see Section 4.1).

4 AVIAN AND BAT RESOURCES: TIER 1-3

The WEG outlines a tiered approach that assesses the habitat suitability and risks to wildlife at a potential wind resource area. The "tiered" approach ensures that sufficient data are collected to enable project proponents to make informed decisions about continued development of a proposed project (USFWS 2012). At each tier, potential issues associated with the development or operations of the project are identified and questions are formulated to guide the decision process. This process starts with a broad scope and provides more site-specific detail at each tier as more data are gathered and the potential for avian and bat issues are better understood. This approach ensures that sufficient data are collected to enable CCDLP to make informed decisions at the Project regarding compliance with its corporate environmental policy.

This Project was initiated and permitted prior to the final WEG; however, the efforts completed in siting, studying, analyzing, reviewing, and coordinating with state and federal officials substantially align with the WEG tiered approach. This section describes Tiers 1-3 efforts completed during the pre-construction phase of the Project.

4.1 Tiers 1 and 2 – Preliminary Site Evaluation and Characterization

As described in the WEG, Tiers 1 and 2 provide a framework for evaluating potential issues that may need to be addressed before further actions can be taken relative to the development or operation of a proposed wind energy facility. The objective of the Tier 1 study is to assist the developer in further identifying a potential wind energy site. As such, the Tier 1 study provides a preliminary evaluation or screening of public data from federal, state, and tribal entities and offer early guidance about the sensitivity of the site, in regard to flora and fauna.

The objective of the Tier 2 study is to determine the effects of the proposed facility on any Federal and State sensitive species. The Tier 2 study typically includes a more substantive

review of existing information, including publicly available data on land use/land cover, topography, wetland data, wildlife, habitat, and sensitive plant distribution, a reconnaissance level site visit, and making first contact with agencies involved. Because the WEG were not finalized before this Project was initiated, the preliminary site evaluation for the Project did not specifically identify or address the Tier 1 and 2 questions. However, the Project was sited in an area of concentrated wind energy development and a large volume of biological resource data is available for the region. While a site-specific characterization report was not completed for the Project, the results of studies and risk assessments prepared for nearby wind energy projects, including adjacent phases of the Alta Wind Energy Center were considered during the Project planning stage. Additionally, during the initial study and zoning of each of the 11 Mitigated Negative Declarations comprising the Project, which occurred from 1983 to 2010, biological resources were evaluated within each parcel. Kern County performed an Initial Study of possible environmental impacts for each zoning change which consisted of a general assessment of vegetation, habitat and wildlife resources within each parcel. This process is similar to what might be conducted during a Tier 1/Tier 2 site characterization under the WEG.

A list of sensitive bird and bat species with potential to occur within the Project was compiled based on publically available data from other wind energy projects in the region and a CNDDB query (CNDDB 2017; Table 1).

Table 1. Sensitive bird and bat species with potential for occurrence[1] in the CCDLP Project.

Species	Scientific Name	Status[2] Fed/State	Observed During Regional[3] Baseline Surveys
American white pelican	*Pelecanus erythrorhynchos*	-/SSC	No
Brewer's sparrow	*Spizella breweri*	BCC/-	Yes
burrowing owl	*Athene cunicularia*	BCC/SSC	Yes
California condor	*Gymnogyps californianus*	E/E	No
ferruginous hawk	*Buteo regalis*	BCC/-	Yes
golden eagle	*Aquila chrysaetos*	BCC/FP	Yes
Lawrence's goldfinch	*Spinus lawrencei*	BCC/-	Yes
Le Conte's thrasher	*Toxostoma lecontei*	BCC/SSC	Yes
loggerhead shrike	*Lanius ludovicianus*	BCC/SSC	Yes
long-billed curlew	*Numenius americanus*	BCC/SSC	Yes
northern harrier	*Circus cyaneus*	-/SSC	Yes
American peregrine falcon	*Falco peregrinus anatum*	BCC/FP	Yes
prairie falcon	*Falco mexicanus*	BCC/-	Yes
purple martin	*Progne subis*	-/SSC	Yes
short-eared owl	*Asio flammeus*	-/SSC	Yes
Swainson's hawk	*Buteo swainsoni*	BCC/T	Yes
yellow warbler	*Dendroica petechia brewsteri*	BCC/SSC	Yes
Vaux's swift	*Chaetura vauxi*	-/SSC	Yes
pallid bat	*Antrozous pallidus*	-/SSC	n/a[4]
Townsend's big-eared bat	*Corynorhinus townsendii*	-/SSC	n/a[4]
spotted bat	*Euderma maculatum*	-/SSC	n/a[4]
western red bat	*Lasiurus blossevillii*	-/SSC	n/a[4]
western mastiff bat	*Eumops perotis californicus*	-/SSC	n/a[4]

[1] Compiled from the California Natural Diversity Database (CNDDB 2017) as well as regional baseline studies.
[2] E=Endangered (CDFW 2017); T=Threatened (CDFW 2017); USFWS BCC=Bird of Conservation Concern (USFWS 2008); FP=Fully Protected (CDFW 2017); SSC=Species Special Concern (CDFW 2017)
[3] Regional surveys include those conducted for the nearby AOCM (Erickson et al. 2009), Alta Infill (Chatfield et al. 2010a), Alta Infill II (Western EcoSystems Technology 2011), and Rising Tree projects (Johnson et al. 2007, Chatfield et al. 2011b).
[4] Aside from hoary bat (*Lasiurus cinereus*), bats were not identified to species during the bat acoustical surveys (Appendix C)

4.2 Tier 3 – Baseline Avian and Bat Studies

Because the Project was constructed in an area of existing wind energy development, adjacent to operating wind energy facilities, and because a mitigated negative declaration was issued for the Project precluding the need for an EIR, no site-specific Tier 3 baseline avian and bat studies were conducted prior to Project construction. However, a large volume of biological resource data is available for the region, including sites adjacent to the Project. This regional information was used, when possible, to help inform the bird and bat risk assessment presented in Section 5 below.

5 ASSESSMENT OF RISKS TO BIRDS AND BATS

Impacts to avian species from wind energy facilities may include collisions during construction and operation, as well as other impacts such as habitat loss/fragmentation and

disturbance/displacement of individuals from converted habitats and areas near project infrastructure. While no site-specific Tier 3 avian and bat studies were conducted prior to construction, data from bird and bat surveys conducted at adjacent projects, as well as the large volume of publicly available information from other wind energy project in California and the TWRA were used to provide an assessment of risk to birds and bats. Bird risk associated with other sources of mortality (e.g., powerline electrocutions/collisions, vehicle collisions) was also assessed by reviewing literature of other sources of bird mortality.

5.1 Mortality Risk Assessment

5.1.1 Birds

Project construction can result in the direct mortality of birds and other wildlife. Incidental impacts from construction activities could include the destruction of nests, eggs, or young, as well as collisions with vehicles and construction equipment. Collision with various man-made structures can be a significant source of bird mortality (Table 2). On a nationwide scale, wind turbines are estimated to be responsible for 0.01 to 0.02 percent of all avian mortalities due to human structures (Table 2; Erickson et al. 2001, 2002, 2005).

Table 2. Estimated annual avian mortality from anthropogenic causes in the United States.

Mortality Source	Estimated Annual Mortality	Reference
Depredation by domestic cats	1.4 – 3.7 billion	Loss et al. 2013
Collisions with buildings	98 – 980 million	Klem 1990
Collisions with power lines	Tens of thousands to 174 million	USFWS 2002; APLIC 2006
Automobiles	60 – 80 million	Erickson et al. 2005
Pesticides	67 million	Pimentel et al. 1991
Communication towers	6.8 million	Longcore et al. 2012
Oil pits	500,000 – 1 million	USFWS 2009
Wind turbines	368,000 – 573,000	Erickson et al. 2014; Smallwood 2013
Aircraft	4,722	Dolbeer et al. 2009

The most recent estimates of annual bird mortality from wind energy facilities in the US are 368,000 to 573,000 (Erickson et al. 2014, Smallwood 2013). Studies have shown avian mortality rates to be consistent across wind energy facilities, both nationally and by region. The number of avian mortalities at wind energy facilities is generally low when compared to the total number of birds observed at these sites (Erickson et al. 2002). Although avian collision mortality can occur during both the breeding and migration seasons, patterns in avian mortality at tall towers, buildings, wind turbines, and other man-made structures suggest that the majority of mortalities occur during the spring and fall migration periods (National Research Council [NRC] 2007, AWWI 2016). Limited data from existing wind facilities suggest that migratory species represent roughly half of documented mortalities, while resident species represent the other half (NRC 2007).

Avian mortality at the Project was anticipated to be within the range, or on the low end of mortality reported for wind energy facilities across the country and consistent with regional avian mortality rates. In California and the southwest regions of the US, bird mortality rates have

been highly variable, ranging from 0.17 to 17.44 bird mortalities/MW/year (Figure 2). Within the TWRA, rates have been equally variable (see Table 3); however, among wind energy facilities in the immediate vicinity of the Project with similar topography, habitats, and land use (i.e., Alta I-V, Alta VIII, Pinyon Pines I & II, Mustang Hills, Alite, Windstar, and Lower West) the all bird mortality rates drop somewhat, ranging from 0.38 to 12.05 birds/MW/year (Table 3). Given the proximity of the Project to these areas which share similar habitat characteristics and bird species assemblages, mortality rates at the Project are expected to be within this range. This assessment is supported by the results of post-construction monitoring conducted at the Project to date, the results of which are presented in Section 7.

