APPENDIX D Part 1

Biological Resources Technical Report

DRAFT

Biological Resources Technical Report
For the Campo Wind Project with Boulder Brush Facilities
San Diego County, California

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Biological Resources Technical Report
Campo Wind Project with Boulder Brush Facilities, San Diego County, California

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
amsl	above mean sea level
BCC	Birds of Conservation Concern
BMO	Biological Mitigation Ordinance
BMP	best management practice
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNPS	California Native Plant Society
County	County of San Diego
CRPR	California Rare Plant Rank
FESA	Federal Endangered Species Act
GIS	Geographic Information System
GPS	Global Positioning System
IA	index of activity
M-	Mitigation Measure
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
NCCP	Natural Community Conservation Plan
O&M	operation and maintenance
Project	Torrey Wind Project
RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service
WL	Watch List
WRRS	Worker Response Reporting System

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SUMMARY

This Biological Resources Technical Report was prepared for the Campo Wind Project with Boulder Brush Facilities (Project). The Project consists of both the Campo Wind Facilities that would be located within the Campo Band of Diegueno Mission Indians (Tribe) Reservation (Reservation) and the Boulder Brush Facilities that would be located on adjacent land leased from a private landowner within the Boulder Brush Boundary. Collectively, the entire land area within both the Reservation Boundary and Boulder Brush Boundary comprise the Project Area. The Campo Wind Facilities would be located within a corridor of approximately 2,200 acres of land (Campo Corridor) within the approximately 16,000-acre Reservation Boundary. The Boulder Brush Facilities would be located within a corridor of approximately 320 acres of land (Boulder Brush Corridor) within the approximately 2,000-acre Boulder Brush Boundary. Collectively, the Campo Corridor and the Boulder Brush Corridor compose the approximately 2,520-acre Project Site. Project disturbances associated with construction of the Campo Wind Facilities within the Campo Corridor are expected to be approximately 800 acres, whereas Project disturbances associated with the construction of the Boulder Brush Facilities within the Boulder Brush Corridor are expected to be approximately 130 acres.

Boulder Brush Facilities

Project components within the Boulder Brush Corridor are referred to as the Boulder Brush Facilities. These facilities include 3.5 miles of the overhead gen-tie line, high-voltage substation, switchyard, connection to the SDG&E Sunrise Powerlink, paved access road to the high-voltage substation and switchyard, and unpaved access roads, water tanks dedicated for firefighting purposes, and required fuel modification zones. Off-site improvements would include widening and paving a segment of Ribbonwood Road from Opalocka Road to the site's primary entrance. The Boulder Brush Boundary is located in the East County Multiple Species Conservation Program (MSCP) planning area.

The following surveys were completed in 2018 and/or 2019 for the Boulder Brush Facilities: vegetation mapping, a formal jurisdictional delineation, rare plant surveys (also conducted in 2017), focused least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and Quino checkerspot butterfly (*Euphydryas editha quino*) surveys, and surveys to document avian, eagle, and Peninsular bighorn sheep (*Ovis canadensis nelsoni*) use within all, or suitable portions of, the Boulder Brush Corridor. Additionally, Dudek conducted the following surveys within portions of the Boulder Brush Boundary in 2011: Quino checkerspot butterfly protocol surveys, avian and eagle counts, raptor nest surveys, and an acoustical bat survey (surveys started in 2011 and were completed in 2012). While the 2011/2012 surveys were for a different project, these surveys include valuable data utilized to determine the

potential for special-status species to occur within the Boulder Brush Corridor. In June 2019, the Boulder Brush Facilities were redesigned to avoid cultural resources. This resulting in some slivers and small areas of land located outside of the original survey areas totaling 27.1 acres; however, the 2018 and 2019 surveys covered nearly all of the Boulder Brush Corridor. Depending on the resource or species, some surveys included these areas outside of the Boulder Brush Corridor. An additional visit was done to map jurisdictional resources in the added areas in 2019. This report documents the results of Dudek's field work for 2011, 2012, 2017, 2018, and 2019 and an analysis of the impacts related to the Boulder Brush Facilities.

Eleven native vegetation communities were mapped by Dudek biologists within the Boulder Brush Corridor: big sagebrush scrub, coast live oak woodland (including open coast live oak woodland), emergent wetland, granitic chamise chaparral, granitic northern mixed chaparral, montane buckwheat scrub, red shank chaparral, semi-desert chaparral, southern arroyo willow riparian forest, and wildflower field. Two non-native vegetation communities, disturbed habitat and eucalyptus woodland, were mapped within the Boulder Brush Corridor, along with two land cover types: urban/developed and unvegetated channel.

The focused plant and wildlife surveys resulted in the detection of the following special-status species: Tecate tarplant (*Deinandra floribunda*), Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), sticky geraea (*Geraea viscida*), desert beauty *(Linanthus bellus*), southern jewelflower (*Streptanthus campestris*), Colorado desert larkspur (*Delphinium parishii* ssp. *subglobosum*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), loggerhead shrike (*Lanius ludovicianus*), California horned lark (*Eremophila alpestris actia*), northern harrier (*Circus hudsonius*), red-shouldered hawk (*Buteo lineatus*), western bluebird (*Sialia mexicana*), yellow warbler (*Setophaga petechia*), turkey vulture (*Cathartes aura*), barn owl (*Tyto alba*), merlin (*Falco columbarius*), Bell's sage sparrow (*Artemisiospiza belli belli*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), mule deer (*Odocoileus hemionus*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), Blainville's horned lizard (*Phrynosoma blainvillii*), and Quino checkerspot butterfly.

In addition, an acoustical bat survey was conducted in 2011 for a previous project proposed by a different applicant (Jewell Valley Wind Project). While the acoustical bat equipment was located outside of the Boulder Brush Corridor (along the eastern boundary of the Boulder Brush Boundary), the following special-status bats were detected flying immediately adjacent to the Boulder Brush Corridor: pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western small-footed myotis (*Myotis ciliolabrum*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), and big free-tailed bat (*Nyctinomops macrotis*). Focused surveys for Quino checkerspot butterfly were conducted in 2018

and again in 2019. The 2019 surveys resulted in the detection of five individuals during 1 week of surveys within the Boulder Brush Corridor.

The Boulder Brush Facilities, which are under the County's jurisdiction, would result in total permanent impacts to 43.9 acres and temporary impacts to 87.3 acres, of which 38.3 acres of permanent impacts and 84.8 acres of temporary impacts are considered sensitive vegetation communities. This includes permanent impacts to 0.13 acres of non-wetland waters of the United States/state and 0.15 acres of California Department of Fish and Wildlife (CDFW) riparian habitat and County Resource Protection Ordinance (RPO) wetlands. There are also temporary impacts to 0.30 acres of non-wetland waters of the United States/state and 0.40 acres of CDFW riparian habitat and County RPO wetlands. The proposed Project would also permanently impact 2.0 acres and temporarily impact 5.3 acres of oak root protection zones. The Project would result in potentially significant short-term and long-term direct and/or indirect impacts to special-status plants (Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), southern jewelflower (*Streptanthus campestris*), tecate tarplant (*Deinandra floribunda*), desert beauty (*Linanthus bellus*), sticky geraea (*Geraea viscida*), and Colorado desert larkspur (*Delphinium parishii* ssp. *subglobosum*)); special-status wildlife species (San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), San Diego banded gecko (*Coleonyx variegatus abbotti*), Blainville's horned lizard (*Phrynosoma blainvillii*), Coronado skink (*Plestiodon skiltonianus interparietalis*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), Cooper's hawk (*Accipiter cooperii*), Bell's sage sparrow (*Artemisiospiza belli belli*), loggerhead shrike (*Lanius ludovicianus),* yellow warbler (*Setophaga petechia*), western red bat (*Lasiurus blossevillii*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and San Diego desert woodrat (*Neotoma lepida intermedia*)); and wildlife habitat, as well as short-term direct impacts to wildlife movement and migratory birds. While the areas of temporary impacts will be replanted with native vegetation to provide erosion control, slope stabilization, or other necessary function, they will not be monitored or managed under a long-term plan; therefore, both permanent and temporary impacts will require mitigation, per County guidelines. Mitigation would include off-site preservation of 155.1 acres of similar habitat types within a mitigation bank or through protection of land with a biological open space easement; special-status plant species mitigation through protection of land with known populations (mitigation for individual plants at specified ratios); pre-construction monitoring, flagging and fencing, and other best management practices; nesting bird surveys; avian and bat monitoring; fire protection; access control; and any necessary federal and state agency permits. All potentially significant impacts associated with the Boulder Brush Facilities would be reduced to less than significant with implementation of the mitigation measures detailed in the report.

Campo Wind Facilities

This report also describes impacts to biological resources due to implementation of the Campo Wind Facilities on the Reservation, in order to assist the County in complying with its CEQA obligations to review the "whole of the action." The Campo Wind Facilities would be located within a corridor of approximately 2,200 acres of land (Campo Corridor) within the Reservation. Approval of the Campo Wind Facilities on the Reservation falls under the jurisdiction of the Bureau of Indian Affairs (BIA), which is subject to the National Environmental Policy Act (NEPA).

Vegetation mapping, formal jurisdictional delineation, and focused surveys were conducted in 2017 and/or 2018, including Quino checkerspot butterfly surveys on the Reservation. Additional surveys to document avian, eagle, and raptor surveys were completed between 2018 and 2019. This report summarizes the results of Dudek's field work on the Reservation, along with previous studies within the Campo Corridor, and an analysis of potential impacts related to the Campo Wind Facilities.

Twenty vegetation communities and land cover types were mapped by Dudek within the Campo Corridor. Native vegetation communities within the Campo Corridor include big sagebrush scrub, coast live oak woodland (including open and dense forms), emergent wetland, granitic chamise chaparral, granitic northern mixed chaparral, montane buckwheat scrub, mulefat scrub, non-native grassland, non-native grassland broadleaf-dominated, red shank chaparral, scrub oak chaparral, southern coast live oak riparian forest, southern willow scrub, upper Sonoran subshrub scrub, and valley Sacaton grassland. Developed and disturbed habitat, as well as one land cover–unvegetated stream channel, occur within the Campo Corridor.

Dudek biologists detected the following federally protected species within the Campo Corridor during surveys: bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*). While not detected during the 2018 focused surveys, Quino checkerspot butterfly was observed within the Campo Corridor during 2010 focused surveys by AECOM.

The Campo Wind Facilities would result in impacts to approximately 800 acres (789.3 acres) within the Campo Corridor on the Reservation. This includes impacts to 1.13 acres of non-wetland waters of the United States and 0.67 acres of wetlands on site. The Campo Wind Facilities would result in potentially significant direct impacts to special-status wildlife species habitat. Mitigation would include pre-construction monitoring and other best management practices, fire protection, and any necessary federal agency permits. Most significant impacts would be reduced to less than significant with implementation of mitigation measures in accordance with federal requirements. Certain impacts to resources on the Reservation considered sensitive only under state or local law, but not federal law, would remain significant and unmitigated.

Biological Resources Technical Report
Campo Wind Project with Boulder Brush Facilities, San Diego County, California

1 INTRODUCTION

1.1 Purpose of the Report

This report was prepared for the "Campo Wind Project with Boulder Brush Facilities," or "Project" for short. The Project consists of both the Campo Wind Facilities, which would be located on land leased from the Tribe within the Reservation Boundary, and the Boulder Brush Facilities, which would be located on adjacent land leased from a private landowner within the Boulder Brush Boundary. Collectively, all the lands within both the Reservation Boundary and the Boulder Brush Boundary compose the Project Area. The term "On-Reservation" refers to anything within the Reservation Boundary, while the term "Off-Reservation" refers to anything outside of the Reservation Boundary.

The Campo Wind Facilities, which would consist of 60 wind turbines and associated infrastructure, would be located within a corridor of approximately 2,200 acres of land (Campo Corridor) within the approximately 16,000 acres of Reservation land inside the Reservation Boundary. The Boulder Brush Facilities consist of the 3.5-mile Off-Reservation gen-ite line and related facilities to connect energy generated by the Project to the existing San Diego Gas & Electric Company (SDG&E) Sunrise Powerlink. The Boulder Brush Facilities would be located within a corridor of approximately 320 acres of land (Boulder Brush Corridor) located primarily within the approximately 2,000 acres of Private Lease land inside the Boulder Brush Boundary adjacent to the northeast portion of the Reservation; the Boulder Brush Corridor also includes the off-site road improvements. These Private Lease lands are under the land use and permitting jurisdiction of the County. Collectively, the Campo Corridor and the Boulder Brush Corridor compose the approximately 2,520-acre Project Site. The Project disturbance area associated with the construction of the Campo Wind Facilities within the Campo Corridor is expected to be approximately 800 acres, while the Project disturbance area associated with the construction of the Boulder Brush Facilities within the Boulder Brush Corridor is expected to be approximately 130 acres.

The purpose of this full Biological Resources Technical Report is to (1) describe the existing conditions of biological resources as present or potentially present within the Boulder Brush Corridor and Campo Corridor, including vegetation communities, jurisdictional aquatic resources, special-status plants, special-status wildlife, and wildlife movement; (2) discuss potential impacts to biological resources that would result from development of the Project and describe those impacts in terms of biological significance in view of applicable federal, state, and local laws and policies; and (3) recommend mitigation measures to avoid, minimize, and/or mitigate significant impacts.

The Boulder Brush Facilities will comply with federal, state, and local rules and regulations, including the California Environmental Quality Act (CEQA); the County of San Diego's (County) Guidelines for Determining Significance and Report Format and Contents Requirements for Biological Resources (County of San Diego 2010a); the County's Report Format and Contents Requirements for Biological Resources (County of San Diego 2010b); the County's Resource Protection Ordinance (County of San Diego 2012); and various planning documents, including the future East County Multiple Species Conservation Program (MSCP) Plan, and the East County MSCP Planning Agreement between the County, California Department of Fish and Wildlife, and United States Fish and Wildlife Service (County of San Diego 2014).

This report also describes the Campo Wind Facilities proposed on the Reservation. Approval of the Campo Wind Facilities on the Reservation falls under the jurisdiction of the Bureau of Indian Affairs (BIA) and is subject to the National Environmental Policy Act (NEPA). The decision to approve the Boulder Brush Facilities is within the purview of the County of San Diego. When deciding whether to approve a Major Use Permit (MUP) for the Boulder Brush Facilities, the County will use the information included in the EIR to consider potential impacts on the physical environment associated with the Project.

1.2 Project Location and Description

The Boulder Brush Facilities would be located within an approximately 320-acre Boulder Brush Corridor in southeastern San Diego County, California (Figure 1-1, Project Location). This area is on private land in the McCain Valley area, north of the community of Boulevard, and is accessed via Interstate 8 (I-8) and Ribbonwood Road. The Boulder Brush Corridor was identified based on applying an approximately 100-foot buffer to the Boulder Brush Facilities. These areas are located within the overall Boulder Brush Boundary, composed of Assessor's Parcel Numbers (APNs) 528-220-02, 528-220-03, 529-050-01, 529-060-01, 529-090-02, 529-090-03, 529-100-02, 529-100-03, 529-120-01, 529-120-03, 529-130-01, 611-010-01, 611-010-02, 611-010-03, 611-020-01, 611-050-04, 611-050-05, and 529-100-01.

The area surrounding the Boulder Brush Boundary includes lands administered by Bureau of Indian Affairs, Bureau of Land Management (BLM), and private lands. The 500 kV Sunrise Powerlink traverses the northeast portion of the Boulder Brush Boundary. Wind turbines associated with Tule Wind Project are located on land to the northwest, north and east of the Boulder Brush Boundary (Figure 1-2, Proposed Project and Existing Projects). Other nearby wind projects include the Kumeyaay Wind Energy Project, which is located southwest of the Boulder Brush Boundary.

The Boulder Brush Facilities include the following components: 3.5 mile off-Reservation gen-tie line, a high voltage substation, 500 kV switchyard and connection to the existing SDG&E Sunrise Powerlink, associated access roads, and defensible space (fuel modification zones). These transmission and interconnection facilities would be built to support the Campo Wind Facilities located on the Reservation.

The Campo Wind Facilities would be located on the Reservation. The Reservation is located in the southern Laguna Mountains and surrounded by the unincorporated communities of Campo, Boulevard, and Live Oak Springs (Figure 1-1). The Reservation covers approximately 16,000 acres and includes lands both north and south of I-8 along the Tecate Divide, and extends from the Manzanita Indian Reservation south to approximately 0.25-mile from the Mexico/U.S. international border. The approximately 2,200-acre Campo Corridor is comprised of lands to be leased from the Campo Band of Diegueño Mission Indians (Tribe) (Figure 1-2). The Campo Corridor is surrounded by low-density rural commercial and residential developments throughout the Reservation and nearby communities; Church Road and I-8 bisect the Campo Corridor.

Further description of Project components is provided in Chapter 1, Project Description, Location, and Environmental Setting, of the Environmental Impact Report (EIR).