Diurnal raptors occur in most areas with the potential for wind energy development and have shown susceptibility to the potentially adverse impact of wind energy development (NRC 2007). Within the TWRA, raptor fatality rates have generally been low with a mean of 0.10 raptors/MW/year and range of zero to 0.27 raptors/MW/year (Table 3). At facilities in the immediate vicinity of the Project (i.e., Alta I-V, Alta VIII, Mustang Hills, Pinyon Pines, Alite, Lower West, and Windstar), post-construction fatality monitoring efforts have revealed even lower raptor fatality rates, averaging 0.07 raptors/MW/year, with several facilities having documented annual raptor fatality rates of zero (Table 3). Outside of the TWRA, in northern and west-central California, raptor fatality rates have been higher and more variable ranging from 0.11 at Shiloh II (Curry and Kerlinger 2010) to 1.06 at Montezuma I (ICF International 2012; Figure 3).

The generally low raptor mortality rates predicted for the Project are supported by the results of post-construction monitoring conducted at the Project to date which are presented in Section 7.

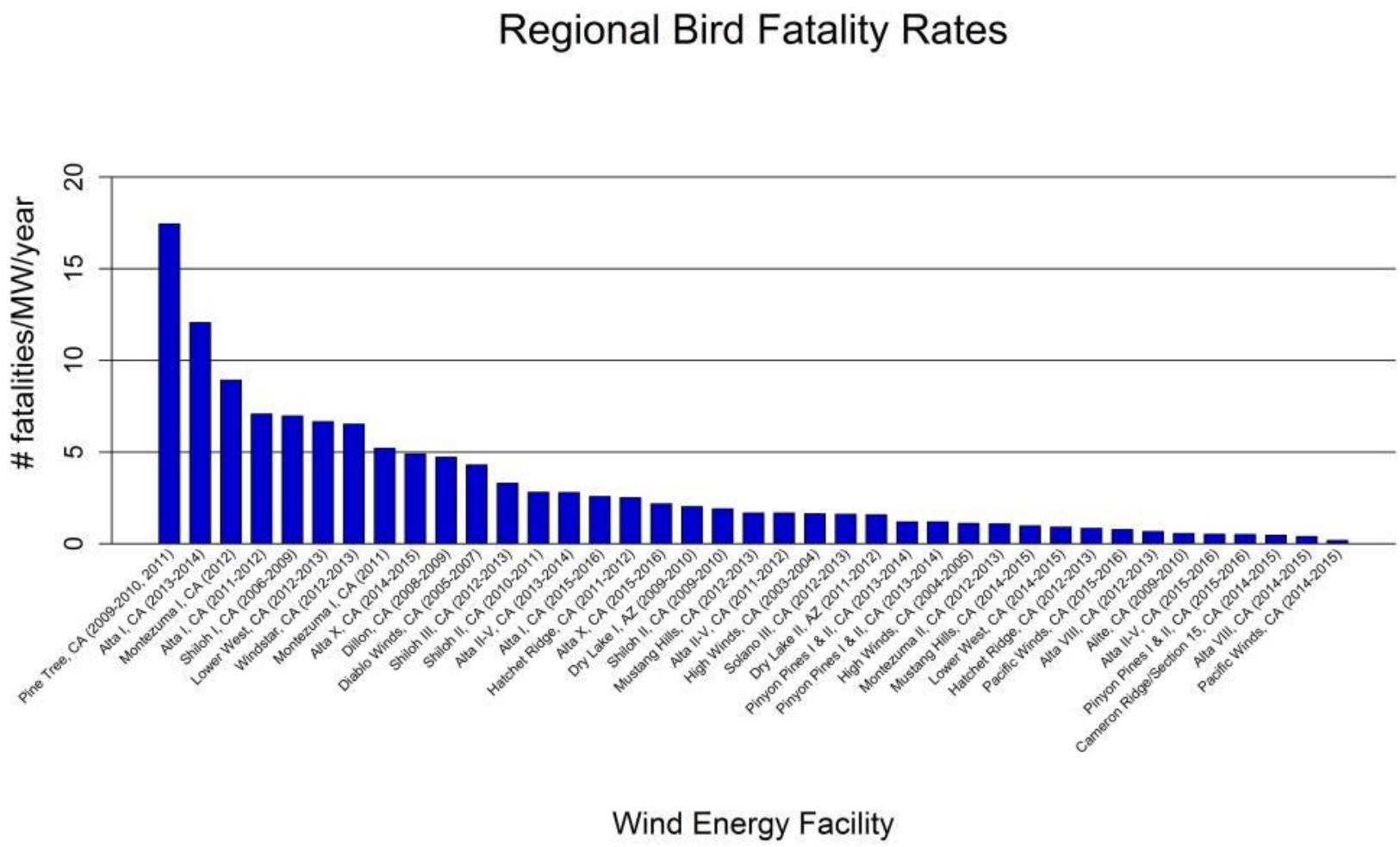

Figure 2. Fatality rates for all birds (number of birds per megawatt per year) from publicly available studies at wind energy facilities in the California and Southwest regions of the US.

Figure 2 (*continued*). Fatality rates for all birds (number of birds per megawatt per year) from publicly available studies at wind energy facilities in the California and Southwest regions of the US.

Data from the following sources:

Wind Energy Facility	Estimate Reference	Wind Energy Facility	Estimate Reference	Wind Energy Facility	Estimate Reference
Pine Tree, CA (2009-2010, 2011)	BioResource Consultants 2012	Alta II-V, CA (2013-2014)	Chatfield et al. 2014	Montezuma II, CA (2012-2013)	Harvey & Associates 2013
Alta I, CA (2013-2014)	Chatfield et al. 2014	Alta I, CA (2015-2016)	Thompson et al. 2016b	Mustang Hills, CA (2014-2015)	WEST 2016c
Montezuma I, CA (2012)	ICF International 2013	Hatchet Ridge, CA (2011-2012)	Tetra Tech 2013	Lower West, CA (2014-2015)	Levenstein and DiDonato 2015
Alta I, CA (2011-2012)	Chatfield et al. 2012	Alta X, CA (2015-2016)	Thompson et al. 2016a	Hatchet Ridge, CA (2012-2013)	Tetra Tech 2013
Shiloh I, CA (2006-2009)	Kerlinger et al. 2009	Dry Lake I, AZ (2009-2010)	Thompson et al. 2011	Pacific Winds, CA (2015-2016)	WEST 2017
Lower West, CA (2012-2013)	Levenstein and Bay 2013a	Shiloh II, CA (2009-2010)	Kerlingeret al. 2010	Alta VIII, CA (2012-2013)	Chatfield and Bay 2014
Windstar, CA (2012-2013)	Levenstein and Bay 2013b	Mustang Hills, CA (2012-2013)	Chatfield and Bay 2014	Alite, CA (2009-2010)	Chatfield et al. 2010b
Montezuma I, CA (2011)	ICF International 2012	Alta II-V, CA (2011-2012)	Chatfield et al. 2012	Alta II-V, CA (2015-2016)	Thompson et al. 2016b
Alta X, CA (2014-2015)	Chatfield et al. 2015	High Winds, CA (2003-2004)	Kerlinger et al. 2006	Pinyon Pines I & II, CA (2015-2016)	Rintz and Starcevich 2016
Dillon, CA (2008-2009)	Chatfield et al. 2009	Solano III, CA (2012-2013)	AECOM 2013	Cameron Ridge/Section 15, CA (2014-2015)	WEST 2016b
Diablo Winds, CA (2005-2007)	WEST 2006, 2008	Dry Lake II, AZ (2011-2012)	Thompson and Bay 2012	Alta VIII, CA (2014-2015)	WEST 2016c
Shiloh III, CA (2012-2013)	Kerlinger et al. 2013b	Pinyon Pines I & II, CA (2013-2014)	Chatfield and Russo 2014	Pacific Winds, CA (2014-2015)	WEST 2016a
Shiloh II, CA (2010-2011)	Kerlinger et al. 2013a	High Winds, CA (2004-2005)	Kerlinger et al. 2006		

Table 3. Wind energy facilities in the Tehachapi Wind Resource Area with fatality data (fatalities/MW/year) for all birds, diurnal raptors and bats.