Prior to decommissioning of Boulder Brush Facilities, a decommissioning plan would be prepared and implemented. The decommissioning plan shall include revegetation of the previously disturbed areas. Soil would be revegetated with native plant species found within adjacent habitats. Locally available seed would be used, and seed from species that are unavailable for collection would not be incorporated into the final seed palette.

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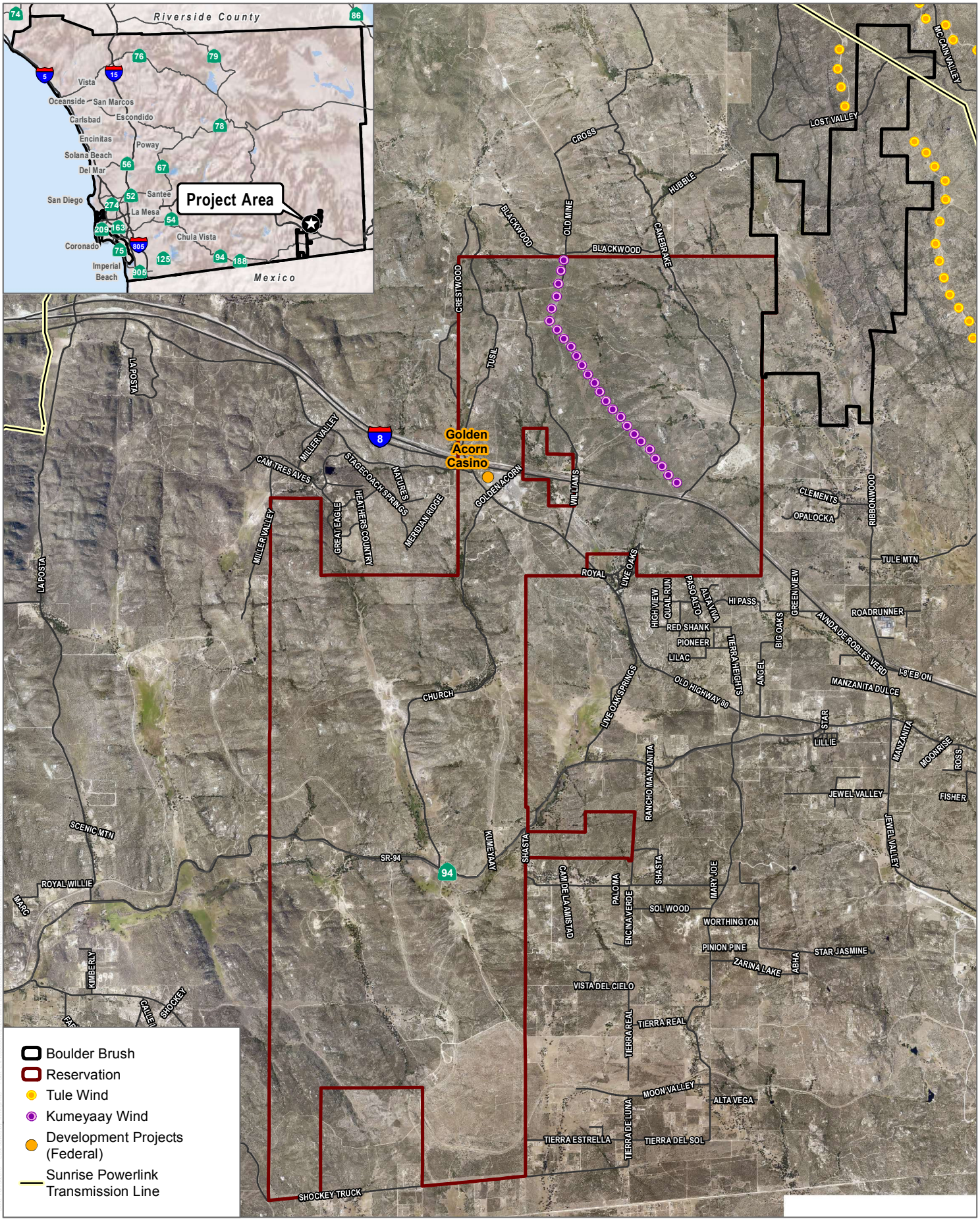

SOURCE: SANGIS 2017

FIGURE 1-1

Project Location

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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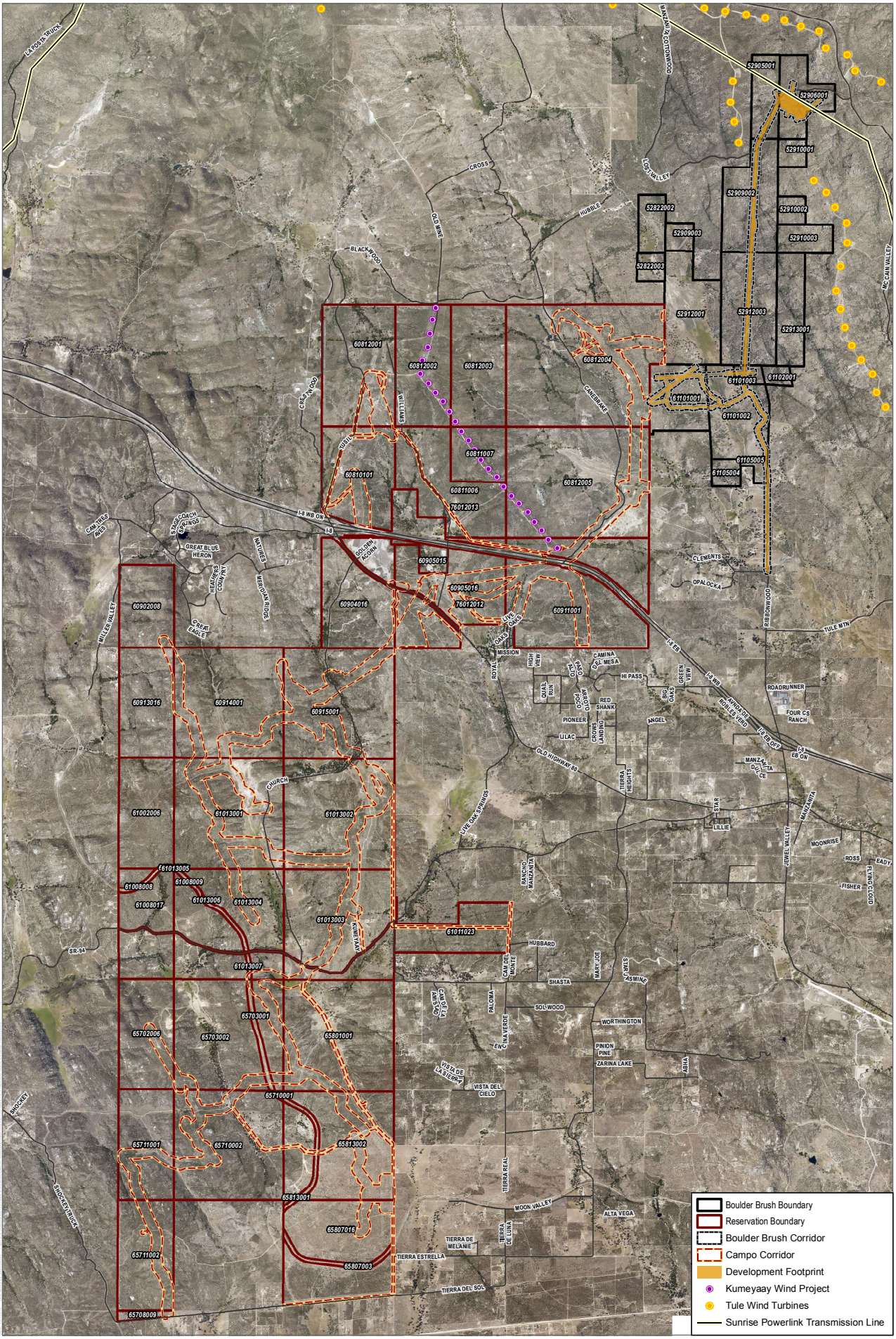

FIGURE 1-2

Proposed Project and Existing Projects

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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2 APPLICABLE REGULATIONS

2.1 Federal

Federal regulations are applicable to the Boulder Brush Facilities on private land under County jurisdiction and the Campo Wind Facilities on the Reservation.

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) (16 USC 1531 et seq.) is implemented by the U.S. Fish and Wildlife Service (USFWS) for protection of various species of freshwater fish, terrestrial wildlife, and plants deemed to be in danger of or threatened with extinction. As part of this regulatory act, FESA provides for designation of critical habitat, defined in FESA Section 3(5)(A) as specific areas within the geographical range occupied by a species where physical or biological features "essential to the conservation of the species" are found and that "may require special management considerations or protection." Critical habitat may also include areas outside the current geographical area occupied by the species that are nonetheless "essential for the conservation of the species." The Project site does not overlap within any critical habitat (Figure 2-1, USFWS Critical Habitat).

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). In December 2017, Department of Interior Principal Deputy Solicitor Jorjani issued a memorandum (M-37050) that interprets the MBTA to only prohibit intentional take. Unintentional or accidental take is not prohibited. Additionally, Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 Federal Register 3853–3856). The executive order requires federal agencies to work with USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect these species.

2.1.3 Clean Water Act

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into "waters of the United States." The term "wetlands" (a subset of waters of the United States) is defined in 33 Code of Federal Regulations 328.3(c)(4) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a

prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the "ordinary high water mark," which is defined in 33 Code of Federal Regulations 328.3(c)(6).

2.1.4 Bald and Golden Eagle Protection Act

Bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected under the Bald and Golden Eagle Protection Act, passed in 1940 to protect bald eagle and amended in 1962 to include golden eagle (16 USC 668a–d). The Bald and Golden Eagle Protection Act (16 USC 668–668d) prohibits the take, possession, sale, purchase, barter, offering to sell or purchase, export or import, or transport of bald eagles and golden eagles and their parts, eggs, or nests without a permit issued by USFWS. The definition of "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The act prohibits any form of possession or taking of both eagle species, and the statute imposes criminal and civil sanctions as well as an enhanced penalty provision for subsequent offenses. Further, the act provides for the forfeiture of anything used to acquire eagles in violation of the statute. The statute exempts from its prohibitions on possession the use of eagles or eagle parts for exhibition, scientific, and Native American religious uses.

However, there is allowance within the act that, after investigation, the Secretary of the Interior may determine that direct and purposeful taking is compatible with the preservation of bald eagle or golden eagle. If so, then the Secretary may permit the taking, possession, and transportation of specimens for the scientific or exhibition purposes of public museums, scientific societies, and zoological parks, or for the religious purposes of Native American tribes. The Secretary of the Interior may also determine that it is necessary to permit the taking of eagles for the protection of wildlife or of agricultural or other interests in any particular locality. This permitting may be for the seasonal protection of domesticated flocks and herds, and may also permit the taking, possession, and transportation of golden eagles for the purposes of falconry if the eagles may cause depredations on livestock or wildlife. Finally, the Secretary of the Interior may permit the taking of golden eagle nests that interfere with resource development or recovery operations, or in an emergency.

In November 2009, USFWS published the Final Eagle Permit Rule (74 Federal Register 46836–46879) providing a mechanism to permit and allow for incidental (i.e., non-purposeful) take of bald and golden eagles pursuant to the Bald and Golden Eagle Protection Act (16 USC 668 et seq.). Disturb means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or

sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." These regulations may apply to projects such as wind turbines and transmission lines, and were followed by issuance of guidance documents for inventory and monitoring protocols and for avian protection plans (Pagel et al. 2010). On December 14, 2014 the USFWS released a final rule revising the regulations for permits for incidental take of eagles and take of eagle nests. The Service analyzed various alternative management options and rule revisions, including the final rule revisions, in a programmatic environmental impact statement (PEIS). Among other revisions, the final rule addresses criteria for permit issuance, compensatory mitigation requirements, permit duration, and data standards for submitting permit applications. More recently, The Bald Eagle And Golden Eagle Electrocution Prevention In-lieu Fee Program (Eagle ILF Program) was authorized by the USFWS to sell compensatory mitigation credits for bald and golden eagles to utilities. The Eagle ILF Program is the only mitigation banking option currently available specific to eagles and authorized by USFWS to offset incidental take. In February 2011, USFWS released Draft Eagle Conservation Plan Guidance aimed at clarifying expectations for acquiring take permits acquisition by wind power projects consistent with the 2009 rule (USFWS 2011).

2.1.5 U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines

The USFWS and the Wind Turbine Guidelines Advisory Committee developed voluntary Guidelines as part of a system for evaluating and addressing the potential negative impacts of wind energy projects on species of concern. Although the Guidelines expired December 31, 2014, they continue to be voluntarily followed by many in the industry. The Guidelines provide a structured, scientific process for addressing wildlife conservation concerns at all stages of land-based wind energy development. They also promote effective communication among wind energy developers and federal, state, and local conservation agencies and tribes. When used in concert with appropriate regulatory tools, the Guidelines form the best practical approach for conserving species of concern. The Guidelines assist developers in identifying listed, proposed, or candidate endangered and threatened species.

2.1.6 Campo Band of Mission Indians Land Use Plan

The Campo Band of Mission Indians has adopted a land use plan (Campo Band of Mission Indians 2010) to guide future development on the Reservation in accordance with the Band's goals. Under the Campo Lease, the following Tribal regulations and plans are not applicable to

the Campo Wind Facilities, but are described below for informational purposes. The Land Use Plan identifies the following biological resources on the Reservation:

- The New Reservation contains significant stands of oak woodlands. Land use activities shall preserve such woodlands to the maximum extent feasible.
- Riparian habitat, consisting of scattered willows, baccharis, the Tecate tarplant, and ruderals such as eastern cocklebur, dog mayweed, salt heliotrope, and hoary nettle, exists to some degree along Campo Creek and Diabold Creek and is to be preserved to the maximum extent feasible.
- Rare, threatened, and endangered plants and threatened, endangered, and sensitive wildlife will be afforded the necessary protection and preservation as required.

The land use plan also designates wilderness protection areas along the western side of the Reservation and the northern area of the Reservation, which are areas to remain in their natural state to the maximum extent feasible. The land use plan also notes a goal to improve infrastructure, including the electric power grid service. The overall intent of the land use plan is to provide balanced development and conservation. The land use Plan also identifies that the Campo Environmental Protection Agency is to be involved in development projects when the proposed use may potentially affect the environment of the Reservation.

2.2 State

State regulations are applicable to the Boulder Brush Facilities on private land under the County's jurisdiction. State regulations are not applicable to the Campo Wind Facilities on the Reservation.

2.2.1 California Endangered Species Act

California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA) (California Fish and Game Code (CFGC) Section 2050 et seq.), which prohibits the "take" of plant and animal species designated by the California Fish and Game Commission as endangered or threatened in California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

CFGC Sections 3511, 4700, and 5515 designate certain birds, mammals, and fish as "fully protected" species. These species may not be taken or possessed without a permit from the Fish and Game Commission, and such take may only occur pursuant to scientific research or in connection with an authorized Natural Communities Conservation Plan (NCCP). No "incidental take" of fully protected species is allowed.

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (CFGC Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)."

CFGC Section 2081(b) and (c) authorizes take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. In such cases, CDFW issues the applicant an incidental take permit, which functions much like an incidental take statement in the federal context. CDGC Sections 2081(b) and (c) also require CDFW to coordinate consultations with USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, Section 2080.1 of CESA allows CDFW to adopt a federal incidental take statement or a 10(a) permit as its own, based on its findings that the federal permit adequately protects the species and is consistent with state law. CDFW may not issue a Section 2081(b) incidental take permit for take of "fully protected" species. The California Fish and Game Code lists the fully protected species in Section 3511 (birds), Section 4700 (mammals), Section 5050 (reptiles and amphibians), and Section 5515 (fish).

2.2.2 California Fish and Game Code

Streambed Alteration Agreement

Pursuant to CFGC Section 1602, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A Streambed Alteration Agreement (CFGC Section 1602 et seq.) is required for impacts to jurisdictional aquatic resources, including streambeds and associated riparian habitat.

Birds and Mammals

According to CFGC Sections 3511 and 4700, which regulate birds and mammals, a fully protected species may not be taken or possessed. CDFW may not authorize the take of such species except for necessary scientific research, for the protection of livestock, and when the take occurs for fully protected species within an approved NCCP.

California Fish and Game Code

The California Fish and Game Code provides protection for wildlife species. It states that no mammals, birds, reptiles, amphibians, or fish species listed as fully protected can be "taken or possessed at any time." In addition, CDFW affords protection over the destruction of nests or eggs of native bird species (CFGC Section 3503), and it states that no birds in the orders of Falconiformes or Strigiformes (birds of prey) can be taken, possessed, or destroyed (CFGC Section 3503.5). CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (CFGC Section 3511). Separate from federal and state designations of species, CDFW designates certain vertebrate species as Species of Special Concern based on declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 (CFGC Section 1900–1913) directed CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare," and to protect endangered and rare plants from take. When CESA was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of "threatened" and "endangered" species to parallel FESA. CESA categorized all rare animals as threatened species under CESA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and project proponents.