Wind Energy Facility	All Bird Fatality Estimate	Diurnal Raptor Fatality Estimate	Bat Fatality Estimate	# of Turbines	Total MW
Pine Tree (2009-2010, 2011)	17.44	0.13	0	90	135
Alta I (2013-2014)	12.05	0.10	0.36	100	150
Alta I (2011-2012)	7.07	0.27	1.28	100	150
Windstar (2012-2013)	6.65	0.18	0	53	106
Alta X (2014-2015)	4.88	0.04	0.42	48	137
Lower West (2012-2013)	3.50	0	2.17	7	14
Alta II-V (2013-2014)	2.79	0.08	0	190	570
Alta I (2015-2016)	2.57	0.15	0.70	100	150
Alta X (2015-2016)	2.17	0	0.80	48	137
Alta II-V (2011-2012)	1.66	0.05	0.08	190	570
Mustang Hills (2012-2013)	1.66	0.08	0.10	50	150
Pinyon Pines I & II (2013-2014)	1.18	0	0.04	100	300
Mustang Hills (2014-2015)	0.97	0.03	0	50	150
Lower West (2014-2015)	0.90	0	1.13	7	14
Pacific Winds (2015-2016)	0.77	0.07	0	70	143.5
Alta VIII (2012-2013)	0.66	0.02	0.04	50	150
Alite (2009-2010)	0.55	0.12	0.24	8	24
Alta II-V (2015-2016)	0.51	0	0	190	570
Pinyon Pines I & II (2015-2016)	0.50	0.02	0.18	100	300
Alta VIII (2014-2015)	0.38	0.04	0.17	50	150
Pacific Winds (2014-2015)	0.17	0	0.21	70	143.5

Data from the following sources:

Facility	Fatality Estimates	Facility	Fatality Estimates
Pine Tree (09-10, 11)	BioResource Consultants 2012	Pinyon Pines I & II (2013-2014)	Chatfield et al. 2014
Alta I (2013-2014)	Chatfield et al. 2014	Mustang Hills (2014-2015)	WEST 2016c
Alta I (2011-2012)	Chatfield et al. 2012	Lower West (2014-2015)	Levenstein and DiDonato 2015
Windstar (2012-2013)	Levenstein and Bay 2013b	Pacific Winds (2015-2016)	WEST 2017
Alta X (2014-2015)	Chatfield et al. 2015	Alta VIII (2012-2013)	Chatfield et al. 2014
Lower West (2012-2013)	Levenstein and Bay 2013a	Alite (2009-2010)	Chatfield et al. 2010b
Alta II-V (2013-2014)	Chatfield et al. 2014a	Alta II-V (2015-2016)	Thompson et al. 2016b
Alta I (2015-2016)	Thompson et al. 2016b	Pinyon Pines I & II (2015-2016)	Rintz and Starcevich 2016
Alta X (2015-2016)	Thompson et al. 2016a	Alta VIII (2014-2015)	WEST 2016c
Alta II-V, (2011-2012)	Chatfield et al. 2012	Pacific Winds (2014-2015)	WEST 2016a
Mustang Hills (2012-2013)	Chatfield et al. 2014		

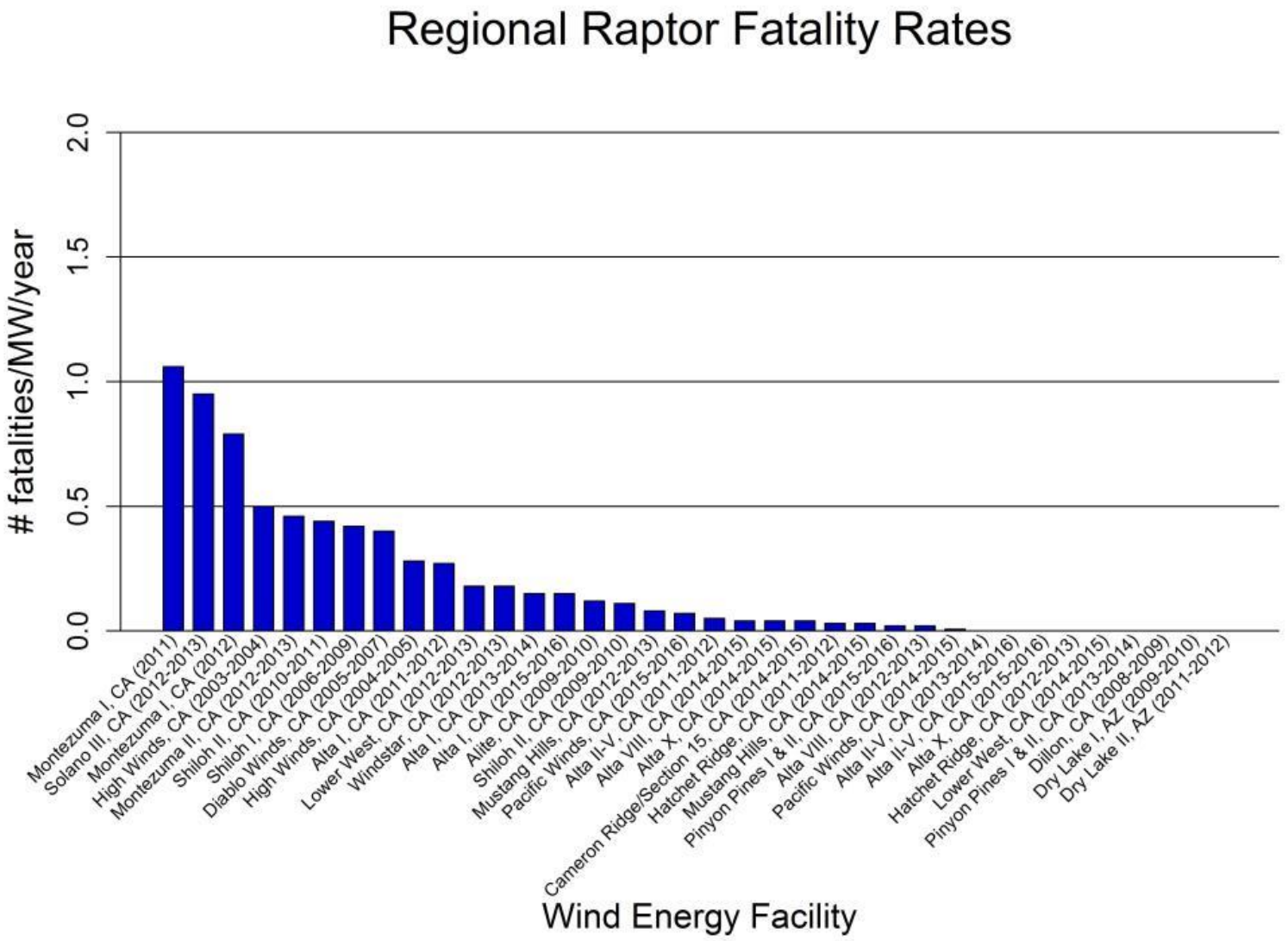

Figure 3. Fatality rates for diurnal raptors (number of raptors per megawatt per year) from publicly available studies at wind energy facilities in the California and Southwest regions of the US.

Figure 3 (*continued*). Fatality rates for diurnal raptors (number of raptors per megawatt per year) from publicly available studies at wind energy facilities in the California and Southwest regions of the US.

Data from the following sources:

Wind Energy Facility	Estimate Reference	Wind Energy Facility	Estimate Reference	Wind Energy Facility	Estimate Reference
Montezuma I, CA (2011)	ICF International 2012	Alta I, CA (2013-2014)	Chatfield et al. 2014	Pinyon Pines I & II, CA (2015-2016)	Rintz and Starcevich 2016
Solano III, CA (2012-2013)	AECOM 2013	Alta I, CA (2015-2016)	Thompson et al. 2016b	Alta VIII, CA (2012-2013)	Chatfield and Bay 2014
Montezuma I, CA (2012)	ICF International 2013	Alite, CA (2009-2010)	Chatfieldet al. 2010b	Pacific Winds, CA (2014-2015)	WEST 2016a
High Winds, CA (2003-2004)	Kerlingeret al. 2006	Shiloh II, CA (2009-2010)	Kerlingeret al. 2010	Alta II-V, CA (2013-2014)	Chatfield et al. 2014
Montezuma II, CA (2012-2013)	Harvey & Associates 2013	Mustang Hills, CA (2012-2013)	Chatfield and Bay 2014	Alta X, CA (2015-2016)	Thompson et al. 2016a
Shiloh II, CA (2010-2011)	Kerlingeret al. 2013a	Pacific Winds, CA (2015-2016)	WEST 2017	Hatchet Ridge, CA (2012-2013)	Tetra Tech 2013
Shiloh I, CA (2006-2009)	Kerlinger et al. 2009	Alta II-V, CA (2011-2012)	Chatfield et al. 2012	Lower West, CA (2014-2015)	Levenstein and DiDonato 2015
Diablo Winds, CA (2005-2007)	WEST 2006, 2008	Alta VIII, CA (2014-2015)	WEST 2016c	Pinyon Pines I & II, CA (2013-2014)	Chatfield and Russo 2014
High Winds, CA (2004-2005)	Kerlinger et al. 2006	Alta X, CA (2014-2015)	Chatfield et al. 2015	Dillon, CA (2008-2009)	Chatfieldet al. 2009
Alta I, CA (2011-2012)	Chatfield et al. 2012	Cameron Ridge/Section 15, CA (2014-2015)	WEST 2016b	Dry Lake I, AZ (2009-2010)	Thompson et al. 2011
Lower West, CA (2012-2013)	Levenstein and Bay 2013a	Hatchet Ridge, CA (2011-2012)	Tetra Tech 2013	Dry Lake II, AZ (2011-2012)	Thompson and Bay 2012
Windstar, CA (2012-2013)	Levenstein and Bay 2013b	Mustang Hills, CA (2014-2015)	WEST 2016c		

5.1.2 Bats

Bat fatalities have been discovered at most wind energy facilities monitored in North America, with mortality rates ranging from 0.10 (Tierney 2007) to 39.70 bats/MW/year (Fiedler et al. 2007). In 2012, an estimated 600,000 bats died because of interactions with wind turbines in the US (Hayes 2013). In California and the southwestern regions of the US, bat mortalities have generally been lower, ranging from zero to 3.92 bat mortalities/MW/year (Figure 4). In the TWRA, bat mortality rates have been very low, ranging from zero to 2.17 bat mortalities/MW/year (Table 3).

Bat mortality at wind energy facilities is largely due to collisions with moving turbine blades (Grodsky et al. 2011, Rollins et al. 2012), but the underlying reasons for why bats come near turbines are still largely unknown (Cryan and Barclay 2009). Most (nearly 80%) bat fatalities across North America are comprised of the three migratory tree bat species, namely the hoary, eastern red (*Lasiurus borealis*), and silver-haired bat (Kunz et al. 2007, Arnett et al. 2008, Arnett and Baerwald 2013, Hein et al. 2013); however, at facilities in the southwestern US, the Mexican free-tailed bat also constitutes a substantial proportion (41-86%) of bat fatalities (Arnett et al. 2008, Miller 2008, Piorkowski and O'Connell 2010). Fatality studies of bats at US wind-energy facilities have shown a peak in mortality in August and September and generally lower mortality earlier in the summer (Johnson 2005, Arnett et al. 2008). Based on the available data, it was expected that bat mortality at the Project would be low and occur primarily in late summer and fall.

The prediction of low impacts to bats was further supported by the results of the post-construction fatality study which are summarized in Section 7 below.

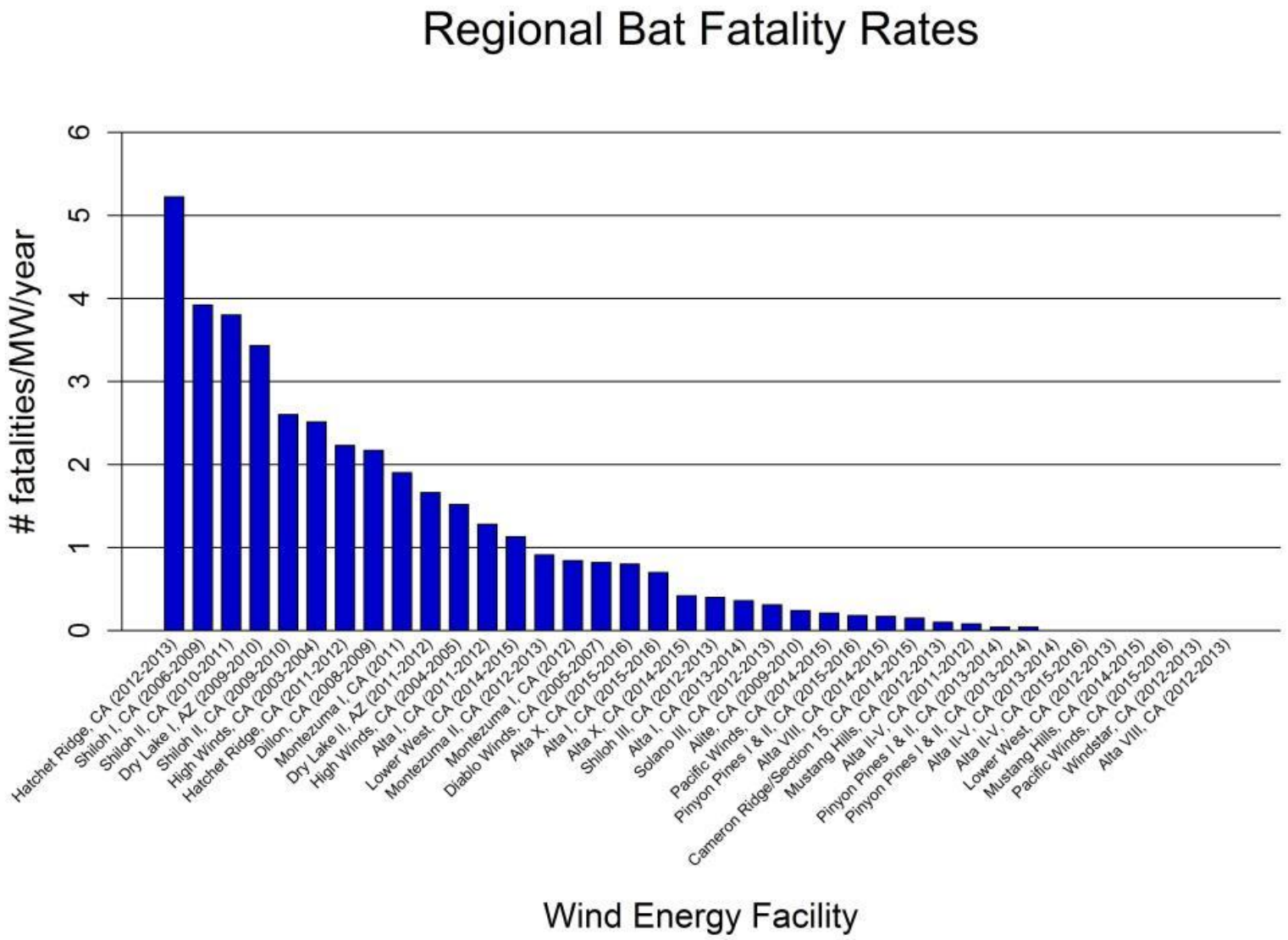

Figure 4. Fatality rates for bats (number of bats per megawatt per year) from publicly available studies at wind energy facilities in the California and Southwest regions of the US.

Figure 4 (*continued*). Fatality rates for bats (number of bats per megawatt per year) from publicly available studies at wind energy facilities in the California and Southwest regions of the US.

Data from the following sources:

Wind Energy Facility	Estimate Reference	Wind Energy Facility	Estimate Reference	Wind Energy Facility	Estimate Reference
Hatchet Ridge, CA (2012-2013)	Tetra Tech 2013	Lower West, CA (2014-2015)	Levenstein and DiDonato 2015	Pinyon Pines I & II, CA (2015-2016)	Rintz and Starcevich 2016
Shiloh I, CA (2006-2009)	Kerlinger et al. 2009	Montezuma II, CA (2012-2013)	Harvey & Associates 2013	Alta VIII, CA (2014-2015)	WEST 2016c
Shiloh II, CA (2010-2011)	Kerlingeret al. 2013a	Montezuma I, CA (2012)	ICF International 2013	Cameron Ridge/Section 15, CA (2014-2015)	WEST 2016b
Dry Lake I, AZ (2009-2010)	Thompson et al. 2011	Diablo Winds, CA (2005-2007)	WEST 2006, 2008	Mustang Hills, CA (2012-2013)	Chatfield and Bay 2014
Shiloh II, CA (2009-2010)	Kerlingeret al. 2010	Alta X, CA (2015-2016)	Thompson et al. 2016a	Alta II-V, CA (2011-2012)	Chatfield et al. 2012
High Winds, CA (2003-2004)	Kerlingeret al. 2006	Alta I, CA (2015-2016)	Thompson et al. 2016b	Pinyon Pines I & II, CA (2013-2014)	Chatfield and Russo 2014
Hatchet Ridge, CA (2011-2012)	Tetra Tech 2013	Alta X, CA (2014-2015)	Chatfield et al. 2015	Alta II-V, CA (2013-2014)	Chatfield et al. 2014
Dillon, CA (2008-2009)	Chatfieldet al. 2009	Shiloh III, CA (2012-2013)	Kerlingeret al. 2013b	Lower West, CA (2012-2013)	Levenstein and Bay 2013a
Montezuma I, CA (2011)	ICF International 2012	Alta I, CA (2013-2014)	Chatfield et al. 2014	Mustang Hills, CA (2014-2015)	WEST 2016c
Dry Lake II, AZ (2011-2012)	Thompson and Bay 2012	Solano III, CA (2012-2013)	AECOM 2013	Pacific Winds, CA (2015-2016)	WEST 2017
High Winds, CA (2004-2005)	Kerlinger et al. 2006	Alite, CA (2009-2010)	Chatfieldet al. 2010b	Windstar, CA (2012-2013)	Levenstein and Bay 2013b
Alta I, CA (2011-2012)	Chatfield et al. 2012	Pacific Winds, CA (2014-2015)	WEST 2016a	Alta VIII, CA (2012-2013)	Chatfield and Bay 2014

5.2 Disturbance/Displacement

5.2.1 Birds

In addition to removing habitat, wind turbines may displace wildlife from an area due to creation of edge habitat, the introduction of vertical structures, and disturbances directly associated with turbine operation (e.g., noise and shadow flicker) (USFWS 2012, NRC 2007). Impacts are concentrated near turbine locations and along access roads, although available data indicate that avoidance of wind turbines by birds generally extends 245 to 2,625 ft from a turbine, depending on the environment and the bird species affected (Strickland 2004). The magnitude of these impacts is expected to be minimal, as the Project has resulted in a relatively small amount of habitat loss and disruption relative to the surrounding landscape. Impacts are expected to consist primarily of shifts in species distribution within the Project area that are similar to existing conditions resulting from anthropogenic effects (USFWS 2012).

A review of the literature by Dooling (2002) on how well birds can hear in noisy (windy) conditions suggests that birds cannot hear the noise from wind turbine blades as well as humans can. In practical terms, a human with normal hearing can probably hear a wind turbine blade twice as far away as can the average bird. Although Dooling's study was intended to explore potential avoidance measures for birds, he found that birds habituate to acoustic disturbances and that blade noise becomes inaudible to some bird species at 82 ft from the turbine, suggesting that impacts from noise may be minimal at these distances.

Raptors nesting closer to turbines have the potential to be impacted by disturbance due to construction or operation of the facility. Birds displaced from wind energy facilities might move to lower quality habitat with fewer disturbances, with an overall effect of reducing breeding success. Most studies on raptor displacement at wind energy facilities, however, indicate effects to be negligible (Howell and Noone 1992, Johnson et al. 2000, 2003, Madders and Whitfield 2006). Given the generally low density of raptor nests documented in the region during baseline studies conducted for adjacent wind energy projects, limited displacement of nesting raptors was anticipated for the Project.