2.2.3 Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act protects water quality and the beneficial uses of water. It applies to surface water and groundwater. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the Regional Water Quality Control Boards (RWQCBs) develop regional basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of statewide plans and basin plans. Waters regulated under the Porter–Cologne Water Quality Control Act include isolated waters that are no longer regulated by USACE. Developments with impacts to jurisdictional waters must demonstrate compliance with the goals of the act by developing Stormwater Pollution

Prevention Plans (SWPPPs), standard urban stormwater mitigation plans, and other measures to obtain regulatory permits from the RWQCB.

2.2.4 California Environmental Quality Act

CEQA requires identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guideline 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors". A rare animal or plant is defined in CEQA Guideline 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guideline 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

2.3 Regional and Local

County regulations are applicable to the Boulder Brush Facilities on private land under the County's jurisdiction. County regulations are not applicable to the Campo Wind Facilities on the Reservation.

2.3.1 Future East County Multiple Species Conservation Program Plan

The County has prepared a preliminary planning map for the future East County Multiple Species Conservation Program (MSCP) Plan. The intent of preparing the East County Plan is to create a large, connected preserve system that addresses the regional habitat needs for multiple species. The future East County MSCP Plan would cover approximately 1.6 million acres within the eastern unincorporated portion of the San Diego County. The Cleveland National Forest is located along the western boundary of the East County MSCP Plan area. The East County MSCP Plan area is bounded by Riverside County to the north, Imperial County on the east, and Mexico to the south. Tribal lands will be excluded from the East County MSCP Plan. Preparation of a future East County MSCP Plan is a cooperative effort among the County of San Diego, USFWS, and CDFW. The future East County MSCP Plan currently has no schedule for completion. Authority for this

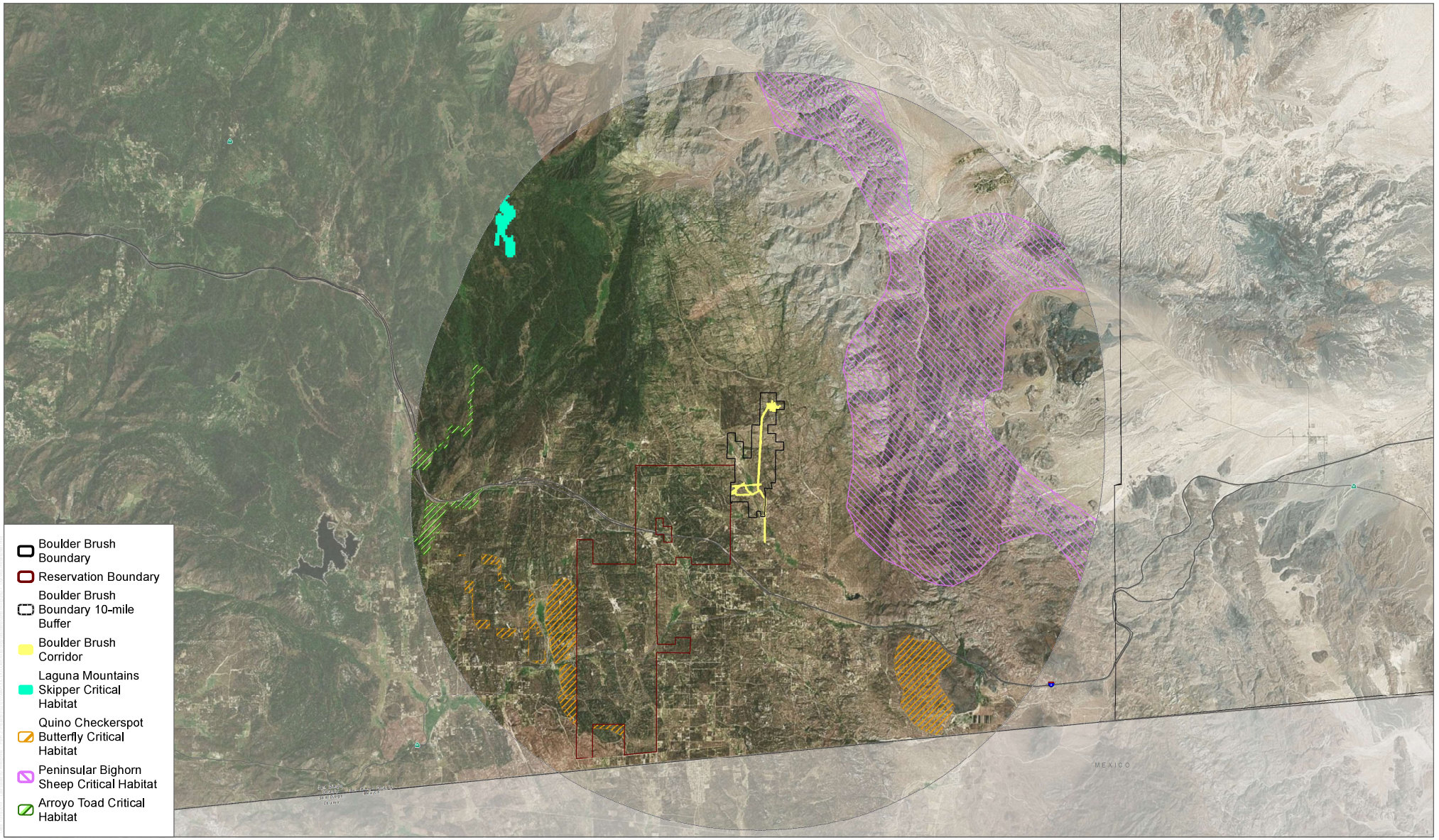
process comes from the California Natural Community Conservation Planning Act and Section 10(a) of FESA that addresses habitat conservation plans.

The Boulder Brush Boundary is located within the East County MSCP Plan area (Figure 2-2, Regional Planning). Projects in this area are subject to the Planning Agreement for the East County MSCP (County of San Diego 2014), which is intended to determine if project approval would have an effect on the preparation and approval of the future East County MSCP. A Preliminary Planning Map has been completed for the East County MSCP. According to this map, the Boulder Brush Boundary falls partially within a preliminarily delineated Focused Conservation Area of the draft East County MSCP Planning area, which suggests that the area has regional conservation value (Figure 2-2).

The Planning Agreement outlines Preliminary Conservation Objectives for the East County MSCP (County of San Diego 2014) and focal species. In addition to the preliminary conservation objectives, the Planning Agreement for the future East County MSCP Plan identifies an interim project review process, including a set of preserve design principles that interim projects are evaluated against during the period when the East County MSCP Plan is in preparation. The Planning Agreement is in effect until January 2020.

2.3.2 County Resource Protection Ordinance

The Resource Protection Ordinance (RPO), administered by the County, regulates biological and other natural resources within the County. These resources include wetlands, wetland buffers, floodways, floodplain fringe, steep slope lands, sensitive habitat lands, and significant prehistoric or historic sites. The RPO stipulates that no impacts may occur to wetlands except for scientific research; removal of diseased or invasive exotic plant species; wetland creation and habitat restoration; revegetation and management projects; and crossings of wetlands for roads, driveways, or trails/pathways when certain conditions are met. The same exemptions apply to impacts to wetland buffer areas and improvements necessary to protect adjacent wetlands. Sensitive habitat lands are unique vegetation communities, and support sensitive species, lands essential to the healthy functioning of a balanced natural ecosystem, and wildlife corridors. Impacts to sensitive habitat lands may be allowed "when all feasible measures necessary to protect and preserve the sensitive habitat lands are required as a condition of permit approval and where mitigation provides an equal or greater benefit to the affected species" (County of San Diego 2012).



SOURCE: USFWS 2018; BING Maps 2018

DUDEK

0 1 2 Miles

FIGURE 2-1

USFWS Critical Habitat

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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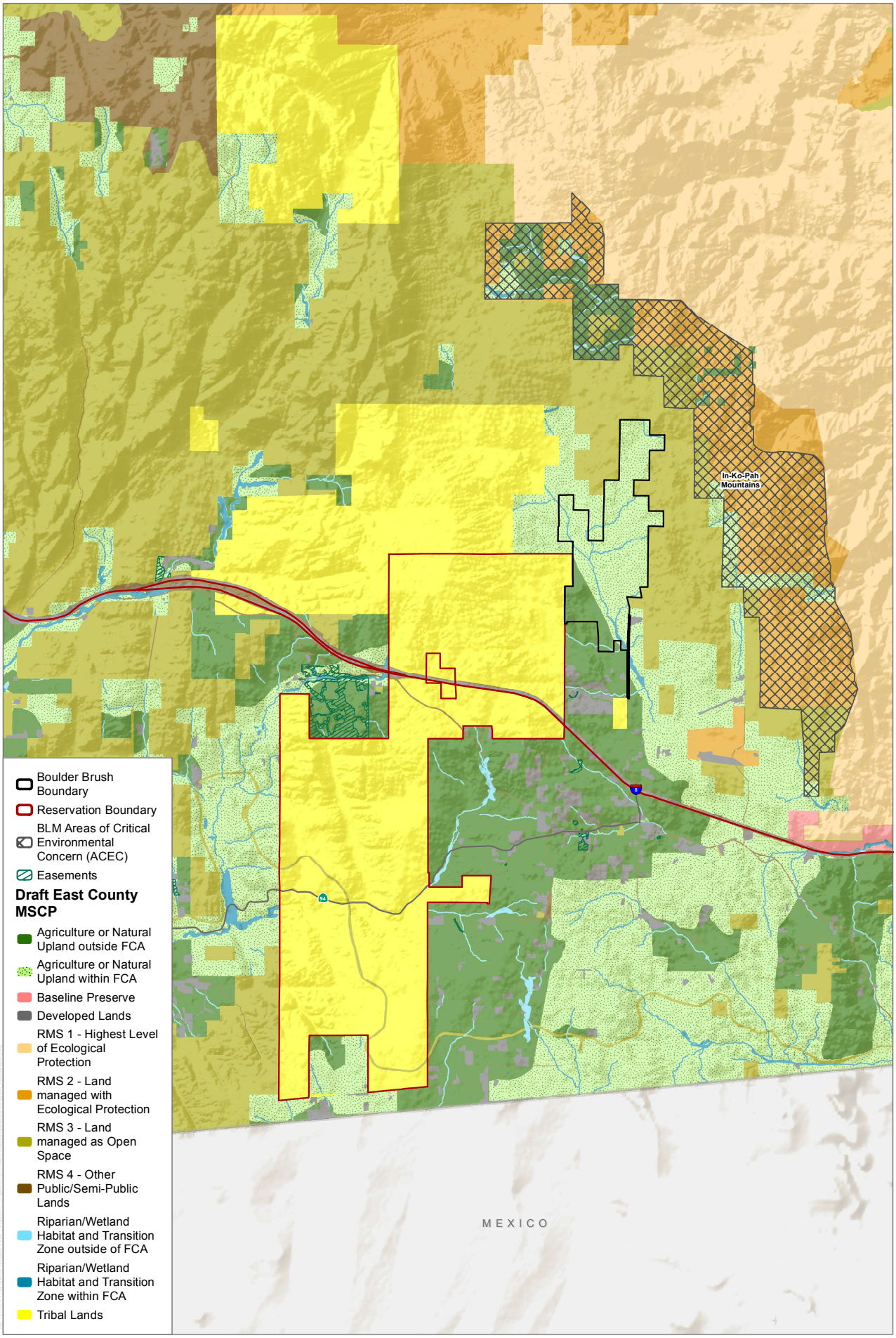

SOURCE: BLM 2018; ESRI 2018; SANGIS 2019

DUDEK

0 3,875 7,750 Feet

FIGURE 2-2

Regional Planning

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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3 SURVEY METHODOLOGIES

3.1 Literature Review

Special-status plant and wildlife species present or potentially present within the Boulder Brush Corridor were identified through an extensive literature search using the following sources: USFWS Critical Habitat and Occurrence Data (USFWS 2018a), CDFW's California Natural Diversity Database (CDFW 2018a), California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants (CNPS 2018), and the San Diego Plant Atlas (SDNHM 2018). The literature review also included review of species considered sensitive by the County of San Diego (County of San Diego 2010a). The Soil Survey, San Diego Area, California Part 1 (Bowman 1973) also was reviewed to identify potentially occurring special-status plants based on known soil associations. Native plant community classifications used in this report follow Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) as modified by the County and noted in Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). Data collected in support of the previously analyzed Jewell Valley Wind Project, which overlaps with the current Boulder Brush Corridor, was also reviewed and used for purposes of determining presence of special-status plant and wildlife species.

For the Campo Wind Facilities, the previous work conducted by AECOM in 2010 that overlaps with the current Campo Corridor was reviewed and incorporated into this report where appropriate. The *Campo Wind Project Biological Technical Report* (Appendix H to the Campo Environmental Impact Statement (EIS)) details the methods for the surveys covering the Campo Corridor.

3.2 Field Reconnaissance

3.2.1 Boulder Brush Corridor

Dudek conducted the following surveys for the Boulder Brush Facilities in 2017, 2018, and/or 2019:

- Spring season rare plant surveys (two seasons) (Figure 3-1)
- Late season rare plant surveys with a focus on tecate tarplant (*Deinandra floribunda*) (two seasons) (Figure 3-1)
- Hermes copper (*Lycaena hermes*) habitat assessments (specific search for host plant spiny red berry (*Rhamnus crocea*)) (Figure 3-1)
- Laguna Mountain skipper (*Pyrgus ruralis lagunae*) habitat assessments (specific search for host plant Cleveland's horkelia (*Horkelia clevelandii*)) (Figure 3-1)

- Quino checkerspot (*Euphydryas editha quino*) habitat assessments and focused surveys Figures 3-2 and 3-3)
- Vegetation mapping (Figure 3-1)
- Golden eagle (*Aquila chrysaetos canadensis*) habitat assessment (Figure 3-1)
- Bird utilization counts and small bird counts (Figure 3-1)
- Raptor surveys (Figure 3-1)
- Least Bell's vireo (*Vireo bellii pusillus*) southwestern willow flycatcher (*Empidonax traillii extimus*) habitat assessment and focused surveys (Figure 3-5)
- Peninsular bighorn sheep (*Ovis canadensis nelsoni*) focused surveys (Figure 3-1)
- Jurisdictional delineation within the Boulder Brush Corridor (Figure 3-1)

Dudek conducted the following surveys within the Boulder Brush Boundary between 2011 and 2012 for the previous Jewell Valley Wind Project, which was proposed by a different applicant (Figure 3-5). Although the development footprint and survey areas varied from the currently proposed Project, they provide valuable data regarding the potential for special-status wildlife to occur within the Boulder Brush Corridor.

- Quino checkerspot (*Euphydryas editha quino*) habitat assessments and focused surveys (2011 only) (Figure 3-5)
- Acoustical bat surveys (Figure 3-5)
- Raptor surveys (Figure 3-5)

Table 3-1, Schedule of Surveys, lists the dates, conditions, and survey focus for each survey performed. This table, as well as the list of surveys above, include surveys conducted for a separate proposed wind energy project (Torrey Wind) that is also proposed within the Boulder Brush Boundary. Surveys for the Torrey Wind Project are thus relevant for the Boulder Brush Facilities. All field surveys within the Boulder Brush Boundary were completed according to County Requirements and included directed searches and habitat assessments for the County list of potential special-status faunal and floral species. The surveys were conducted by personnel qualified to perform biological surveys (i.e., Quino checkerspot butterfly protocol surveys were conducted by biologist with a Section 10(a)(1)(A) survey permit for that species). Special-status biological resources were mapped and analyzed together.

Within the Boulder Brush Corridor, focused surveys or wildlife habitat assessments were performed for the following wildlife species: southwestern willow flycatcher, Quino checkerspot butterfly, Peninsular bighorn sheep, Cooper's hawk, sharp-shinned hawk (*Accipiter striatus*), rufous-crowned sparrow, grasshopper sparrow, Bell's sage sparrow (*Artemisiospiza belli belli*), Peninsular metalmark, golden eagle, red-shouldered hawk, turkey vulture, large-blotched salamander, Lewis' woodpecker, purple martin, alkali skipper, and gray vireo. The County's scoping letter for the proposed Project also identified plant species that require focused surveys (County of San Diego 2017).

Since the Boulder Brush Corridor is located outside of the species' known current geographic range for arroyo toad, Stephens' kangaroo rat, California red-legged frog (USFWS 2019a, 2019b, 2019c; Tremor et al. 2007), focused surveys for were not conducted for these species. In addition, the Boulder Brush Corridor does not support the suitable habitat for the following species; therefore, focused surveys were not conducted: Laguna Mountain skipper (host plants were not detected), tricolored blackbird (site lacks freshwater wetland or any cattle/stock ponds). A habitat assessment was completed to determine the potential for grasshopper sparrow and gray vireo to occur within the Boulder Brush Corridor.