Wind energy facility construction appears to cause small-scale local displacement of grassland passerines. Construction also reduces habitat effectiveness because of the presence of access roads and large gravel pads surrounding turbines (Leddy 1996; Johnson et al. 2000). Leddy et al. (1999) surveyed bird densities in Conservation Reserve Program (CRP) grasslands at the Buffalo Ridge wind energy facility in Minnesota, and found mean densities of 10 grassland bird species were four times higher at areas located 180 m (591 ft) from turbines than they were at grasslands nearer turbines. Johnson et al. (2000) found reduced use of habitat by seven of 22 grassland-breeding birds following construction of the Buffalo Ridge wind energy facility. Results from the Stateline wind energy facility in Oregon and Washington (Erickson et al. 2004) and the Combine Hills wind energy facility in Oregon (Young et al. 2005) suggest a relatively small impact of wind energy facilities on grassland-nesting passerines. Transect surveys conducted prior to and after construction of the wind energy facilities found that grassland passerine use was significantly reduced within approximately 50 m (164 ft) of turbine strings, but areas further away from turbine strings did not have reduced bird use. Assuming similar displacement impacts

occur for passerine species that utilize desert scrub habitats, there is the potential for small-scale displacement of passerines and other bird species at the Project.

5.2.2 Bats

While no site-specific bat studies have been conducted within the Project, displacement impacts to bats were anticipated to be minimal due the very limited amount of wetland/water habitats for foraging and the apparent lack of trees and large rocky outcrops in the Project vicinity.

5.3 Potential Risk to Sensitive Species

5.3.1 Golden Eagle

There are no known eagle concentration areas within the Project or immediate vicinity of the Project. Based on avian use surveys conducted at the adjacent AOCM, Rising Tree, and Alta Infill projects between 2005 and 2012, golden eagle use of the region is generally very low with the majority of use occurring in the fall (Johnson et al. 2007, Erickson and Chatfield 2009, Chatfield et al. 2010a, Chatfield et al. 2011b). Potential roost sites are limited within the Project and surrounding area due to a lack of rock outcrops, cliffs, and large trees. However, there are a number of low-voltage (below 100 kv) overhead distribution lines in the vicinity of the Project that could provide opportunities for perching. Furthermore, based on the results of regional avian use surveys, the area does not appear to contain areas of concentrated golden eagle foraging. Livestock, which might provide scavenging opportunities for golden eagles, have been excluded from the Project by site security fencing. While the generally flat topography comprising the Section 15 portion of the Project is not expected to create conditions suitable for strong updrafts of wind and would not be expected to greatly influence the potential collision risk to golden eagles, the Cameron Ridge site does contain more variable topography and may, therefore, pose a greater collision risk to golden eagles.

While golden eagle or other raptor nest surveys were not conducted for the Project, aerial nest surveys were conducted for the nearby Alta Infill II project in 2011 (WEST 2011) and for the adjacent Rising Tree and Alta Infill projects in 2010 (Chatfield 2010a, 2011b). Surveys included all suitable golden eagle nesting habitat within 10 miles (16.1 km) of each project and were consistent with recommendation outlined in the USFWS *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and other Recommendations in Support of Golden Eagle Management and Permit Issuance* (Pagel et al. 2010). During the two years of surveys for these other regional projects, four active golden eagle nests were identified within 10 miles of the CCDLP Project. The closest nests were both located 6.4 miles (10.3 km) from the nearest Project turbines, while the other two were located 8.0 and 8.9 miles (12.9 and 14.3 km) from Project turbines. This suggests that disturbance to eagle nesting activity as a result of the Project would be unlikely. However, more recently, in February of 2017, an active golden eagle nest was documented within five miles (eight km) to the south of the Project (USFWS pers. comm.). Because no eagle nests have been documented in this location during extensive eagle nest surveys conducted for wind energy projects in the region over the past decade, and historical nesting at this site had not been identified, it is assumed that this is a relatively new territory that has become active since construction of the Alta Wind Energy Center and adjacent wind energy facilities. Should this territory remain active in subsequent years, use of the Project and surrounding area by golden eagles could potentially increase.

Consistent with the observed low use of the area by golden eagles, eagle fatality rates have been rare in the immediate vicinity of the Project. During intensive multi-year post-construction fatality monitoring at 11 different facilities in the vicinity of the Project, only three golden eagle fatalities have been documented since 2011, although the specific details of the fatalities are not publically available. In other regions of the TWRA, eagle fatalities have been more numerous; with at least nine golden eagle fatalities reported; however, the topography, elevation, vegetation, and species assemblages, including use by golden eagles, are markedly different at these facilities than in the more lowland portions of the TWRA, including the Project.

Based on low documented golden eagle use of the Project and surrounding area, as well as low eagle fatality rates observed at sites adjacent to the Project, impacts to golden eagles are estimated to be low.

5.3.2 California Condor

Based on a review of the literature, it is apparent that several physical and behavioral characteristics of condors puts them at high risk for turbine collision, including: 1) high wing loading, 2) social foraging, 3) curiosity for novel objects, and 4) a preference for foraging on sloped grassland sites. Data on flight height have determined that condors spend considerable time flying within the RSH. Additionally, condors are ecologically and morphologically similar to other vulture species (e.g., griffon vultures [*Gyps fulvus*], Egyptian vultures [*Neophron percnopterus*], and turkey vultures) which are susceptible to collisions with wind turbines. While no California condor collision fatalities have been documented at a wind energy facility, it is evident that a facility constructed in an area frequented by California condors would likely pose a collision risk to the species.

Based on the current range of the California condor and the available information on condor resource selection (Kiff et al. 1996, Synder and Schmitt 2002), it appears unlikely that California condors would occur within the Project soon. Although the possibility of a California condor occurrence cannot be entirely ruled out, it is expected that development of the Project would pose a low risk to California condors.

5.3.3 Swainson's Hawk

No Swainson's hawk nests were identified during protocol-level nest surveys conducted at the adjacent Alta Infill II project (CH2M HILL 2011a), nor were Swainson's hawk nests identified during raptor nest surveys conducted for other adjacent wind projects between 2006 and 2011 (Johnson et al. 2007, Erickson and Chatfield 2009, Chatfield et al. 2010a, Chatfield et al. 2011b). Swainson's hawks are known to nest within the Antelope Valley to the south and southwest of the Project; however, these nest sites are greater than 5 miles from the Project, which is the recommended survey distance for identifying potential significant impacts to Swainson's hawk habitat and the potential for "take" (California Energy Commission [CEC] and California Department of Fish and Game [CDFG] 2010). Due to the distance of the Antelope Valley nesting and breeding Swainson's hawks are unlikely to forage within the Project. There is potential for Swainson's hawks to migrate through the Project in spring and fall, during which time they would potentially be at risk for collision with turbines. However, over the course of 929 hours of avian use surveys at sites adjacent to the Project, only two Swainson's hawks were observed (one

at Rising Tree and one at Alta East, both during the spring; Johnson et al. 2007, Chatfield et al. 2011a). To date, no Swainson's hawks have been documented as fatalities in the TWRA (see Table 3 for a list of the studies examined).

5.3.4 Burrowing Owl

Areas surrounding the Project do not appear to be regularly used by nesting burrowing owls; however, burrows with previous sign of use have been documented during protocol-level breeding season surveys conducted at regional wind energy projects (see Erickson and Chatfield 2009, Chatfield et al. 2011a) suggesting burrowing owls do occur in the area. Incidental observations of burrowing owls in the region, made by biologists and wind farm personnel, are more commonly made during the non-breeding season suggesting possible higher use of the area by dispersing, migrating, or wintering owls than by breeding owls (A. Chatfield, WEST, pers. comm.). During post-construction monitoring conducted within the TWRA, two burrowing owl fatalities have been documented: one at Alta I during March of 2013 and one at Alta II during December of 2013 (Chatfield et al. 2014). There is at least some potential for impacts to burrowing owls from the Project.

5.3.5 Bats

Five bat species considered state species of special concern (CDFW 2017) have the potential to occur within the Project: pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western red bat (*Lasiurus blossevillii*), and western mastiff bat (*Eumops perotis*). Additionally, little brown bat (*Myotis lucifugus*), while not currently a federal listed species, is included in the USFWS National Listing Workplan (USFWS 2016b) which outlines the USFWS's planned approach to address a backlog of ESA listing petitions. Under the Workplan, the little brown bat is scheduled to be reviewed in 2023.

The Project is not located near any large, known bat colonies, water sources, caves, large rocky outcrops, or other features that are likely to attract large numbers of bats. In addition, the Project does not contain topographic features that may funnel migrating bats. The results of post-construction monitoring in the TWRA have revealed very low bat fatality rates (Table 3). Based on publically-available data, no state or federally-listed bat species have been found as fatalities in the TWRA to date (see Table 3 for a list of the studies examined); however, a single western mastiff bat, a state species of special concern (CDFW 2017), was recorded at the North Sky River facility in 2013 (Levenstein et al. 2014).

6 AVOIDANCE AND MINIMIZATION MEASURES

Information gathered during the Tier 1, 2, and 3 stages of Project development was used during the design and turbine and infrastructure siting process to reduce potential impacts to birds and bats and their habitats. The following Conservation Measures (CMs) have been implemented or are planned for the Project during the design, construction, and operation phases of the Project. These CMs represent CCDLP's willingness to ensure the least harm to avian and bat species. This BBCS was developed separate from the CEQA process, although mitigation measures adopted as part of that process may coincide with measures proposed herein.

6.1 Conservation Measures Implemented During Site Selection and Project Design

Based on the initial landscape-level screening of potential sites (Tier 1), CCDLP determined the Project to be the preferred location for a wind energy facility based upon the following reasons related to potential avian and bat impacts:

- The Project is bordered on all sides by existing or planned wind energy facilities.
- The Project is located adjacent to a primary transportation route, and numerous dirt roads were present throughout the site, reducing the need for new road construction.
- The Project is near (approximately 1.6 miles from) SCE's Windhub Substation, requiring a relatively short span of overhead transmission feeder line.
- The Project is sited in an area with a history of human activity including open-range sheep grazing, illegal dumping and shooting, and OHV use which has reduced the biological habitat quality.
- The Project does not currently host avian nests used by species listed under the ESA or CESA, or the BGEPA, nor does it contain designated critical habitat.

CCDLP has made efforts during initial site selection and during project design to locate and select wind turbines, met towers, and other appurtenances such that bird and bat collisions are minimized. Project design and siting measures to avoid or minimize risk to avian and bat species included the following:

- The existing road network reduced the need for road construction and existing roads were utilized when feasible.
- Most areas of the Project were fenced to exclude damaging activities that had occurred previously such as OHV recreation, grazing, and illegal dumping.
- Most electrical collection lines were buried underground. The transmission feeder line was installed through existing wind energy development, along Oak Creek Road, minimizing new disturbance.
- CCDLP coordinated with the Federal Aviation Administration (FAA) to minimize the number of wind turbines and met towers that require lighting. Lighting consists of low-frequency red strobe lights with the longest of a dark interval and shortest flash-on time as allowed.
- Lighting at substations and other operations and maintenance facilities are at a minimum required for safety and security needs (i.e., directional, hooded and/or shielded, low-intensity, low-sodium lights equipped with motion sensors). All Internal turbine nacelle and tower lighting is extinguished when unoccupied.
- The Project maximizes power generation per turbine to reduce the number of turbines needed to achieve maximum energy production.

6.2 Conservation Measures Implemented during Construction

Construction of the Project occurred over a period of approximately 18 months and represented the heaviest use of the site during the life of the Project. The following CMs were implemented to avoid or minimize risk to avian and bat species during construction:

- Vehicle speeds were limited to 15 mile-per-hour (mph) to avoid wildlife collisions. Construction vehicles were restricted to pre-designated access routes. Following Project construction, roads not needed for site operations were restored to native vegetation.
- To the extent feasible, the area required for Project construction and operation was minimized. CCDLP developed a Revegetation Plan for restoring all areas of temporary disturbance to their previous condition, including the use of native species when seeding or planting during restoration. The Revegetation Plan ensured:
    - All areas disturbed temporarily by Project construction were restored including temporary disturbance areas around structure construction sites, laydown/ staging areas, and temporary access roads,
    - Topsoil salvage was included in all grading activities.
    - Performance criteria, habitat replacement specifications, and tentative time frames for restoration of the site in addition to provisions for a monitoring program to assess the success of the restoration efforts.
    - CCDLP would mitigate any permanent loss of desert wash and riparian habitat found on site as identified by a CDFW Streambed Alteration Agreement.
- Appropriate erosion control methods were used during construction to eliminate or minimize runoff and avoid impacts to hydrology.
- CCDLP developed and implemented a Joshua Tree Preservation Plan identifying efforts made during construction to minimize vegetation removal and permanent loss. The plan included total acreage for Joshua tree woodland removal and used this amount for compensation to preserve Joshua tree habitat. A sum of $43,158.50 was provided to the City of Lancaster Parks, Recreation, and Arts Department, per terms of the Kern County mitigated negative declaration.
- CCDLP developed and implemented a comprehensive noxious weed control plan.
- Rocks unearthed during excavation were used during construction or removed from the site rather than left in piles near the turbines. Such rock piles create habitat for small mammals which serve as prey for many raptor species.
- Gravel was placed at least 5 ft (1.5 m) around each turbine foundation to discourage small mammals and reptiles from burrowing under or near turbine bases.
- Within 30 days prior to any grading or other ground-disturbing activities, a qualified biologist completed pre-construction surveys for all special-status plant and wildlife species with potential to occur in the Project.
- Sensitive resources (e.g., nests) identified during pre-construction surveys were flagged and all site personnel were notified of their presence and necessary setbacks.

- If construction or vegetation trimming/removal activities were undertaken during the avian breeding season (February 1 to August 31), surveys for nesting birds were conducted by a qualified biologist. If actively nesting birds were encountered during pre-construction nesting surveys, CCDLP consulted with appropriate resource agencies to establish adequate construction buffers around nests until the young had fledged.
- CCDLP retained a biological firm as an on-call service provider throughout construction of the Project.
- If an injured or dead special status species was encountered during construction, CCDLP stopped all work within the immediate vicinity and notified the appropriate agencies as well as the on-call biologist before construction was allowed to proceed.
- All trash was covered in raven-proof containers and work sites were cleared daily of any garbage and debris related to food.
- CCDLP utilized a Biological Monitor during the construction of the Project. The Biological Monitor was on-site during all construction activities to oversee these activities and ensure that no sensitive species were injured by them.
- Open trenches, or other excavations that could entrap wildlife were inspected by the Biological Monitor once in the morning and once in the evening and immediately before backfilling.
- Employees and contractors were instructed to look under vehicles and equipment for the presence of wildlife before movement.
- All of CCDLP's employees and contractors working on site received worker awareness training for identifying and responding to encounters with sensitive biological resources, including avian and bat species. The training:
    - Was conducted by the lead Biological Monitor or their designee.
    - Included a review of mitigation requirements, briefings of relevant regulatory laws and consequences of non-compliance with each.
    - Included instructions for all employees, contractors, and site visitors to avoid harassing or disturbing wildlife.
    - Included instruction on identification and values of plant and wildlife species and significant natural plant community habitats, the issue of microtrash and its effects, fire protection measures and measures to minimize the spread of weeds during construction as well as hazardous material spill and containment measures.
    - Included a flier to be distributed to all workers on the Project detailing information on the California condor, golden eagle, desert tortoise (*Gopherus agassizii*), and other potential state and federal special status animal and plant species that might be discovered on the Project site.
    - Included an overview of the distribution, general behavior, and ecology of golden eagles. Employees and contractors were informed that they are not authorized to approach, handle, or otherwise move any golden eagles that might be encountered during construction, whether alive, injured, or deceased. Employees and

contractors were instructed to report any finding of an injured or deceased golden eagle to the USFWS within 24 hours of positive identification by a qualified biologist.

- CCDLP provided funding to the California Condor Recovery Program for conservation measures such as radio telemetry, condor feeding programs, or other such measures as deemed appropriate.
- All permanent met towers are un-guyed.
- All power lines were constructed in accordance with the most current APLIC Suggested Practices (APLIC 2006) to protect birds from electrocution and collision. Given that the California condor could expand its range in the future, CCDLP designed overhead transmission lines for the Project such that the minimum conductor spacing is 18' 6".

6.3 Conservation Measures Implemented during Operations

- Low speed limits (e.g., less than 15 mph) are enforced on all roads within the facility.
- Other than maintenance vehicles which must park at the entrance of turbines for maintenance purposes, parts and equipment which may be used as cover for prey are not stored at the base of wind turbines while a turbine is operational and spinning.
- Fire hazards from vehicles and human activities are reduced (e.g., use of spark arrestors on power equipment, avoiding driving vehicles off roads, allowing smoking in designated areas only).
- Noxious weeds are monitored and removed on an annual basis.
- Pest and weed control measures are implemented as specified by county, state, and federal requirements.
- A three-year avian fatality monitoring program was implemented at the start of operation (see Section 7.1).
- A Wildlife Incident Reporting System (WIRS) has been developed and will be implemented for the life of the Project (see Section 7.2).

7 POST-CONSTRUCTION MONITORING: TIER 4

7.1 Tier 4a – Avian and Bat Fatality Monitoring

Post-construction fatality monitoring is a critical component of this BBCS, as well as the first Tier navigated by the Project following the release of the WEG. The primary objective of fatality monitoring is to estimate avian and bat mortality at the Project and to determine whether the estimated mortality is lower, similar to, or higher than the average mortality observed at other regional projects, and consistent with the low levels of mortality predicted during the pre-construction risk assessments (see Section 6).

7.1.1 Baseline Monitoring

Baseline monitoring consists of short-term intensive surveys involving standardized carcass searches and bias trials for searcher efficiency and carcass removal conducted by trained biologists. Baseline fatality monitoring was conducted during the first, third, and fourth years of commercial operations of the Project as prescribed in the Addendum to the Mitigated Negative Declaration for the CCDLP, Item 13, issued by Kern County in April 2011, Item 13 (Kern County Planning Department 2011). The monitoring study design is consistent with the recommendations for operations monitoring included in the WEG (USFWS 2012), as well as the California Wind Energy Guidelines (California Energy Commission (CEC) and California Department of Fish and Game [CDFG] 2007). Additionally, the scope and duration of the fatality monitoring study have been developed to be consistent with, and within the range of, monitoring programs that have been conducted at other wind energy facilities in the western United States, and in the TWRA in particular.

7.1.1.1 Monitoring Activities

Baseline fatality monitoring was conducted during the first (May 2012 – April 2013), third (August 2014 – August 2015), and fourth (August 2015 – August 2016) years of commercial operations of the Project. Baseline avian and bat monitoring consisted of the following components:

1) Standardized carcass searches of selected turbines in a rectangular plot centered on the turbine;
2) Searcher efficiency trials to estimate the percentage of carcasses found by searchers;
3) Carcass persistence trials to estimate the length of time that a carcass remains in the field for possible detection; and
4) Data analysis and calculation of fatalities.