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
Vegetation Mapping and Jurisdictional Delineation				
2018-06-06	8:20 AM–6:12 PM	EJB	VEG	75–76°F; 0% cloud cover; 0–4 mph wind
2018-06-07	9:15 AM–4:51 PM	EJB, MF	VEG	75–84°F; 0% cloud cover; 0–5 mph wind
2018-06-08	10:16 AM–4:30 PM	LM	VEG	70–80°F; 0% cloud cover; 1–3 mph wind
2018-06-11	6:19 AM–7:07 PM	EJB	VEG	66–77°F; 0–60% cloud cover; 0–2 mph wind
2018-06-12	7:04 AM–3:28 PM	EJB	VEG	64–82°F; 0% cloud cover; 0–1 mph wind
2018-06-20	8:56 AM–4:57 PM	CJA, PCS	JD	82–90°F; 0% cloud cover; 0–2 mph wind
2018-07-03	7:40 AM–2:18 PM	CJA, JM, LM, PCS	JD	80–87°F; 0% cloud cover; 0–1 mph wind
2018-07-05	8:00 AM–2:13 PM	CJA, MF	JD	87–97°F; 0% cloud cover; 0–1 mph wind
2018-09-06	6:28 AM–5:07 PM	EJB	VEG, JD	57–80°F; 0%-100% cloud cover; 0–8 mph wind
2019-06-27	3:30 PM-4:30 PM	OK	JD (additional areas)	80°F, 10% cloud cover, 5–10mph
Rare Plant Survey				
2017-05-11	10:14 AM–12:00 PM	EJB	RP	Air Temp: 73–76°F; Ground Temp: 77°F; 0% cloud cover; 0–1 mph wind; Clear
2017-05-17	9:11 AM–5:27 PM	EJB, JW, ME	RP	59–66°F; 80–100% cloud cover; 0–3 mph wind
2017-05-18	8:19 AM–4:12 AM	EJB, JM, JW, ME, SCG	RP	59–76°F; 0% cloud cover; 0–3 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2017-05-19	8:18 AM–2:18 PM	EJB, ME, SCG	RP	60–78°F; 0–90% cloud cover; 0–3 mph wind
2017-07-17	7:50 AM–2:35 PM	EJB, KCD	RP	77–96°F; 0–30% cloud cover; 1–10 mph wind
2017-07-18	6:50 AM–1:00 PM	EJB, MO	RP	71–91°F; 0–10% cloud cover; 0–3 mph wind
2017-07-21	6:43 AM–12:30 PM	EJB, KCD	RP	62–95°F; 0% cloud cover; 1–5 mph wind
2017-07-26	6:11 AM–11:42 AM	EJB	RP	55–89°F; 0–20% cloud cover; 0–3 mph wind
2017-07-27	6:20 AM–11:30 AM	EJB, KCD	RP	68–91°F; 0–10% cloud cover; 0–2 mph wind
2018-05-08	7:00 AM–5:04 PM	EJB	RP	62–78°F; 0–20% cloud cover; 0–1 mph wind
2018-05-10	6:44 AM–6:18 PM	EJB	RP	60–87°F; 0–100% cloud cover; 0–1 mph wind
2018-05-11	7:21 AM–4:14 PM	EJB	RP	65–70°F; 0–40% cloud cover; 0–1 mph wind
2018-05-12	7:41 AM–5:28 PM	EJB	RP	61–67°F; 0–70% cloud cover; 0–1 mph wind
2018-05-13	8:38 AM–5:49 PM	EJB	RP	67–70°F; 10% cloud cover; 0–2 mph wind
2018-05-15	7:32 AM–5:34 PM	EJB	RP	60–71°F; 0–40% cloud cover; 0–1 mph wind
2018-05-16	8:44 AM–4:20 PM	EJB, LM	RP	67–74°F; 20–30% cloud cover; 0–1 mph wind
2018-05-17	8:23 AM–4:17 PM	EJB, LM	RP	64–69°F; 50–70% cloud cover; 0–3 mph wind
2018-05-18	7:43 AM–2:02 PM	EJB, MF	RP	68–75°F; 10–20% cloud cover; 0–2 mph wind
2018-05-24	8:03 AM–5:10 PM	EJB, MF	RP	65–75°F; 0% cloud cover; 0–2 mph wind
2018-05-25	8:14 AM–1:58 PM	EJB, LM	RP	71–78°F
2018-06-01	7:49 AM–5:19 PM	EJB, LM	RP	69–74°F; 0–60% cloud cover; 0–1 mph wind
2018-08-01	7:09 AM–3:07 PM	EJB	RP	68–95°F; 0–10% cloud cover; 0–2 mph wind
2018-08-02	9:06 AM–3:58 PM	EJB	RP	75–105°F; 0–20% cloud cover; 0–4 mph wind
2018-08-03	7:49 AM–3:56 PM	EJB	RP	75–108°F; 0–10% cloud cover; 0–4 mph wind
Quino Checkerspot Butterfly Habitat Assessment and Focused Surveys				
2011-03-11 to 2011-04-10	Varied	Dudek and subconsultants	QCB for Jewell Valley Wind Project	Varied[a]
2018-02-16 to 2018-04-06	Varied	Dudek and subconsultants	QCB	Varied[b]
2019-03-15 to 2019-05-13	Varied	Dudek and subconsultants	QCB	Varied[c]
All-Day Eagle Counts and 30-Minute Avian Point Counts				
2017-09-08	9:49 AM–4:48 PM	MF, SC	30-Minute Point Counts	75–95°F; 50–100% cloud cover; 0–5 mph wind
2017-09-14	7:23 AM–4:57 PM	KS	30-Minute Point Counts	53–74°F; 0% cloud cover; 0–30 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2017-09-22	11:03 AM–5:44 PM	SC	30-Minute Point Counts	55–75°F; 0–10% cloud cover; 1–12 mph wind
2017-09-25	7:27 AM–2:13 PM	KS	30-Minute Point Counts	55–75°F; 0–50% cloud cover; 0–15 mph wind
2017-10-02	8:29 AM–3:15 PM	KS	30-Minute Point Counts	57–75°F; 0% cloud cover; 0–15 mph wind
2017-10-09	9:33 AM–6:01 PM	SC	30-Minute Point Counts	61–69°F; 0% cloud cover; 0–22 mph wind
2017-10-16	9:30 AM–5:04 PM	SC	30-Minute Point Counts	79–87°F; 0% cloud cover; 0–12 mph wind
2017-10-27	7:59 AM–2:07 PM	MF	30-Minute Point Counts	67–86°F; 0–10% cloud cover; 0–7 mph wind
2017-10-30	7:35 AM–2:16 PM	KS, OK	30-Minute Point Counts	46–66°F; 0–10% cloud cover; 0–20 mph wind
2017-11-06	6:40 AM–1:28 PM	KS, OK	30-Minute Point Counts	54–69°F; 10–90% cloud cover; 1–10 mph wind
2017-11-13	7:27 AM–1:09 PM	KS	30-Minute Point Counts	60–78°F; 60–100% cloud cover; 0–7 mph wind
2017-11-20	7:08 AM–3:03 PM	SC, OK	30-Minute Point Counts	43–80°F; 20–40% cloud cover; 0–12 mph wind
2017-11-27	7:07 AM–1:40 PM	SC, OK	30-Minute Point Counts	57–61°F; 70–100% cloud cover; 2–20 mph wind
2017-12-07	7:16 AM–1:41 PM	MF	30-Minute Point Counts	45–59°F; 0% cloud cover; 2–30 mph wind
2017-12-21	7:17 AM–2:32 PM	OK	30-Minute Point Counts	38–48°F; 0% cloud cover; 0–6 mph wind
2017-12-29	7:28 AM–2:35 PM	OK	30-Minute Point Counts	52–78°F; 0% cloud cover; 0–3 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2018-01-02	8:00 AM–4:00 PM	SC	30-Minute Point Counts	61–69°F; 10% cloud cover; 0–15 mph wind
2018-05-15	10:10 AM–5:52 PM	FM	All-Day Eagle Counts	71–77°F; 0–10% cloud cover; 0–25 mph wind
2018-05-16	9:05 AM–5:03 PM	FM	All-Day Eagle Counts	71–83°F; 0% cloud cover; 4–26 mph wind
2018-05-17	8:23 AM–4:18 PM	FM	All-Day Eagle Counts	60–75°F; 0% cloud cover; 4–25 mph wind
2018-05-21	8:20 AM–4:14 PM	FM	All-Day Eagle Counts	56–75°F; 0–20% cloud cover; 3–21 mph wind
2018-05-22	8:13 AM–4:14 PM	FM	All-Day Eagle Counts	62–85°F; 0–10% cloud cover; 0–15 mph wind
2018-05-23	8:18 AM–4:04 PM	FM	All-Day Eagle Counts	73–78°F; 0–10% cloud cover; 1–14 mph wind
2018-05-24	9:50AM–6:37 PM	FH	All-Day Eagle Counts	62–88°F; 0%–20% cloud cover; 1–19 mph wind
2018-05-31	6:32 AM–12:43 PM	KS	30-Minute Point Counts	54–76°F; 0–40% cloud cover; 0–30 mph wind
2018-06-01	7:55 AM–3:50 PM	AC	All-Day Eagle Counts	68–80°F; 0% cloud cover; 4–16 mph wind
2018-06-04	8:14 AM–4:21 PM	FM	All-Day Eagle Counts	84–97°F; 10–20% cloud cover; 1–12 mph wind
2018-06-07	6:20 AM–12:32 PM	KS	30-Minute Point Counts	53–84°F; 0% cloud cover; 0–22 mph wind
2018-06-07	8:50 AM–5:18 PM	FM	All-Day Eagle Counts	74–78°F; 0% cloud cover; 3–19 mph wind
2018-06-08	8:00 AM–4:00 PM	SC	All-Day Eagle Counts	74–91°F; 0% cloud cover; 5–15 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2018-06-11	8:45 AM–4:06 PM	FM	All-Day Eagle Counts	74–86°F; 0–10% cloud cover; 1–14 mph wind
2018-06-12	9:45 AM–5:45 PM	FM	30-Minute Point Counts	83–94°F; 10–30% cloud cover; 1–15 mph wind
2018-06-13	8:24 AM–4:00 PM	FM	All-Day Eagle Counts	81–91°F; 10–20% cloud cover; 2–18 mph wind
2018-06-18	8:40 AM–4:31 PM	FM	All-Day Eagle Counts	63–88°F; 0% cloud cover; 2–13 mph wind
2018-06-19	9:30 AM–5:17 PM	FM	30-Minute Point Counts	80–89°F; 0% cloud cover; 0–11 mph wind
2018-06-20	8:40 AM–4:46 PM	FM	All-Day Eagle Counts	76–95°F; 10% cloud cover; 4–17 mph wind
2018-06-21	8:30 AM–4:31 PM	FM	All-Day Eagle Counts	75–94°F; 10% cloud cover; 2–15 mph wind
2018-06-25	8:45 AM–4:10 PM	FM	All-Day Eagle Counts	79–93°F; 0% cloud cover; 2–15 mph wind
2018-06-26	9:25 AM–4:40 PM	FM	30-Minute Point Counts	84–95°F; 0% cloud cover; 2–17 mph wind
2018-06-27	8:30 AM–4:35 PM	FM	All-Day Eagle Counts	73–90°F; 0% cloud cover; 6–23 mph wind
2018-06-28	8:13 AM–4:29 PM	FM	All-Day Eagle Counts	76–87°F; 0% cloud cover; 2–27 mph wind
2018-07-02	7:20 AM–1:10 PM	SC	30-Minute Point Counts	68–94°F; 0–20% cloud cover; 2–19 mph wind
2018-07-12	6:55 AM–12:45 PM	KS	30-Minute Point Counts	70–87°F; 0–30% cloud cover; 0–10 mph wind
2018-07-16	9:53 AM–3:46 PM	RM, OK	30-Minute Point Counts	88.5–95°F; 10–90% cloud cover; 0–8 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2018-07-26	9:30 AM–3:50 PM	FM	30-Minute Point Counts	93–96°F; 0–40% cloud cover; 1–14 mph wind
2018-08-03	11:28 AM–5:47 PM	FM	30-Minute Point Counts	88–98°F; 10% cloud cover; 8–12 mph wind
2018-08-09	11:15 AM–5:20 PM	FM	30-Minute Point Counts	84–88°F; 50–90% cloud cover; 3–9 mph wind
2018-09-05	12:00 PM–7:00 PM	FM	30-Minute Point Counts	74–84°F; 10% cloud cover; 2–3 mph wind
2018-09-11	11:00 AM–6:12 PM	FM	30-Minute Point Counts	74–84°F; 0% cloud cover; 2–14 mph wind
2018-09-18	8:00 AM–2:04 PM	KS	30-Minute Point Counts	77–90°F; 0% cloud cover; 1–8 mph wind
2018-09-27	8:06 AM–2:45 PM	SC	30-Minute Point Counts	65–92°F; 0% cloud cover; 0–9 mph wind
2018-10-02	8:00 AM–4:00 PM	PL	All-Day Eagle Counts	64–73°F; 50–90% cloud cover; 1–16 mph wind
2018-10-04	8:02 AM–4:00 PM	PL	All-Day Eagle Counts	58–70°F; 70–90% cloud cover; 2–18 mph wind
2018-10-05	8:00 AM–4:00 PM	PL	All-Day Eagle Counts	55–70°F; 40–90% cloud cover; 1–15 mph wind
2018-10-10	8:09 AM–4:00 PM	FM	All-Day Eagle Counts	57–67°F; 10% cloud cover; 4–22 mph wind
2018-10-11	8:08 AM–3:56 PM	FM	All-Day Eagle Counts	54–60°F; 10% cloud cover; 9–15 mph wind
2018-10-11	8:08 AM–3:45 PM	SC	30-Minute Point Counts	55–71°F; 20–50% cloud cover; 6–17 mph wind
2018-10-17	7:58 AM–3:57 PM	PL	All-Day Eagle Counts	56–59°F; 0% cloud cover; 2–17 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2018-10-18	8:00 AM–4:00 PM	KS	All-Day Eagle Counts	56–63°F; 0% cloud cover; 8–25 mph wind
2018-10-25	8:38 AM–2:40 PM	MF	30-Minute Point Counts	68–79°F; 0–30% cloud cover; 0–4 mph wind
2018-10-26	7:50 AM–3:50 PM	PL	All-Day Eagle Counts	58–75°F; 0–10% cloud cover; 1–12 mph wind
2018-10-31	8:00 AM–4:00 PM	KS	All-Day Eagle Counts	52–66°F; 0–10% cloud cover; 7–18 mph wind
2018-11-02	7:56 AM–2:44 PM	SC	30-Minute Point Counts	67.5–70.1°F; 0% cloud cover; 1–8.1 mph wind
2018-11-06	8:15 AM–4:15 PM	PL	All-Day Eagle Counts	63–73°F; 0–10% cloud cover; 1–8 mph wind
2018-11-07	8:10 AM–3:05 PM	SC	30-Minute Point Counts	70.6–76.3°F; 0% cloud cover; 1–10.3 mph wind
2018-11-12	9:08 AM–3:25 PM	OK	30-Minute Point Counts	50–55°F; 0% cloud cover; 10–23 mph wind
2018-11-16	7:40 AM–3:42 PM	PL	All-Day Eagle Counts	54–65°F; 0–10% cloud cover; 3–10 mph wind
2018-11-20	7:02 AM–12:16 PM	KS	30-Minute Point Counts	48–62°F; 0–30% cloud cover; 0–4 mph wind
2018-11-27	7:41 AM–3:43 PM	PL	All-Day Eagle Counts	50–64°F; 0–10% cloud cover; 0–7 mph wind
2018-11-28	8:00 AM–4:00 PM	SV	All-Day Eagle Counts	55–57°F; 0–10% cloud cover; 0–17 mph wind
2018-11-28	9:10 AM–3:23 PM	OK	30-Minute Point Counts	58–61°F; 0–10% cloud cover; 10–16 mph wind
2018-12-08	8:33 AM–2:46 PM	OK	30-Minute Point Counts	51–55°F; 0% cloud cover; 2–13 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2018-12-14	8:56 AM–3:29 PM	OK	30-Minute Point Counts	53–55°F; 0–30% cloud cover; 1–2 mph wind
2018-12-26	8:46 AM–3:27 PM	SC	30-Minute Point Counts	49–58°F; 0–30% cloud cover; 0–13 mph wind
2019-01-02	8:32 AM–3:25 PM	OK	30-Minute Point Counts	37–44°F; 0% cloud cover; 3–25 mph wind
2019-01-10	8:53 AM–3:15 PM	SC	30-Minute Point Counts	60–66°F; 0% cloud cover; 0–8 mph wind
2019-01-16	7:48 AM–1:36 PM	KS	30-Minute Point Counts	44–62°F; 20–100% cloud cover; 1–12 mph wind
2019-01-24	8:09 AM–4:06 PM	SC	30-Minute Point Counts	52–58°F; 0–90% cloud cover; 2–21 mph wind
2019-01-30	7:56 AM–1:53 PM	KS	30-Minute Point Counts	50–67°F; 50–70% cloud cover; 0–8 mph wind
2019-02-07	7:40 AM–1:24 PM	KS	30-Minute Point Counts	32–42°F; 0% cloud cover; 0–10 mph wind
2019-02-13	8:21 AM–2:35 PM	OK	30-Minute Point Counts	50–57°F; 70–100% cloud cover; 4–20 mph wind
2019-02-28	7:38 AM–1:39 PM	KS	30-Minute Point Counts	50–59°F; 10–50% cloud cover; 2–19 mph wind
2019-03-08	9:25 AM–3:41 PM	SC	30-Minute Point Counts	39–47°F; 20–80% cloud cover; 4–44 mph wind
2019-03-13	8:52 AM–3:25 PM	SC	30-Minute Point Counts	41–55°F; 10–80% cloud cover; 1–22 mph wind
2019-03-20	7:58 AM–2:24 PM	KS	30-Minute Point Counts	44–59°F; 40–100% cloud cover; 2–26 mph wind
2019-03-26	7:57 AM–2:54 PM	SC	30-Minute Point Counts	57–73°F; 70–100% cloud cover; 0–19 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2019-04-01	8:31 AM–3:30 PM	SC	30-Minute Point Counts	63–74°F; 10–70% cloud cover; 0–11 mph wind
2019-04-09	8:00 AM–3:10 PM	DP	30-Minute Point Counts	59–65°F; 0–10% cloud cover; 1–30 mph wind
2019-04-25	8:56 AM–3:23 PM	OK	30-Minute Point Counts	73–84°F; 0–10% cloud cover; 1–10 mph wind
2019-04-30	8:37 AM–3:18 PM	OK	30-Minute Point Counts	49–53°F; 70–100% cloud cover; 3–28 mph wind
2019-05-17	8:15 AM–2:23 PM	DP	30-Minute Point Counts	44–46°F; 0–10% cloud cover; 5–26 mph wind
2019-05-24	8:45 AM–3:42 PM	OK	30-Minute Point Counts	54–67°F; 0–40% cloud cover; 2–13 mph wind
2019-06-06	7:47 AM–1:39 PM	KS	30-Minute Point Counts	78–92°F; 0–20% cloud cover; 0–12 mph wind
2019-06-10	9:36 AM–4:32 PM	SC	30-Minute Point Counts	86–96°F; 10–40% cloud cover; 1–13 mph wind
2019-06-20	8:15 AM–1:36 PM	DM	30-Minute Point Counts	66–75°F; 0% cloud cover; 1–17 mph wind
2019-06-27	9:00 AM–3:20 PM	OK	30-Minute Point Counts	75–82°F; 0% cloud cover; 2–11 mph wind
2019-07-03	8:10 AM–2:16 PM	DM	30-Minute Point Counts	64–83°F; 0–10% cloud cover; 3–16 mph wind
2019-07-09	7:20 AM–1:49 PM	KS	30-Minute Point Counts	67–93°F; 0% cloud cover; 0–8 mph wind
2019-07-18	8:12 AM–3:09 PM	OK	30-Minute Point Counts	79–89°F; 0–20% cloud cover; 3–20 mph wind
2019-07-26	8:40 AM–3:23 PM	OK	30-Minute Point Counts	81–92°F; 0–60% cloud cover; 1–7 mph wind

Table 3-1
Schedule of Surveys – Boulder Brush Corridor

Date	Hours	Personnel	Focus	Conditions
2019-08-01	8:02 AM–1:45 PM	DM	30-Minute Point Counts	71–96°F; 0–20% cloud cover; 0–9 mph wind
2019-08-06	9:58 AM–2:47 PM	PL	30-Minute Point Counts	88–95°F; 50–90% cloud cover; 0–12 mph wind
2019-08-15	8:05 AM–1:40 PM	DM	30-Minute Point Counts	73–98°F; 0% cloud cover; 0–9 mph wind
2019-08-23	7:05 AM–12:29 PM	KS	30-Minute Point Counts	68–94°F; 0% cloud cover; 0–12 mph wind
2019-08-27	8:28 AM–3:28 PM	OK	30-Minute Point Counts	82–95°F; 0% cloud cover; 1–11 mph wind
Riparian Bird Surveys				
2018-05-19 through 2018-07-28	Varied	Varied	Least Bell's Vireo and Southwestern Willow Flycatcher	Varied[d].
Peninsular Bighorn Sheep Survey				
2018-07-23	7:45 AM–11:45 AM	KS, SC	Peninsular Bighorn Sheep	70–95°F; 0–10% cloud cover; 2–7 mph wind
2018-07-26	6:00 AM–12:00 PM	KS, SC	Peninsular Bighorn Sheep	64–95°F; 0% cloud cover; 0–5 mph wind
Bat Surveys				
2011-09-27 through 2012-06-19	Varied	Varied	Acoustic bat surveys for Jewell Valley Wind Project	Varied

mph = miles per hour

Personnel: KCD = Kathleen Dayton; SCG = Scott Gressard; CJF = Callie Amoaku; PCS = Patricia Schuyler; EJB = Erin Bergman; JM = Jake Marcon; SC = Shana Carey; JW = Janice Wondolleck, MO = Monique O'Conner; KS = Kevin Shaw; ME = Megan Enright; LM = Lindsy Mobley; MF = Mackenzie Forgey; RM = Randall McInvale; OK = Olivia Koziel; FM = Fern Hoffman; AC = Alex Chaney; SV = Shane Valiere; DP = Dilip Mahto.

Survey Designations/Focus: RP = rare plant survey; VEG = vegetation mapping; JD = jurisdictional delineation; QCB = Quino checkerspot butterfly

[a] The schedule for the 2011 focused Quino checkerspot butterfly surveys is included in Attachment A, 2011 Focused Quino Checkerspot Butterfly Survey for the Jewell Valley Wind Project, San Diego County, California.

[b] The schedule for the 2018 focused Quino checkerspot butterfly surveys is included in Attachment B-1, 2018 Focused Quino Checkerspot Butterfly Survey Report for the Torrey Wind Project, Boulevard, San Diego County, California.

[c] The schedule for the 2019 focused Quino checkerspot butterfly surveys is included in Attachment B-2, 2019 Focused Quino Checkerspot Butterfly Survey for both the Torrey Wind Project and Boulder Brush Facilities, Boulevard, San Diego County, California.

[d] The schedule for the 2018 focused least Bell's vireo and southwestern willow flycatcher surveys is included in Attachment C, 2018 Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Report for the Torrey Wind Project, Boulevard, San Diego County, California (in progress)

Vegetation Mapping

Vegetation communities and land uses on and typically within 100 feet of the proposed development footprint were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet), aerial photograph–based field map. The footprint (and subsequently the Boulder Brush Corridor) was revised slightly in June 2019; the vegetation communities not included in the previous Boulder Brush Corridor were desktop mapped using aerial maps to identify communities using vegetation signatures and adjacent project-specific mapping. The areas that were desktop mapped are shown on Figure 3-1. The Boulder Brush Corridor includes a 100-foot buffer from the development footprint as required by the County of San Diego guidelines. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and a GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined.

Consistent with the latest County of San Diego Report Format and Content Requirements: Biological Resources (County of San Diego 2010b), vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008).

Plants and Wildlife

Plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the California Native Plant Society's On-Line Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2018). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2018), and common names follow the U.S. Department of Agriculture's Natural Resources Conservation Service PLANTS Database (USDA 2018a).

In addition to species actually detected, expected wildlife use of the Boulder Brush Corridor was determined based on known habitat preferences of local species and knowledge of their relative distributions in the area (see Section 3.1, Literature Review). Latin and common names of animals follow Crother (2012) for reptiles and amphibians, the American Ornithologists' Union for birds

(AOS 2017), the North American Butterfly Association for butterflies (NABA 2016), and Wilson and Reeder (2005) for mammals.

Jurisdictional Wetlands Delineation

The jurisdictional wetland delineation was conducted in accordance with the methods prescribed in the 1987 Wetland Delineation Manual (USACE 1987), the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008a), and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (USACE 2008b). During the jurisdictional delineation surveys, the Boulder Brush Corridor was walked and evaluated for evidence of an ordinary high water mark, surface water, saturation, wetland vegetation, and nexus to a traditional navigable water of the United States. The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations.

Pursuant to the federal Clean Water Act, USACE and RWQCB jurisdictional areas include those supporting all three wetlands criteria described in the USACE manual: hydric soils, hydrology, and hydrophytic vegetation. Areas regulated by the RWQCB are generally coincident with the USACE, but can also include isolated features that have evidence of surface water inundation, pursuant to the state Porter Cologne Act. These areas generally support at least one of the three USACE wetlands indicators, but are considered isolated through the lack of surface water hydrology/connectivity downstream.

A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

Features that convey or hold water are regulated by multiple agencies. Federal, state, and local agencies have different definitions and terminology for these types of features. Water-dependent resources regulated by USACE, RWQCB, CDFW, and the County are collectively referred to as jurisdictional aquatic resources herein. Terminology used in this document to distinguish each jurisdictional aquatic resource according to the agency that regulates the resource is as follows:

- **USACE and RWQCB:** "Wetland" and "non-wetland waters." Wetland waters of the United States and non-wetland waters of the United States are subject to regulation by USACE and RWQCB, pursuant to the Clean Water Act. Within the Boulder Brush Corridor, USACE waters of the United States and wetlands, and RWQCB waters of the

United States and wetlands overlap, and therefore are combined under one term: "non-wetland waters" or "wetlands."

- **CDFW:** "Riparian areas" and "streambeds." Lakes, rivers, and streambeds, including any associated riparian habitat, are subject to regulation by CDFW pursuant to the California Fish and Game Code. Within the Boulder Brush Corridor, CDFW streambeds are synonymous with USACE and RWQCB non-wetland waters. CDFW riparian areas are not synonymous with USACE and RWQCB wetlands because these areas lacked all three parameters.

The County's RPO (County of San Diego 2012) identifies environmental resources, including wetlands, present within the County, and provides measures to preserve these resources. The RPO defines wetlands as lands that have one or more of the following attributes: (1) lands that periodically support a predominance of hydrophytes (plants whose habitat is water or very wet places); (2) lands in which the substratum is predominantly undrained hydric soil; or (3) lands where an ephemeral or perennial stream is present and whose substratum is predominantly non-soil, and where such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

During the jurisdictional delineation surveys, the Boulder Brush Corridor was walked and evaluated for evidence of an ordinary high water mark, surface water, saturation, wetland or hydrophytic vegetation, and nexus to a traditional navigable water of the United States. The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations.

3.2.2 Campo Corridor

Surveys on Reservation were conducted by AECOM in 2010 and by Dudek in 2017 and 2018. These surveys included: vegetation mapping, jurisdictional delineation, focused Quino checkerspot butterfly surveys, focused arroyo toad surveys, focused riparian bird surveys, golden eagle aerial and ground nest surveys, eagle point counts, and bat surveys. These surveys are described in detail in the *Campo Wind Project Biological Technical Report* (Appendix H to the Campo EIS).

3.3 Focused Surveys for Special-Status Biological Resources

Special-status, or sensitive, biological resources are those defined by the County or other regulatory agency as (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3)

habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; or (4) wildlife corridors and habitat linkages.

Focused surveys and/or habitat assessments for the following sensitive biological resources were conducted within the Boulder Brush Corridor: focused surveys for rare plants; habitat assessments for Hermes copper butterfly and Laguna Mountain skipper; a habitat assessment, larval host plant survey, and protocol surveys for Quino checkerspot butterfly; golden eagle surveys, bird utilization counts, small bird counts, raptor nest surveys, riparian bird surveys, and Peninsular bighorn sheep surveys. Incidental detections of wildlife species, either through sight, calls, tracks, scat, or other signs, were also recorded. Dates and site conditions for the field efforts are organized in Table 3-1. Figure 3-1, General Boulder Brush Survey Areas, shows the overall locations of the surveys. Focused surveys and survey areas are described in more detail below and are shown on separate Figures 3-2 through 3-7 as described in Section 3.2.

In addition, the data gathered from the avian and bat field surveys conducted in 2011 and 2012 for a previous project (Jewell Valley Wind Project) proposed by a different applicant (bird utilization counts, eagle and small bird counts as well as acoustical bat surveys) are being used to assist in the development of a Project-specific Avian and Bat Monitoring Plan. This plan, including methods and results, would be a separate document from this report, and is therefore not included as an attachment to this report; however, the species observed during these surveys are included in the compendium and any special-status species observed are included in the biological analysis for the Project.

As mentioned above, the focused surveys for the Campo Wind Facilities are described in detail in the *Campo Wind Project Biological Technical Report* (Appendix H to the Campo EIS).

3.3.1 Boulder Brush Corridor

3.3.1.1 Focused Surveys for Special-Status Plants

Dudek biologists conducted focused surveys for special-status plants in 2017 and again in 2018. The 2017 surveys were conducted for a different configuration of the proposed Project, and therefore didn't cover the entire 2018 Boulder Brush Corridor. Therefore, the 2018 surveys were conducted over the current Boulder Brush Corridor and the 2017 surveys were utilized to supplement data where appropriate (i.e., known locations based on 2017 surveys were revisited in 2018 to ensure the full extent of the population was mapped). There were 27.1 acres added to the Boulder Brush Corridor in June 2019 that were not surveyed. These areas consist of 12 extended polygons ranging from less than 0.01 acres to 4.6 acres. However, these areas support the same type of vegetation communities and species' habitat as previously analyzed. Focused

surveys for special-status plants were conducted at the appropriate phenological stage of the plant (blooming and fruiting) to detect and identify the target species. Field survey methods conformed to CNPS Botanical Survey Guidelines (CNPS 2001); Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 2000); and General Rare Plant Survey Guidelines (Cypher 2002). The survey was conducted by walking meandering transects to detect special-status species. Special-status plant observations were mapped in the field using the ESRI Collector mobile application to record the location and population number of special-status plant occurrences.

3.3.1.2 Quino Checkerspot Butterfly Surveys

2011 Protocol Surveys

The 2011 focused Quino checkerspot butterfly (*Euphydryas editha quino*) surveys were performed for a different proposed project (Jewell Valley Wind Project) and different project applicant (Figure 3-2, 2011 Quino Checkerspot Butterfly, Raptor Survey, and Acoustical Bat Survey Areas – Boulder Brush). The survey areas were developed based on discussions with the previous project applicant that identified potential areas on site that would likely be most suitable for development. Portions of these focused surveys overlap with the Boulder Brush Corridor.

Focused Quino checkerspot butterfly surveys were conducted over five visits within a 5-week period between March 9 and April 15, 2011. Surveys were conducted by Quino checkerspot butterfly–permitted biologists Anita M. Hayworth, PhD (TE-781084), Brock A. Ortega (TE-813545-5), David Waller (TE-025394-2), Jeffrey D. Priest (TE-840619-2), Kamarul J. Muri (TE-051250-0), Paul M. Lemons (TE-051248-2), Tricia Wotipka (TE840619-2), Vipul R. Joshi (TE-019949-0), and Viviane Marquez (TE-800930-9) in accordance with the most current USFWS protocol for that period (USFWS 2002a, 2002b).

The site was divided into five survey polygons, each representing a single-day survey effort (i.e., in accordance with USFWS protocol) (Figure 3-2). These survey areas were numbered and assigned to Dudek's permitted biologists. The biologists were provided with 200-scale (1 inch = 200 feet) aerial photographs of each survey polygon. These photographs were used for mapping host plant populations. Binoculars were used to aid in detecting and identifying butterfly and other wildlife species. GPS units also were available for recording locations of host plant populations.

The survey methods consisted of slowly walking roughly parallel transects throughout all potential habitat within the survey area (i.e., all areas that are not excluded per the survey protocol, generally including sage scrub, open chaparral, grasslands, open or sparsely vegetated areas, hilltops,

ridgelines, rocky outcrops, trails, and dirt roads). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10–15 acres per hour.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; sustained winds greater than 15 miles per hour measured 4–6 feet above ground level; temperature in the shade at ground level less than 60°F on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). Survey times, personnel, and conditions during the Quino checkerspot butterfly survey are provided in the 45-day report in Attachment A, 2011 Focused Quino Checkerspot Butterfly Survey for the Jewell Valley Wind Project, San Diego County, California. Note that the report discusses surveys conducted within the Torrey Wind Project site, as well as areas south of I-8, which are not a part of this project, but which were a part of the larger Jewel Valley Wind Project.

2018 and 2019 Protocol Surveys

In 2018 and 2019, Dudek conducted Quino checkerspot butterfly surveys within the Boulder Brush Boundary. These surveys also covered the study area for the proposed Torrey Wind Project, which is a separate project; however is proposed within the area identified as the Boulder Brush Boundary. The switchyard, high-voltage substation and paved access road to the switchyard/substation are the same for both the Boulder Brush Facilities and the proposed Torrey Wind Project. However, the proposed Torrey Wind Project proposes wind turbines within the Boulder Brush Boundary, while the Boulder Brush Facilities do not include turbines.

The 2018 and 2019 protocol Quino checkerspot butterfly surveys consisted of a 100-foot buffer applied to the access road impacts, a 100-foot buffer to the gen-tie line and pole structures, a 100-foot buffer to the switchyard and high-voltage substation, and a 500-foot buffer applied to the proposed Torrey Wind Project turbine locations to create the Quino Survey Area (Figure 3-2, 2018 Quino Checkerspot Butterfly Survey Areas – Boulder Brush, and Figure 3-3, 2019 Quino Checkerspot Butterfly Survey Areas – Boulder Brush). During the surveys, the Boulder Brush Facilities were revised from its original design to avoid sensitive cultural and biological resources resulting in a slightly modified survey area in April 2018. Figure 3-2 shows the original and revised survey areas and Figure 3-3 shows the 2019 survey areas.