A detailed discussion of the methodology for the field surveys and fatality analysis can be found in the survey reports for the individual years of monitoring (MHWA 2013, WEST 2016b, Rintz and Thompson 2017).

Following the third year of baseline monitoring, CCDLP coordinated with the Kern County Planning Department to determine (based on input from the USFWS and CDFW) if additional years of monitoring were warranted. CCDLP met with Kern County Planning on August 23, 2017. The County staff did not express the need for CCDLP to conduct additional monitoring and would provide written verification of such to CCDLP. At the time of development of this Plan, such a letter had not been received. At the completion of the baseline monitoring study, CCDLP's corporate WIRS was implemented to monitor and report avian and bat mortality through the life of the Project (see Section 7.2).

7.1.1.2 Reporting

An annual report was completed following each year of the three-year fatality monitoring study and submitted to the Kern County Planning Department, the USFWS, and the CDFW within three months of completion of surveys. Each report details the results of mortality surveys, as well as the results of searcher efficiency and carcass removal trials. Fatality rates were estimated following the most recent and acceptable methods. Annual reports also include a validation of

risk assessment, comparing the results of pre- and post-construction avian use data with the actual avian effects as determined by the fatality monitoring.

7.1.1.3 Monitoring Results

The results presented here include all three years of post-construction fatality monitoring conducted at the Project. It should be noted, however, that following the completion of the initial year of monitoring by MH Wolfe and Associates (MHWA 2013), Western EcoSystems Technology, Inc. (WEST) was contracted to conduct to the second and third years of monitoring (third and fourth years of operations) at the Project (WEST 2016b, Rintz and Thompson 2017). Due to changes in survey protocols initiated when WEST took over the monitoring (i.e., different sample of turbines, larger survey plots, different statistical methods), direct per turbine mortality analysis comparisons between the first year of monitoring and the second and third years of monitoring are not possible, rather, only general Project impacts can be compared.

During three years of monitoring, a total of 22 bird fatalities, representing at least 11 unique species, were recorded (Table 4). This included two birds found during Year 1 (2012-2013), 11 birds found during Year 2 (2014-2015), and nine birds found during Year 3 (2015-2016). Of the 22 total bird fatalities, 18 were found within turbine search plots and five were found during searches of the distribution lines. In general, avian and bat fatalities were comprised of common residents and migrants occurring in the region. During the three-year monitoring period, only two raptors were found: one great horned owl (*Bubo virginianus*) and one unidentified raptor (Table 4). No state or federal listed species or species of concern were found during the baseline monitoring.

Bird fatalities were generally distributed throughout both portions of the Project, with approximately 68% of bird mortality found at Cameron Ridge turinbes,14% found at Section 15 turbine, and 18% found along the distribution lines. Bird fatalities were found during all four seasons, with relatively few fatalities found in the summer months.

Over the course of the three-year monitoring period, only two bat fatalities were found. This included an unidentified bat carcass found at Cameron Ridge in October of 2014 and a Mexican free-tailed bat carcass found at Section 15 in December 2015 (Table 4).

Table 4. Total number of bird and bat casualties[a] and the composition of casualties discovered during each year of fatality monitoring at the CCDLP Wind Energy Project, May 2012 – August 2016.

Species	2012-2013		2014-2015		2015-2016		Total	
	Total	% Comp.	Total	% Comp.	Total	% Comp.	Total	% Comp.
Birds								
Turbine Search Plots								
fox sparrow	0	0	0	0	1	11.1	1	4.3
great egret	0	0	1	9.1	0	0	1	4.3
greater roadrunner	0	0	1	9.1	1	11.1	2	8.7
great-horned owl	1	50.0	0	0	0	0	1	4.3
house finch	0	0	1	9.1	0	0	1	4.3
mountain bluebird	0	0	0	0	1	11.1	1	4.3
mourning dove	1	50.0	0	0	0	0	1	4.3
rock pigeon	0	0	0	0	3	33.3	3	13.0
unidentified game bird	0	0	1	9.1	0	0	1	4.3
unidentified large bird	0	0	1	9.1	0	0	1	4.3
unidentified passerine	0	0	1	9.1	0	0	1	4.3
unidentified raptor	0	0	1	9.1	0	0	1	4.3
unidentified small bird	0	0	1	9.1	1	11.1	3	13.0
Distribution Line Search Pots								
common raven	0	0	1	9.1	0	0	1	4.3
rock pigeon	0	0	0	0	1	11.1	1	4.3
unidentified dove	0	0	1	9.1	0	0	1	4.3
unidentified passerine	0	0	0	0	1	11.1	1	4.3
unidentified warbler	0	0	1	9.1	0	0	1	4.3
Overall Birds	**2**	**100**	**11**	**100**	**9**	**100**	**23**	**100**
Bats								
Turbine Search Plots								
Mexican free-tailed bat	0	0	0	0	1	100	1	50.0
unidentified bat	0	0	1	100	0	0	1	50.0
Overall Bats	**0**	**-**	**1**	**100**	**1**	**100**	**2**	**100**

Separate fatality estimates and 90% confidence intervals were calculated for each year of the study for each of the following bird and bat categories: 1) all birds, 2) small birds, 3) large birds, 4) diurnal raptors, and 5) bats (Table 5). All fatality estimates were adjusted based on corrections for carcass removal and observer detection bias. The estimated fatality rates for all bird and bat categories were very consistent between the second and third years of the study, with somewhat lower fatality rates observed during the first year of monitoring (Table 5). As noted above, changes in study methodology following completion of the initial year of monitoring precludes the direct comparison of mortality estimates between the first and subsequent years of monitoring. However, the fact that mortality rates for all bird and bat categories are consistently low across all three years generally supports the assessment of very low impacts to birds and bats from the operation of the Project.

Table 5. Adjusted overall bird and bat fatality estimates and 90% Confidence Intervals (CI; where appropriate) per turbine, per MW, and per distribution plot during the three-year fatality monitoring study at the CCDLP Wind Energy Project, May 2012 – August 2016.

	2012-2013		2014-2015		2016-2017	
	Mean	**CI[1]**	**Mean**	**CI**	**Mean**	**CI**
Fatalities/turbine/year						
small birds	0		0.82	0.23 – 1.74	1.00	--
large birds	0.27		0.53	0.11 – 0.98	0.72	--
diurnal raptors	0		0.11	--	0	
all birds	0.27		1.35	0.59 – 2.41	1.72	1.47 – 2.20
bats	0		0.44	--	0.56	--
Fatalities/MW/year						
small birds	0		0.27	0.08 – 0.58	0.33	--
large birds	0.09		0.18	0.04 – 0.33	0.24	--
diurnal raptors	0		0.04	--	0	
all birds	0.09		0.45	0.20 – 0.80	0.57	0.49 – 0.73
bats	0		0.15	--	0.19	--
Fatalities/distribution line plot/year						
small birds	0		1.17	--	0	
large birds	0		3.51	--	1.98	--
diurnal raptors	0		0		0	
all birds	0		4.68	--	1.98	--
bats	0		0		0	

[1]Confidence intervals not included in MHWA (2013).
[2]Confidence intervals not provided for estimates when sample sizes were less than five (WEST 2016b, Rintz and Thompson (2017).

7.1.1.4 Conclusions

During the three-year monitoring study, bird and bat fatality rates were all very low relative to other wind energy facilities in California and the southwest region of North America (see Figures 2, 3, and 4) and throughout North America (see Appendix C in Rintz and Thompson 2017). Overall, the fatality rates estimated during the study are consistent with the generally low fatality rates observed at other TWRA facilities that are located on the lower slopes and/or desert floor (Table 3). Direct impacts to bird and bat species from the Project are estimated to be low and consistent with what was predicted from the baseline data collection and risk assessment (Section 5). Impacts to birds and bats do not appear to be significant enough to warrant additional measures to reduce impacts.

7.1.2 Long Term Monitoring

In addition to the three-year post-construction fatality monitoring study described above, CCDLP has implemented their corporate WIRS, included as Appendix A, which will remain active for the life of the Project. The purpose of the WIRS is to standardize the actions taken by site personnel in response to wildlife incidents encountered at the Project and to fulfill the obligations of CCDLP in reporting wildlife incidents. The WIRS will be utilized by site operations and maintenance personnel who encounter dead or injured birds or bats incidentally while conducting general wind energy facility or transmission line maintenance activities. The WIRS is designed to provide a means of recording fatalities in the Project to increase the understanding of wind turbine and wildlife interactions, and to ensure eagles and other large bird fatalities or significant

fatality events are documented. Additionally, any native bird found injured within the Project will be reported immediately to Tehachapi Wildlife Rehabilitation and Education for further direction. Any incident involving a state or federally listed threatened or endangered species or a golden eagle will be reported to the USFWS and the CDFW within 24 hours of identification. CCDLP maintains an ongoing commitment to investigate wildlife incidents involving company facilities and to work cooperatively with federal and state agencies in an effort to prevent and mitigate future bird and bat fatalities. It is the responsibility of CCDLP's employees, turbine manufacturer technicians, and subcontractors to report all avian and bat incidents to their immediate supervisor. Long-term fatality monitoring data will be maintained by the onsite Operations Manager as part of the WIRS.

Operations and Maintenance staff will be specifically trained to monitor for dead or injured golden eagles and California condors during their work activities. A data sheet that describes how Project personnel can recognize an injured or dead golden eagle or California condor will be posted in the maintenance facility. USFWS will be notified within 24 hours upon positive identification of a golden eagle or California condor injury or fatality.