In 2018, prior to conducting protocol surveys, Dudek biologists conducted a habitat assessment as well as host plant mapping within the Boulder Brush Corridor and additional proposed Torrey Wind Project areas, both located within the overall Boulder Brush Boundary, to determine which areas could be excluded as Quino checkerspot butterfly habitat. A habitat assessment was also completed for any survey areas within the Boulder Brush Corridor that were modified to avoid

sensitive resources. Areas not recommended for Quino checkerspot butterfly surveys include the following (USFWS 2014):

- Orchards, developed areas, or small in-fill parcels (plots smaller than an acre completely surrounded by urban development) largely dominated by non-native vegetation.
- Active/in-use agricultural fields without natural or remnant inclusions of native vegetation or that are completely without any fallowed or unplowed areas.

Closed-canopy woody vegetation including forests, riparian areas, shrub-lands, and chaparral. "Closed-canopy woody vegetation" describes shrubs or trees growing closely together in which the upper portions of the vegetation converge (are touching) to the point that the open space between two or more plants is not significantly different than the open space within a single plant. Closed canopy shrub-land and chaparral are defined as vegetation so thick that it is inaccessible to humans except by destruction of woody vegetation (branches). Focused Quino surveys in 2018 were conducted over 10 visits from March 13, 2018, through May 12, 2018, in accordance with the 2014 USFWS Quino Checkerspot Butterfly Survey Guidelines. The survey area consisted of suitable habitat for Quino checkerspot (Figure 3-3). Surveys were conducted by Quino-permitted biologists Anita Hayworth (TE-781084-9.1), Brock Ortega (TE-813545-6), Callie Amoaku (TE-36118B-1), David Erik LaCoste (TE-027736-6), Diana Saucedo (TE-221287-1), Erin Bergman (TE-813545-5), Jeff Priest (TE-840619-6), Margie Mulligan (TE-88969B-0), Patricia Schuyler (TE-27502B-1), Paul M. Lemons (TE-051248-5), and Tricia Wotipka (working under TE-840619-6).

In 2019, focused Quino surveys were conducted over 9 visits from March 15, 2019, through May 13, 2019, per the 2014 USFWS Quino Checkerspot Butterfly Survey Guidelines. The survey area consisted of suitable habitat for Quino checkerspot butterfly (Figure 3-4). Surveys were conducted by Quino-permitted biologists Antonette Gutierrez (TE-50992-B), Brock Ortega (TE-813545-6), Callie Amoaku (TE-36118B-1), David Erik LaCoste (TE-027736-6), Diana Saucedo (TE-221287-1), Erin Bergman (TE-53771B-2), Garrett Huffman (TE-20186A-2.1), Jeff Priest (TE-840619-6), Lindsay Willrick (TE-61175B-0), Margie Mulligan (TE-88969B-0), Patricia Schuyler (TE-27502B-1), and Victor Novik (TE-069534).

The biologists were provided with 200-scale (1 inch = 200 feet) aerial maps of the survey area. Binoculars were used to aid in detecting and identifying butterfly and other wildlife species. While host plant surveys were performed in concert with the habitat assessment, surveyors also looked for host plants during the focused surveys to document any changes from the initial host plant mapping effort. No Quino larval host plants were observed within the 2018 Quino survey area during the habitat assessment or focused surveys; however, surveyors did observe some dead

Cordylanthus rigidus remaining from the previous year's rainfall; however, since only live host plants are mapping during this effort, these locations were not recorded. Surveyors also looked for host plants during the focused surveys and none were observed. One species of host plant was observed within portions of the survey areas during the 2011 Quino host plant mapping effort, but was located in the portion of the Jewel Valley Project south of I-8 and not within the area to be developed with the Boulder Brush Facilities (Dudek 2011). The 2019 host plant mapping is described in more detail below.

The results of the surveys are discussed further in Section 6.2, Analysis of Project Effects, and they are also provided in Attachment B-1, 2018 Focused Quino Checkerspot Butterfly Survey for the Torrey Wind Project, San Diego County, California, and Attachment B-2, 2019 Focused Quino Checkerspot Butterfly Survey for both the Torrey Wind Project and Boulder Brush Facilities, Boulevard, San Diego County, California.

2019 Habitat Assessment and Host Plant Mapping

For the 2019 surveys, Dudek biologists conducted two passes of Quino host plant mapping surveys between March 6 and April 23, 2019 within the Boulder Brush Corridor (Figure 3-3). Botanical surveys were conducted by biologists Patricia Schuyler, Shana Carey, Olivia Koziel, and Margie Mulligan. All surveys were conducted on foot. Approximately 10 person-days were spent conducting host plant mapping within the Boulder Brush Corridor. Host plant mapping surveys searched for the six recognized host plants and one potential host plant for Quino checkerspot butterfly: dwarf plantain (*Plantago erecta*), woolly plantain (*P. patagonica*), Coulter's snapdragon (*Antirrhinum coulterianum*), purple Chinese houses (*Collinsia heterophylla*), rigid bird's beak (*Cordylanthus rigidus*) and exserted Indian paintbrush (*Castilleja exserta*) (USFWS 2014; Pratt and Pierce 2009). Purple Chinese houses do not have an eastern San Diego county distribution and would not occur on site. Chinese houses (*Collinsia concolor*) is a potential larval host plant (Pratt and Pierce 2009). Nectar plants were recorded each week of surveys.

Dudek biologists recorded locations of Quino host plants using a mobile application. Data collected included the surveyor(s), date, species of host plant, and density of the host plant at the point at which the host plant was found. All host plant occurrences were mapped as points. Density was collected using the following classes:

- Very Low: 1–19 plants
- Low: 20–100 plants
- Medium: 100–500 plants
- High: 500–10,000+ plants

Points were collected within patches of host plant at least as close as every 3 meters (10 feet). At the conclusion of surveys, Dudek geographic information systems (GIS) analysts created a GIS coverage for host plants. After review by a biologist, a geodatabase was created to ensure these data are topologically correct and met final quality control and assurance procedures.

3.3.1.3 Migratory Bird Treaty Act and Bald and Golden Eagle Act Surveys

In 2011 and 2012, Dudek conducted raptor nest surveys for the previously proposed Jewell Wind Project for another applicant. In 2011 and 2012, suitable habitat within private land was traversed by vehicle and on foot with the aid of binoculars (7x50 power) according to the technique outlined in Fuller and Mosher 1987. This survey covered all areas of suitable raptor nesting habitat within the Boulder Brush Corridor. Nest locations of raptors and large birds were mapped using GPS and 550-scale (1 inch = 550 feet) aerial photographs overlain with the Boulder Brush Corridor boundaries. Nests observed were evaluated and classified based on activity status (i.e., active nests with birds present, bird sign present, a cavity with bird sign present, or inactive); condition (i.e., good condition, or old/degraded and assumed inactive); and potentially associated raptor species based on an estimate of size and nest materials used. If present, active nests were characterized by presence of incubating adult, eggs, or young in the nest, or territory defense by adults. Particular attention also was given to searching for special-status species.

Between 2010-2012, focused avian studies (Bird Utilization Count surveys and small bird count surveys) were also performed on the proposed Jewell Wind Project area. The methods are described below.

In 2018, nest locations were noted during other wildlife surveys conducted within the Boulder Brush Corridor, including the bird use count surveys (Figure 3-1). In addition, nest locations from the surveys completed in the Jewell Valley Project (Figure 3-5) were revisited to verify continued presence. Data collection for 2018 was completed using ESRI Collector mobile application. Nest locations were downloaded by Dudek GIS technician, using ArcGIS software.

Additional avian studies (30-minute point count surveys and All-day eagle surveys) were performed between 2017 through 2019 in order to analyze possible effects to avian species, including small birds, large birds, and eagles (Figure 3-1). These methods were approved by the USFWS and would be used to inform a Bird and Bat Conservation Strategy if needed.

Bird Utilization Count Surveys

Bird Utilization Counts (BUC) are an established methodology used to determine bird use in a given area. BUCs were conducted in 2010, 2011, and 2012 for the previously proposed Jewell Valley Wind

project, which was a separate project and applicant. The focus of the BUC's for the Jewell Valley Wind project were raptors. BUC's for the Jewel Valley Wind project were initially performed by Stantec from June to September 2010 and by Dudek starting in October 2010 through May 2012. Surveys were conducted weekly from October 5, 2010 through June 21, 2011 and biweekly surveys were conducted from July 5, 2011 to May 28, 2012. A total of 60 survey days was completed for four sites and 23 days for one site. Figure 3-5 shows the areas surveyed for these BUCs.

The survey method consisted of recording all birds observed within an 800 meter buffer at each predetermined location for 30 minutes. Survey locations were typically located on top of boulders to facilitate visibility of the 800 meter buffer around the site. The surveys started 15 minutes after sunrise and all sites were surveyed in one day. The order of sites was changed each week to avoid bias in timing of survey. The surveys were performed under a variety of conditions including rain, high temperatures, high and low wind, and snow to ensure capture of all species utilizing the area.

Two biologists were present for each survey. One biologist was the observer and the other biologist recorded data on the following items for each site: Site number, survey date, and starting and ending weather conditions (including temperature, wind speed, wind direction, precipitation, cloud cover and visibility. If the bird(s) was perched then the perch type (i.e., shrub, tree, ground etc.), perch height, distance and direction were recorded. If the bird(s) were flying then the distance, direction of flight, height and flight behavior (i.e., flapping, soaring etc.) were recorded. For raptors and corvids, the duration of flight within an 800 meter buffer was also recorded.

Small Bird Count Surveys

Small Bird Counts are very similar to the BUCs described above, except that they are conducted at a higher density to capture more small bird use of the site and are 10-minute point counts. The purpose of the count surveys are to determine species composition and relative density of breeding passerines in proposed turbine areas and to establish baseline data which may later be compared to post-construction data to determine breeding bird displacement impacts. Surveys are designed to incorporate before-after/control-impact ("BACI") study methodologies. As such, all counts are performed at geo-referenced and permanently marked observation points along and within the proposed turbine locations.

Small Bird Counts were conducted by Dudek in 2011 for the previously proposed Jewell Valley Wind project, which was a separate project and applicant from the Boulder Brush Facilities. Figure 3-5 shows the areas surveyed in 2011. Dudek established permanent and geo-referenced count locations a minimum of approximately 820 feet (250 meters) apart, with an attempt to maintain a grid of the distance that overlays the anticipated wind turbine area. The grid was set up to minimize the number

of stations needed to the maximum extent feasible and included 20 point locations. The survey area at each point location consisted of a circular 100-meter area and the stations were stratified across all vegetation types within the affected wind turbine area. Surveys were conducted three times at approximately 2-week intervals during the breeding season (i.e., between March 1 and August 31, 2011). During each sampling event, each point was visited for ten minutes during the peak hours at which birds sing, (i.e., no earlier than 30 minutes before sunrise and no later than 4 hours after sunrise). At the start of each point count survey, start time and weather conditions (temperature, wind speed and direction, cloud cover, and precipitation) were be recorded. Observers recorded all birds detected by sight or sound during the survey period within the 100-meter radius count circle. Recorded data included time, species, number/species, estimated distance from the observer, activity, habitat, flight direction, and estimated flight height. The points were surveyed in differing orders during each pass so that each point was not surveyed at the same time of morning during each pass.

30-Minute Point Count Surveys

This study was intended to function as both Bird Utilization Counts (larger birds) and Small Bird Counts. Permanent and geo-referenced count locations were established a minimum of 2,625 feet (800 meters) apart, with an attempt to maintain coverage over the anticipated wind turbine and infrastructure area. A total of 7 locations covered the Boulder Brush Corridor (Figure 3-1).

Surveys were conducted September 2017 through September 2019. The first 10 minutes of the survey focused on recording the activities of small birds (less than 10 inches) within 328 feet (100 meters), the remaining 20 minutes focused on the activities of medium and large birds within 2,625 feet (800 meters). Surveys were conducted throughout the day, beginning from ½ hour after sunrise to 1 hour before sunset to account for species with varying activity periods. Additionally, the starting survey location was rotated on a weekly basis.

Data collected included:

- Site location number
- Observer name
- Survey period start and end times
- Weather (temperature, wind speed/direction, precipitation, percent cloud cover, visibility) at the start and end of each survey period
- Time and duration of observation (duration is rounded up to 1-minute increments; e.g., an eagle flying for about 15 seconds is 1 eagle minute, and another observed for about 1 minute10 seconds is 2 eagle minutes)

- Bird identification tag (letter code; e.g., A = first bird, B= second bird)
- Detection type (visual, aural)
- Species (American Ornithologists' Union four-letter code, including an unknown category)
- Number of individuals, sex, age class
- Location first observed (horizontal distance/bearing from observer)
- Activity/behavior (e.g., perching, soaring, flapping, circling, hunting, other)
- Flight height above ground (at location of bird) when first observed, when closest to the observer, at maximum height, and at minimum height
- Flight direction
- Flight paths for all raptors (delineated on a map)
- Notes (e.g., contour flying, following ridgeline, flying through a pass, flying over top of hills, location information on incidental bird sightings)

The data was collected to support additional analyses, such as a Bird and Bat Conservation Strategy.

All-day Eagle Surveys

These surveys were conducted to provide additional data regarding eagle use of the Campo Corridor and Boulder Brush Corridors. These point count surveys were conducted during the spring and fall periods to capture peak movement periods. Observation points were established on ridgelines or hilltops to provide the best visual coverage of the site. USFWS Appendix C recommends at least 30% of the area within a 0.62-mile (1-kilometer) radius of potential wind turbine locations be covered or sampled by point counts (USFWS 2012b). Therefore, a total of 5 point count stations were established on the Campo and Boulder Brush Corridors. Surveys were performed between May 2018 and June 2019. Surveys were conducted between 0800 and 1600 hours. These occurred three (3) days per week for 8 weeks during each Spring/Fall period.

The following data were recorded for each golden eagle and/or raptor observation:

- Species
- Number of individuals, sex, age class
- Time and duration of observation
- Detection type (visual or auditory)

- Location first observed (distance/direction from observer)
- Maximum and minimum flight height above the ground
- Maximum and minimum flight heights relative to the observer's position (e.g., a bird flying over a ravine at the same level as the observer is assigned a flight height of 0)
- Topographic flight path characterization (e.g., following ridgeline, through a pass, over top of hills)
- Flight path and direction (recorded on aerial photos)

3.3.1.4 Riparian Bird Surveys

Riparian bird surveys were conducted by Dudek within the Boulder Brush Corridor and additional areas within the proposed Torrey Wind project, which is a separate project proposed within the Boulder Brush Boundary. Suitable habitat areas within and surrounding the Boulder Brush Corridor and additional areas within the proposed Torrey Wind project were surveyed eight times for vireo and five times for flycatcher (Figure 3-7, 2018 Riparian Bird Survey Area). Focused surveys for these species were initiated on May 19, 2018, and continued through July 28, 2018. The survey report is provided in Attachment C, 2018 Least Bell's Vireo and Southwestern Willow Flycatcher Focused Survey Report for the Torrey Wind project, Boulevard, San Diego County, California. Surveys for least Bell's vireo and flycatcher were not conducted concurrently. Due to differences in detectability, surveys were conducted sequentially, with surveys for the flycatcher first (i.e., first thing in the morning) and surveys for the vireo conducted immediately after flycatcher surveys. All surveys consisted of slowly walking a methodical, meandering transect within and adjacent to all riparian habitat on site. The perimeter also was surveyed. This route was arranged to cover all suitable habitat on site. A vegetation map (1:2,400 scale; 1 inch = 200 feet) of the Boulder Brush Corridor was available to record any detected vireo or flycatcher. Binoculars were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher [Sogge et al. 2010]), which states that a minimum of five survey visits is needed to evaluate a project's effects on flycatchers. The protocol recommends one survey between May 15 and 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Consistent with the protocol, surveys during the final period (June 25 and July 17) were separated by at least 5 days. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. If flycatcher were detected, tape playback ceased immediately to avoid harassment.

In concurrence with the accepted Least Bell's Vireo Survey Guidelines (USFWS 2001), eight focused surveys were conducted by qualified Dudek biologist within all riparian areas and any other potential vireo habitats between April 10 and July 31, 2018 (Table 3-1). The site visits were conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations was not used during the surveys. Surveys were conducted between dawn and noon and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

3.3.1.5 Peninsular Bighorn Sheep Surveys

Dudek performed a habitat assessment for bighorn sheep based on the terrain within the Boulder Brush Boundary. In July 2018, pedestrian transect survey we completed in open habitats to search for Peninsular bighorn sheep sign including tracks and pellets. While this survey also included the proposed Torrey Wind project, which is a separate project, the survey also included open habitats within and surrounding the Boulder Brush Corridor (Figure 3-1). This effort was concentrated on the more open northeastern and southwestern habitat within the Boulder Brush Boundary and was not constrained to just the Boulder Brush Corridor but instead focused on areas where there could be a potential for bighorn sheep to occur.

3.3.1.6 Acoustical Bat Surveys

In 2011, Dudek conducted acoustical bat surveys for the previously proposed Jewell Wind project for another applicant. Dudek conducted passive acoustic bat surveys from September 2011 to September 2012 to determine general bat presence, activity levels, and species composition and to establish baseline data for the Jewell Wind project. Dudek used broadband acoustic detectors (Anabat SD2) that are programmed to record bat calls each day from one half-hour before sunset to one half-hour after sunrise each day of the study. Data from this 2011-2012 acoustical bat survey was used to determine the potential and frequency for bats to occur within the Boulder Brush Corridor.

Dudek attached two bat echolocation microphones to a meteorological tower located on the eastern border of the Boulder Brush Boundary (Figure 3-5). One microphone was mounted approximately 15 feet from the ground (low mic) while the second microphone was mounted near the top of the meteorological tower, approximately 200 feet from the ground. The microphone enclosures are fitted with Plexiglas sound reflector plates positioned at 45 degrees below horizontal so that the angle of the call reception is pointed upward at 45 degrees. The Anabat detector is powered by a 12-volt battery that is recharged daily by a 10-watt solar panel attached to the meteorological tower. The microphones were rotated between the two heights on a bi-weekly basis to ensure bat calls are recorded at different heights.

Identification of species used the methods of O'Farrell and Miller (1999) based on frequency characteristics, call shape, and comparison with a comprehensive library of vocal signatures developed by O'Farrell and Miller. An index of activity (IA), or the magnitude of each species contribution to spatial use, was obtained for the monitoring station using the sum of 1-minute time increments for which a species was detected as present divided by the number of nights of sampling (Miller 2001). The IA was multiplied by a factor of 100 in order to scale the smallest index values up to whole numbers and rounded to the nearest whole number for ease in interpreting the tables.

3.3.1.7 Habitat Assessment for Special-Status Butterflies

The County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*) (Attachment B of County of San Diego 2010b) defines suitable habitat for Hermes copper butterfly as areas with redberry buckthorn (*Rhamnus crocea*) within 15 feet of Eastern Mojave buckwheat (*Eriogonum fasciculatum*). No redberry buckthorn were observed during the 2017 and 2018 rare plant surveys (see Section 3.3.1) conducted within the Boulder Brush Corridor (Figure 3-1); therefore, no suitable habitat was mapped within the Boulder Brush Corridor.

During rare plant surveys, surveyors looked for Cleveland's horkelia (*Horkelia clevelandii*), the host plant for the federally-endangered Laguna Mountain skipper. No Cleveland's horkelia is present within the Boulder Brush Corridor; therefore, no suitable habitat was mapped. At the time of listing in 1997, Laguna Mountain skipper occurred in the Laguna Mountains (located northwest of the Project site) and on Palomar Mountain in San Diego County, California, but it is currently restricted to Palomar Mountain, where there are four extant occurrences (USFWS 2016).

3.3.2 Campo Corridor

Surveys on the Reservation were conducted by AECOM in 2010 and by Dudek in 2017 and 2018. These surveys included: vegetation mapping, jurisdictional delineation, focused Quino checkerspot butterfly surveys, focused arroyo toad surveys, focused riparian bird surveys, golden eagle aerial and ground nest surveys, eagle point counts, and bat surveys. The areas surveyed in 2010 for Quino checkerspot butterfly on the Reservation are shown on Figure 3-6. The 2018 survey areas on the Reservation for Quino checkerspot butterfly are shown on Figure 3-7. Focused surveys are described in detail in the *Campo Wind Project Biological Technical Report*, which is Appendix H to the Campo EIS.

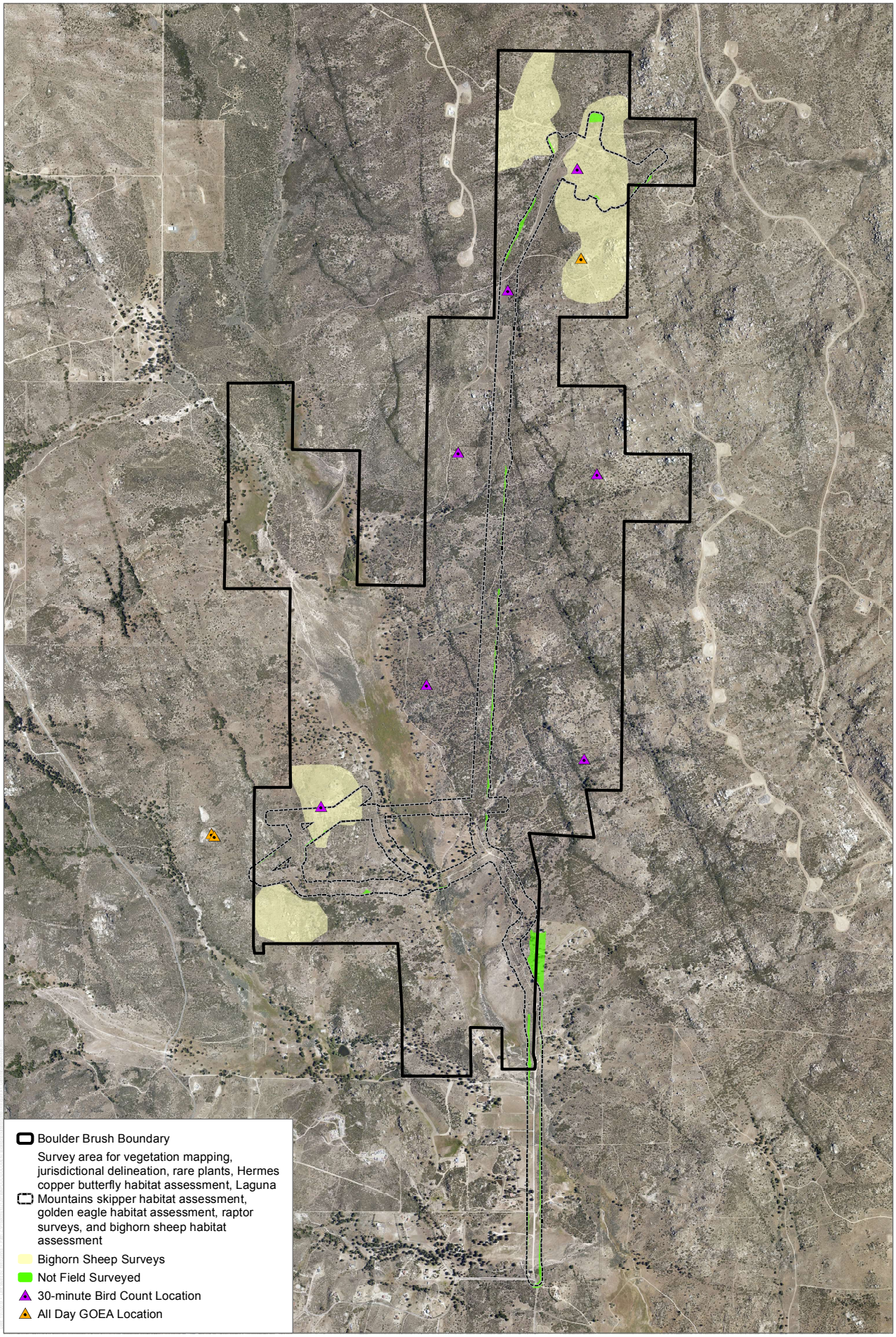
3.4 Survey Limitations

For purposes of this discussion, "special-status species" refers to plant and wildlife species designated by the FESA, the state, and/or the County for the Boulder Brush Facilities. For the

Campo Wind Facilities On-Reservation, "special-status species" refers to plant and wildlife species that are federally protected or regulated. Direct observations of special-status plants and wildlife species were recorded during vegetation mapping, jurisdictional delineations, rare plant surveys, focused wildlife surveys, and habitat assessments. In addition to direct observations of wildlife species, signs such as tracks and scat were also recorded. Special-status species observed during these surveys were recorded and/or mapped (see Section 4 for results). With the exception of the 2016/2017 and 2018/2019 winters, San Diego County experienced drought conditions over the last several years that affected plant growth. Fluctuations in annual plant populations and effect rates of germination are associated with variations in rainfall and other climatic conditions. Therefore, in addition to two years of focused surveys (2017 and 2018), an emphasis was placed on conducting habitat assessments for special-status plant species. In addition, reference checks were conducted for populations of rare plants near the Boulder Brush Corridor to determine appropriate survey timing. Reference checks were conducted near Pine Valley, California, numerous locations off of McCain Valley road, near Boulevard, California, within Jacumba, California, and a few within Anza Borrego Desert State Park. Six flowering rare plants were found before starting surveys which included desert beauty (*Linanthus bellus*), Jacumba milk ~~w~~vetch (*Astragalus douglasii* var. *perstrictus*), southern jewelflower (*Streptanthus campestris*), pygmy lotus (*Acmispon haydonii*), sticky geraea, ~~and~~ alpine gold (*Hulsea californica*)~~.~~, Tecate tarplant (*Deinandra floribunda*), and Colorado Desert larkspur (*Delphinium parishii* ssp. *subglobosum*).

Focused wildlife surveys were conducted per the appropriate protocols, where required, which resulted in wildlife surveys being conducted during the day. Birds represent the largest component of the vertebrate fauna. Since birds are active in the day, diurnal surveys maximized the number of observations of this portion of the fauna. Daytime surveys, however, may result in fewer observations of animals that are more active at night, such as mammals. Similarly, many species of reptiles and amphibians are nocturnal or cryptic in their habits and may be difficult to observe using standard meandering transects. Performance of diurnal surveys are standard practice, however, the 2010 arroyo toad surveys conducted on the Reservation included nocturnal surveys, which allowed identification of amphibians and reptiles detectable in those habitat types.

To account for survey limitations, biologists identified special-status wildlife species that could occur in the Boulder Brush Corridor and Campo Corridor based on pertinent distribution and habitat preference literature, recorded on-site and off-site observations as well as extensive local experience of the Dudek wildlife biologists (see Section 3.1, Literature Review).



SOURCE: SanGIS 2017

DUDEK

0 1,300 2,600 Feet

FIGURE 3-1

General Boulder Brush Corridor Survey Areas

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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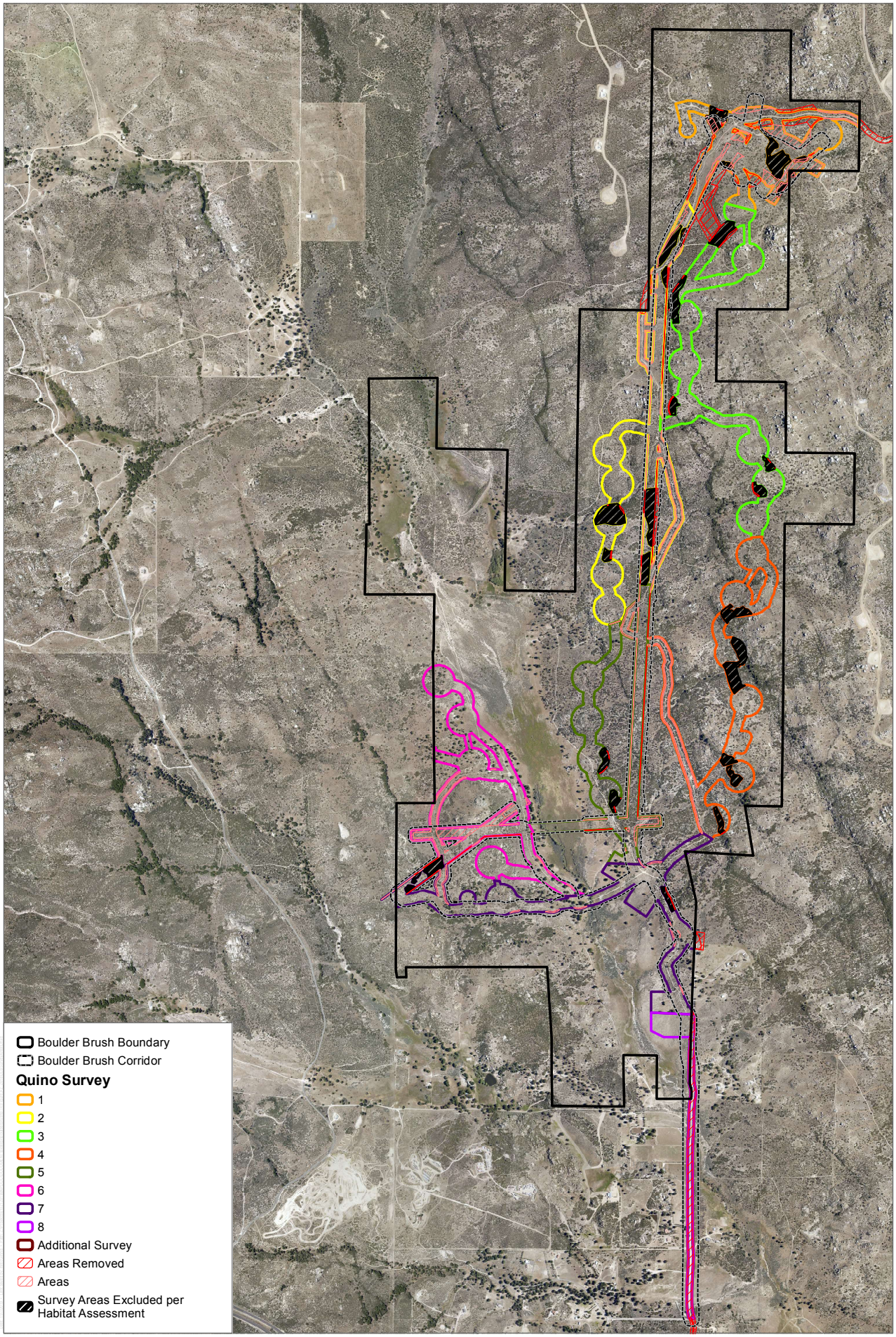

SOURCE: SanGIS 2017

DUDEK

0 1,200 2,400 Feet

FIGURE 3-2

2018 Quino Checkerspot Butterfly Survey Areas - Boulder Brush Boundary

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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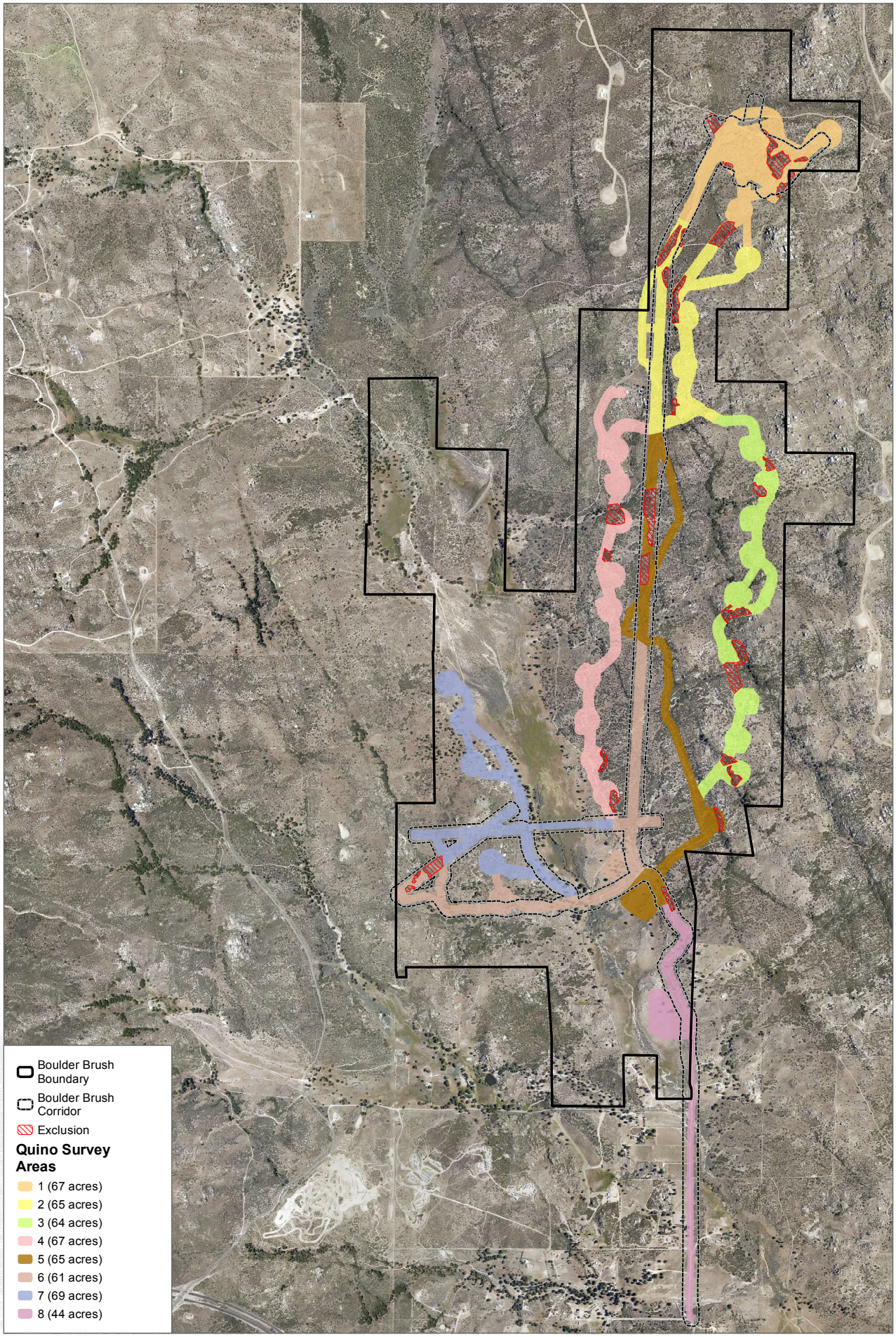