Instructions for reporting all dead or injured birds or bats encountered at the Project including procedure for reporting eagles and state and federal listed species, as well as the reporting form, are provided in the Project WIRS, included as Appendix A.

7.2 Tier 4b – Assessing Impacts to Habitat

No Tier 4b studies to assess impacts to habitat or species of special concern were deemed necessary based on Tier 3 findings.

8 RESEARCH: TIER 5

In addition to the Tiers 1-4 described above, the WEG contain a *Tier 5 Other Post-Construction Studies*. In general, the studies identified in Tier 5 are research related and "will not be necessary for most wind energy projects". Considering the results of the three-year post-construction fatality monitoring study which indicated very low Project-related impacts to birds and bats, no Tier 5 studies are currently planned.

9 ADAPTIVE MANAGEMENT

Within the WEG, the USFWS defines adaptive management as "an iterative decision process that promotes flexible decision-making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Comprehensively applying the tiered approach embodies the adaptive management process" (USFWS 2012). The WEG further notes that adaptive management at most wind energy facilities is unlikely to be needed if they are sited in accordance with the tiered approach. Nevertheless, CCDLP recognizes the value of applying this approach to its Project activities that include some uncertainty. As such, an adaptive approach for the conservation of wildlife potentially impacted by the Project is incorporated into this Plan.

Section 4 of this BBCS describes the tiered approach used to study pre-construction wildlife conditions and predict Project impacts. Based on Project siting (existing region of high-intensity wind energy development) and the results of regional wildlife studies, no significant adverse impacts were anticipated from the Project and mortality was expected to fall within the overall range of other facilities in the TWRA (see Table 3). This assessment has been supported by the results of the three-year baseline fatality monitoring study conducted at the Project (see Section 7.1.1.3). The overall bird, raptor, and bat fatality rates estimated during baseline monitoring were generally very low and fell within the range of other nearby facilities. As such, no adaptive response appears to be necessary for overall impacts to bird and bats now, particularly with the implementation of the long-term WIRS (see Section 7.1.2) to ensure that any future significant, unexpected mortality events will be documented. Based on the results of the ongoing WIRS, adaptive management measures could be considered to further avoid, minimize, or compensate for any unanticipated and significant project impacts to wildlife documented during the long-term monitoring program. Thresholds for considering an adaptive response include:

- Unexpected mortality of an eagle or a species listed as endangered/threatened under the federal ESA and/or CESA; or
- Unexpected significant levels of mortality of unlisted species of birds or bats. Significance will be determined by qualified biologists and will be based on the latest information available, including the most recent data on species' population sizes and trends. For example, even relatively high levels of mortality of the most common species may not be significant. Conversely, lower levels of mortalities of less common species may be of more concern, particularly if these species appear to be at risk (e.g., California species of special concern or USFWS Birds of Conservation Concern).

Depending on the results of the WIRS currently in place at the Project, no further action may be needed if effects are determined to be minimal and the results do not include eagles or other state or federal protected species. If effects are determined to be higher than anticipated, an assessment of why effects are occurring will be conducted to aid in developing appropriate avoidance, minimization, or mitigation measures. If causation of effects is unknown, further monitoring efforts may be implemented to help understand effects. Some of the adaptive management options that could be considered depending on the results of the post-construction mortality monitoring and considering economic feasibility[1] include:

- An additional year of formal baseline fatality monitoring with a focus on detecting golden eagles or other raptors (i.e., greater number of Project turbines searched but with wider-spaced transects and longer search interval).
- Implementation of on-site eagle/condor identification system to inform turbine curtailment, if such efforts are demonstrated to be cost-effective relative to other avoidance or mitigation measures;

[1] Once a project is operational there is a fixed amount of capital expenditure and the only available source of funding is from operational budgets, which must be within the economic parameters of the Project.

- Implementation of bird or bat deterrent technology, if cost-effective methods are developed;
- Additional on-site studies (e.g., more intensive area use studies through observation or telemetry, prey base studies);
- Addition or modification of anti-perching, anti-nesting, or electrocution protection devices on "problem" project facilities; and
- Prey-base management through habitat alteration.

Once the adaptive management response is put into place, additional monitoring to determine the effectiveness of the measures may be conducted, and, depending on the results, further remedial measures may or may not be warranted.

10 CONCLUSIONS

This BBCS was written to provide guidance for avoiding, minimizing, and monitoring potential effects to avian and bat species at the Project. The measures described in this document are intended to help protect and reduce effects to avian and bat species during the construction phase of the Project, as well as to monitor potential impacts to avian and bat species following implementation of the Project. Further, it is anticipated that this BBCS will facilitate adaptive management at the Project based on information gathered following construction of the Project.

11 KEY RESOURCES

Key wildlife resource personnel involved with the Project include the following:

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Appendix A. Wildlife Incident Reporting System

Coram California Development LLC
Wildlife Incident Reporting System

December 2017

The following procedures are to be followed when wind project personnel or others discover an avian or bat fatality or injury while on site. These procedures are intended to be in place for the life of the Coram California Development LLC Wind Energy Project (the Project) and are independent of any monitoring studies. Implementation of this Wildlife Incident Reporting System (WIRS) will be part of the staff training program at the Project.

WHAT CONSTITUES A REPORTABLE INCIDENT?

For the purpose of this reporting system, *incident* is a general term that refers to any bird or bat, or evidence thereof, that is found either dead or injured within the Project.

- **Fatality** = any incident where death occurred, such as a carcass, carcass parts, bones, or a feather spot (10 or more feathers constitutes a feather spot).
- **Injury** = any bird or bat with an apparent injury, or that exhibits signs of distress to the point where it cannot move under normal means or does not display escape or defense behavior.

Always exercise caution before approaching an injured animal. **Under no circumstances can site personnel handle carcasses or injured animals on site.**

INCIDENT REPORTING PROCEDURES:

Fatality

1. Leave the carcass in place. Do NOT handle the carcass unless necessary for species identification purposes. A flag may be used to mark its location for easy finding while specific data are being recorded. It is recommended that any flagging be marked with the date, time, and initials of the recorder.
2. Photograph the incident as it was found in the field. Take at least two pictures: a close-up shot of the animal as it lies in the field and a broader view of the animal (marked with a flag) with the road, turbines, or other local features in the view. For the close-up picture, lay a measuring object such as a radio, ruler, coin, etc. next to the carcass so that is appears in the photo.
3. Prepare a Wildlife Incident Report Form (attached).
4. Report the incident to the Project Facility Manager and the CED Regional Environmental Manager within 24 hours.

Any incident involving a state of federal listed threatened or endangered species or a bald or golden eagle must be reported to the US Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) within 24 hours of identification. These incidents will be reported to the agencies verbally by CED's Regional Environmental Manager or designated representative. See Project personnel listing below for contact information. Photos of golden eagle, California condor, and Swainson's hawk are included at the end of the document for reference.

FIELD OPERATIONS STAFF TO CONTACT THE FOLLOWING:

COMPANY	NAME/TITLE	PHONE NO.	EMAIL
ConEdison Development	Tyler Juhl/ Operations Manager	(O) 507-562-4310 (C) 507-215-1283	juhlt@coneddev.com
ConEdison Development	Mark Chrisos HSSE Director	(O) 914-365-0118 (C) 914-365-0118	ChrisosM@coneddev.com

CON EDISON DEVELOPMENT TO CONTACT THE FOLLOWING:

COMPANY	NAME/TITLE	PHONE NO.	EMAIL
USFWS	Office of Law Enforcement 2800 Cottage Way, W-2928 Sacramento, CA 95825-1846	916-414-6660 916-414-6715 (f)	Not Applicable
USFWS	Tom Dietsch Migratory Bird Biologist	760-431-9440 x214	thomas_diestch@fws.gov
CDFW	Lisa Gymer, Permit Specialist	559-243-4014 x238	Lisa.gymer@wildlife.ca.gov
Rescue	Ojai Raptor Center	805-649-6884	

Wildlife Mortality & Injury Report Form

Coram California Development, LP

Instructions:

1) Do not move or disturb the dead or injured wildlife
2) Notify Supervisor immediately, providing general description and photo.
3) Complete Sections 1 and 2 of the form.
4) Supervisor: Send a electronic version of this form and photo to chrisosm@coneddev.com
5) File the form in local operations office.

SECTION 1-GENERAL INFORMATION

Date: _____ **Time:** _____ **Project Name:** _____

Observer Name: _____

SECTION 2-INCIDENT INFORMATION

Incident Type: Fatality Injury **Condition:** intact dismembered feathers

Estimated days since death: _____ (e.g., fresh, <3, 3-7, 7-14, 14-30, >30)

Notes on condition: _____

Photos taken: Yes No

Location / Structure ID: _____ (e.g., turbine #, building, road #)

Distance from structure (m): _____ **Direction from structure:** North South East West

GPS coordinates (include datum): _____

SECTION 3-TO BE COMPLETED BY THE COMPLIANCE MANAGER OR DELEGATE

Species: _____ **How Identified:** in hand photograph

Collected (only if permitted to do so): Yes No

Location if collected: _____

Notes: _____

Agency Contacted: _____ N/A

If YES, date/time and representative: _____

Follow-up Actions: _____

Electronic file location: _____

Golden Eagle – federally-protected under the Bald and Golden Eagle Protection Act and state species of special concern

California Condor – state and federal endangered species

Swainson's Hawk – state threatened species