SOURCE: SanGIS 2017

DUDEK

0 1,200 2,400 Feet

FIGURE 3-3

2019 Quino Checkerspot Butterfly Survey Areas - Boulder Brush Boundary

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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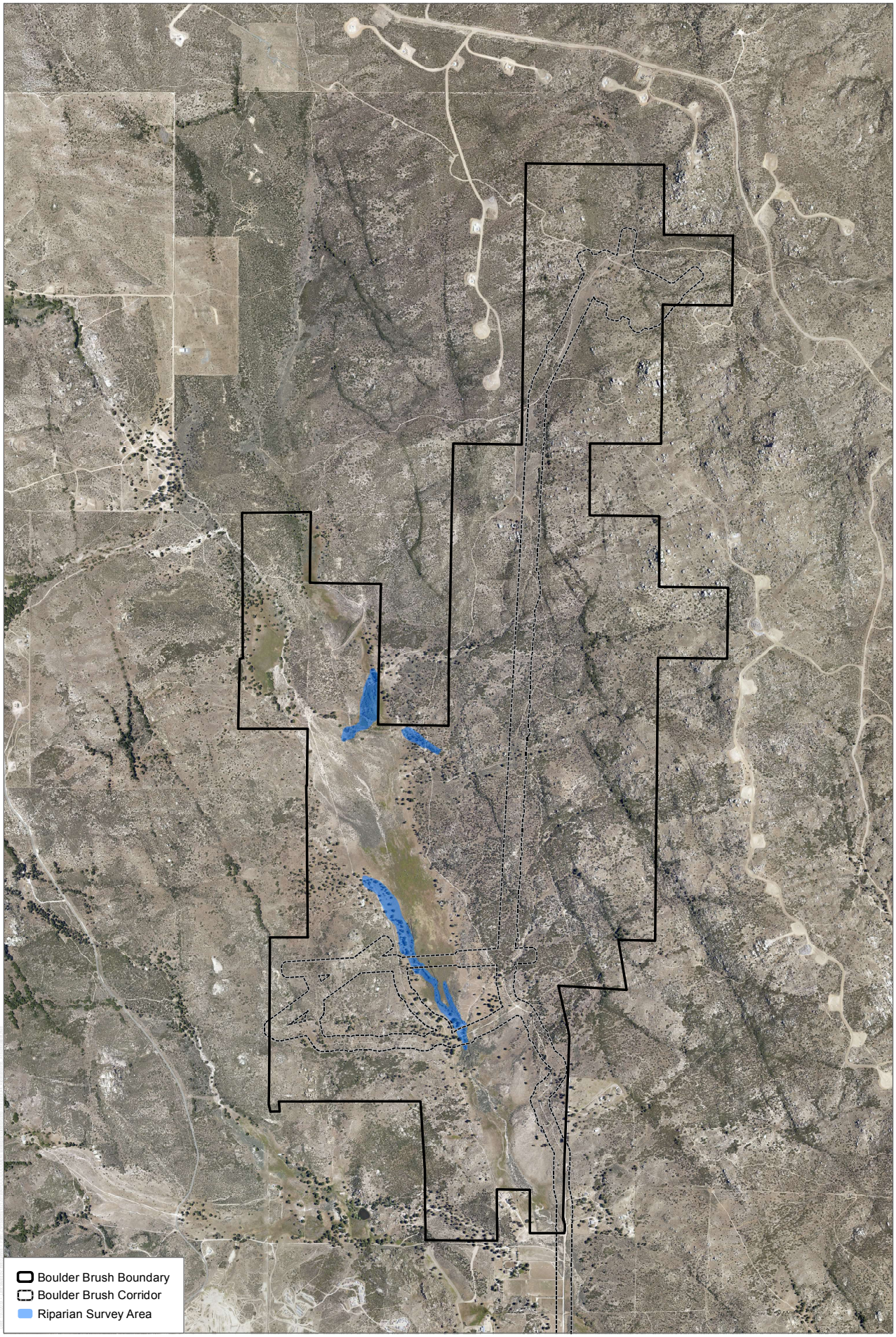

SOURCE: SANGIS 2017

DUDEK

0 800 1,600 Feet

FIGURE 3-4

Riparian Bird Survey Area - Boulder Brush Corridor

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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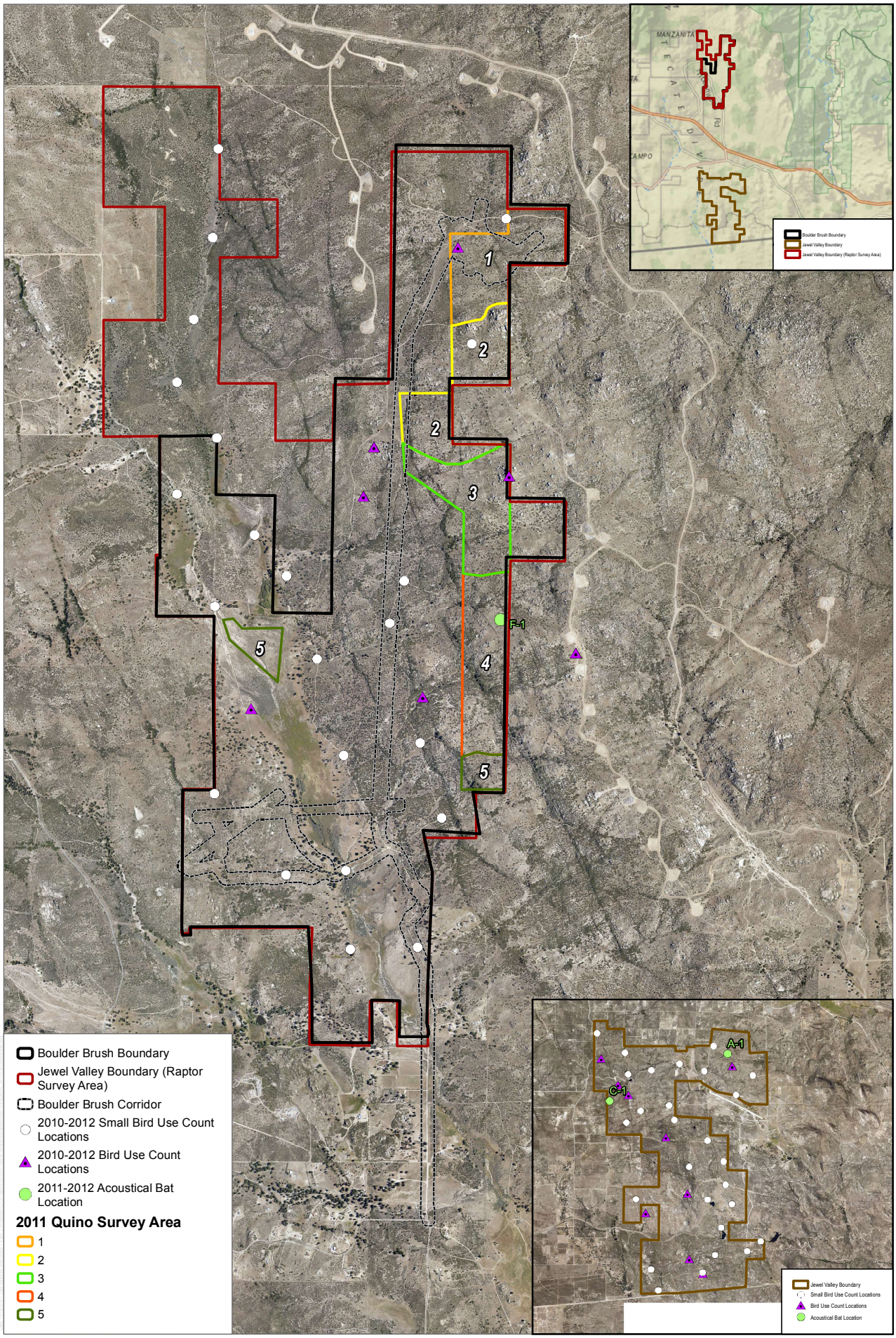

SOURCE: SanGIS 2017

DUDEK

0 1,450 2,900 Feet

FIGURE 3-5

Previous Wildlife Surveys for Jewel Valley Wind Project with Boulder Brush Boundary

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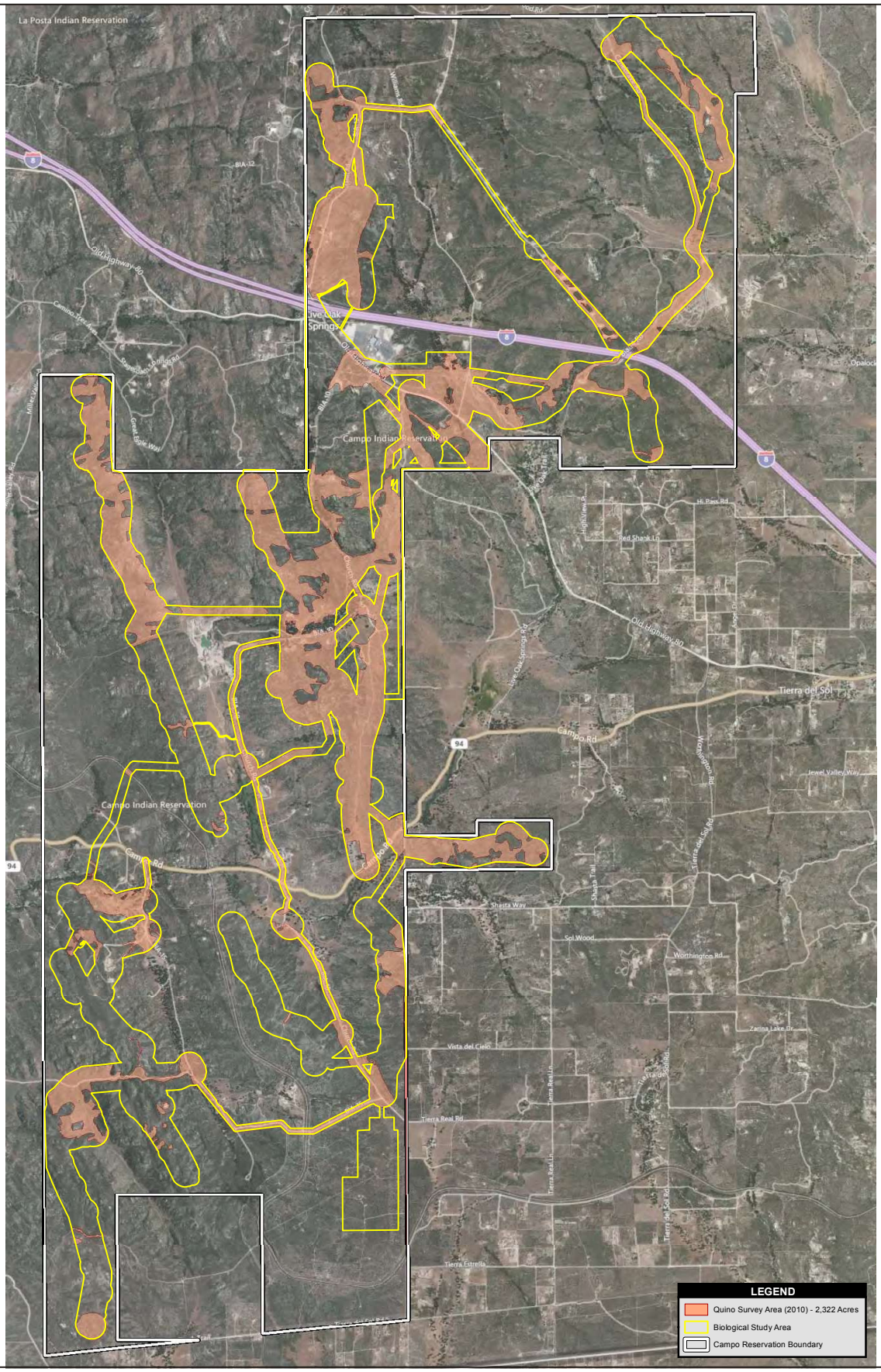

SOURCE: AECOM 2012

FIGURE 3-6

2010 Quino Checkerspot Butterfly Survey Area (AECOM) - Campo Reservation

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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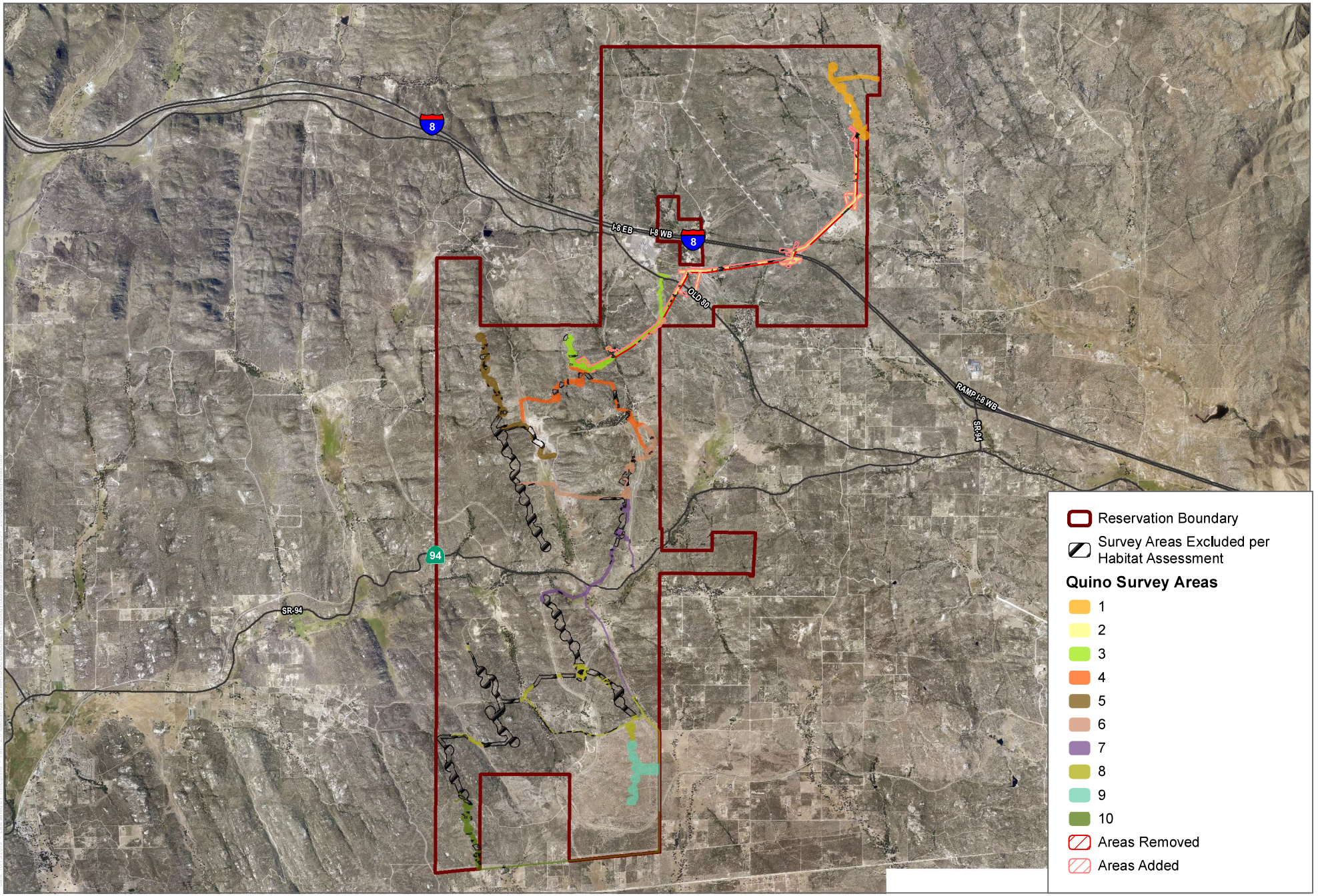

SOURCE: USGS 2018; SANGIS 2017

DUDEK

0 2,000 4,000 Feet

FIGURE 3-7

2018 Quino Checkerspot Butterfly Survey Areas - Campo Reservation

Biological Resources Technical Report For the Campo Wind Project with Boulder Brush Facilities

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